Release Notes for Cisco Unified CallManager Release 5.1(3e)

January 21, 2009

This document includes:

- Release notes for previous Cisco Unified CM 5.1(3) releases.
- Information added specifically for Cisco Unified CM release 5.1(3e) as shown in the Updates that are included in the Unified CM 5.1(3e) Release Notes table.

Table 1 Updates that are included in the Unified CM 5.1(3e) Release Notes

Updates
• Added the "Important Notes for Cisco Unified CM 5.1(3e)"section on page 5
• Updated the "Open Caveats as of January 19, 2009"section on page 53
• Added the "Servers in a Cluster Must Run the Same Cisco Unified CM."section on page 55
• Added the "Netdump Utility"section on page 55
• Added the "Considerations for LDAP Port Configuration"section on page 55
• Added the "Trunk Chapter Does Not State That Host Name is Valid Configuration for Destination Address Setting"section on page 57
• Added the "Pilot Point Chapter Includes Incorrect Number of Allowed Characters for Description Setting"section on page 69

Note You can view the release notes for previous versions of Cisco Unified Communications Manager here: http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html

Before you install Unified CM, Cisco recommends that you review the "Important Notes"section on page 5 for information about issues that may affect your system.

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Note To ensure continuous operation and optimal performance of your Unified CM system, you must upgrade to Cisco Unified CM 5.1(3e).

If you ordered and received a server that is preloaded with Cisco Unified CM 5.0(4), you can download Unified CM software, version 5.1(3x), at Cisco.com.

Cisco recommends that you check Cisco.com for the latest software updates to Unified CM and its applications and download and install the latest updates on your system before the deployment of your Unified CM system. For a list of commonly used URLs, see the "Upgrading System Software"section on page 3.

Contents

These release notes discuss the following topics:

Introduction

Cisco Unified CallManager, the call-processing component of the Cisco Unified Communications System, extends enterprise telephony features and capabilities to IP phones, media processing devices, voice-over-IP (VoIP) gateways, mobile devices, and multimedia applications.

System Requirements

The following sections comprise the system requirements for this release of Unified CM.

Server Support

Make sure that you install and configure Cisco Unified CM Release 5.1(3e) on a Cisco Media Convergence Server (MCS) or a Cisco-approved HP server configuration or a Cisco-approved IBM server configuration.

To find which MCS are compatible with Cisco Unified CM Release 5.1(3e), refer to the Supported Servers for Cisco Unified Communications Manager Releases: http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html.

Note Make sure that the matrix shows that your server model supports Unified CM Release 5.1(3e).

Note Be aware that some servers that are listed in the Cisco Unified Communications Manager Software Compatibility Matrix may require additional hardware support for Unified CM Release 5.1(3e). Make sure that your server meets the minimum hardware requirements, as indicated in the footnotes of the Cisco Unified Communications Manager Software Compatibility Matrix. Unified CM requires a minimum of 2 GB of memory, 72-GB disk drive, and 2-GHz processor.

Uninterruptible Power Supply

Ensure that you connect each Cisco Unified CM node to an uninterruptible power supply (UPS) to provide backup power and protect your system.

Caution Failure to connect the Cisco Unified Communication Manager nodes to a UPS may result in damage to physical media and require a new installation of Unified CM.

Determining the Software Version

To determine whether you need to upgrade the Cisco Unified CM software that you are using, launch Cisco Unified CallManager Administration. The following information displays:

- System version
- Administration version

Upgrading System Software

Note For information about supported Cisco Unified CM upgrades, see the Cisco Unified Communications Manager Compatibility Matrix at the following URL:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html

You can access the latest software upgrades for Cisco Unified CM 5.1 on Cisco.com.

- Download Unified CM Updates, Locale Installer, Personal Assistant, and Cisco Security Agent, page 4
- Download Phone Firmware, page 4

Download Unified CM Updates, Locale Installer, Personal Assistant, and Cisco Security Agent

To download Unified CM Updates, Locale Installer, Personal Assistant, and Cisco Security Agent, follow this procedure.

Procedure

Step 1 Go to http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml.

Step 2 Click **To access Voice Software downloads, click here**.

Step 3 From the Downloads window, click the "+" next to IP Telephony.

Step 4 From the options that display, click the "+" next to Call Control.

Step 5 From the options that display, click the "+" next to Cisco Unified Communication Manager (CallManager).

Step 6 From the options that display, click **Cisco Unified Communications Manager Version 5.1**.

- To download Cisco Unified CM 5.1 software, click **Unified Communications Manager Updates**.
- To download Locale Installer, click **Unified Communications Manager/CallManager Locale Installer**.
- To download Upgrade Assistant, click **Unified Communications Manager/CallManager Upgrade Assistant**.
- To download Cisco Security Agent, click**Unified Communications Manager/CallManager Utilities**.

Download Phone Firmware

To download Phone Firmware, follow this procedure.

Procedure

Step 1 Go to http://tools.cisco.com/support/downloads/go/Redirect.x?mdfid=278875240.

Step 2 From the Downloads window, click the "+" next to IP Telephony.

Step 3 From the options that display, click the "+" next to IP Phones.

Step 4 From the options that display, click the "+" next to Cisco Unified IP Phones 7900 Series.

Step 5 From the options that display, click the link for your phone.

Related Documentation

The following documentation supports Cisco Unified CM Release 5.1(3x):

- *Cisco Unified CallManager System Guide*
- *Cisco Unified CallManager Administration Guide*
- *Cisco Unified CallManager Features and Services Guide*

- *Cisco Unified CallManager Security Guide*
- *Cisco Unified Serviceability Administration Guide*
- *Cisco Unified Serviceability System Guide*
- *Cisco Unified Reporting Administration Guide*
- *Cisco Unified CallManager CDR Analysis and Reporting Administration Guide*
- *Cisco Unified CallManager 5.1(3) Call Detail Records Definitions*
- *Troubleshooting Guide for Cisco Unified CallManager*
- *Cisco Unified CallManager Bulk Administration Guide*
- *Cisco Unified CallManager Release Notes*
- *Adding a Cluster or Single Server for Cisco Unified CallManager Release 5.1(3)*
- *Installing Cisco Unified CallManager Release 5.1(3)*
- *Upgrading Cisco Unified CallManager Release 5.1(3)*
- *Data Migration Assistant Administration Guide*
- *Cisco Unified CallManager Documentation Guide for Release 5.1(3)*
- *Release Notes for Cisco Unified CallManager Release 5.1(2b)*
- *Cisco Unified Communications Operating System Administration Guide Release 5.1(1)*

Limitations and Restrictions

A list of compatible software releases represents a major deliverable of Cisco Unified CM System testing. The recommendations, which are not exclusive, represent an addition to interoperability recommendations for each individual voice application or voice infrastructure product.

For a list of software and firmware versions of IP telephony components and contact center components that were tested for interoperability with Cisco Unified CM 5.1(x) as part of Cisco Unified Communications System Release 5.1(x) testing, see

http://www.cisco.com/go/unified-techinfo

Note Be aware that the release of Cisco IP telephony products does not always coincide with Cisco Unified CM releases. If a product does not meet the compatibility testing requirements with Cisco Unified CM, you need to wait until a compatible version of the product becomes available before you can upgrade to Cisco Unified CM Release 5.1(3). For the most current compatibility combinations and defects that are associated with other Cisco Unified CM products, refer to the documentation that is associated with those products.

Important Notes

Important Notes for Cisco Unified CM 5.1(3e)

The following section contains important information that may have been unavailable previously.

- Caveats Resolved in Cisco Unified CM 5.1(3e), page 7
- Upgrading to Unified CM Release 5.1(3x), page 7

Important Notes for Cisco Unified CM Releases 5.1(3, a, b, c, d)

The following section contains important information that may have been unavailable upon the initial release of documentation for Cisco Unified CM Release 5.1(3) and was documented in a previous 5.1(3) release.

Caveats Resolved in Cisco Unified CM 5.1(3e)

In addition to the caveats that are mentioned elsewhere in this document, the following caveats get resolved in this release of Unified CM.

- CSCsk86705 ForwardAll CFA removed from CCMUser window.
- CSCsu93547 Search of CTI route points by dev name returns multiple names for the same dev.
- CSCsu77940 EM logout or other notify gets delayed for up to a minute.
- CSCsr86439 Requirement exists for IDP release note documentation.
- CSCsu63446 "QRT: enhance thread mutex handling in case of http failure" occurs.
- CSCsu78475 SMDI link server does not work properly.
- CSCsa67496 Default value for, Disable Non-Registered SCCP Keepalives service parameter should be changed to "False".
- CSCsw63783 Map disconnect cause 31 to 16 occurs when call is in Active10 state.

Upgrading to Unified CM Release 5.1(3x)

If you are upgrading from Cisco Unified CM Release 4.1.3, 4.2.3, or 5.1.1, use the Product Upgrade Tool (PUT) or the PUT for registered customers only to obtain a media kit and license or to purchase the upgrade from Cisco Sales.

To use the PUT, you are required to enter your Cisco Software Application Support Plus Upgrades (SASU) contract number and request the CD/CD set. If you do not have a SASU contract, you must purchase the upgrade from Cisco Sales.

For more information about supported Cisco Unified CM upgrades, see the Cisco Unified Communications Manager Software Compatibility Matrix at the following URL:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html

Cisco UXL Web Service Added to Service Activation Window

In most Cisco Unified CM releases, the TabSync client in Cisco IP Phone Address Book Synchronizer uses AXL for end-user queries to the Cisco Unified CM database. In Cisco Unified CM 5.1(3e), the TabSync client uses the Cisco UXL Web Service for queries to the Cisco Unified CM database, which ensures that Cisco IP Phone Address Book Synchronizer users have access only to end-user data that pertains to them.

In the Service Activation window in Cisco Unified CallManager Serviceability (**Tools > Service Activation**), you can activate the Cisco UXL Web Service, which performs the following functions:

- Conducts authentication checks by verifying the end user name and password when an end user logs in to Cisco IP Phone Address Book Synchronizer.
- Conducts a user authorization check by only allowing the user that is currently logged in to Cisco IP Phone Address Book Synchronizer to perform functions such as listing, retrieving, updating, removing, and adding contacts.

Caution You cannot upgrade to a release that does not include this service. Please see the Cisco Unified Communications Manager Software Compatibility Matrix at http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/compat/ccmcompmatr.html

Recovery Disk for Cisco Unified CM Release 5.1(3e)

The recovery disk for this release of Unified CM remains

5.1.3.1000-12_recovery.iso

(Cisco Unified CallManager Recovery Disk for 5.1(3) 5.1(3) 01-OCT-2007 209682432)

Caveats Resolved in Cisco Unified CM 5.1(3d)

In addition to the caveats that are mentioned elsewhere in this document, the following caveats get resolved in this release of Unified CM.

- CSCso96280 Core dump and Unified CM CTI service crash.
- CSCsm46064 Problem occurs when Unified CM sends out an invite via tel URI.
- CSCsu38644 Valid SIP message causes CCM process to crash.
- CSCsr20762 Need exists for product name in ISO filename.
- CSCsl21150 Zero file size directory prevents upgrade recognition.
- CSCso75027 TSP buffer overflow causes CTI crash.
- CSCsm80834 Need exists for clusterreset to ignore commented-out lines in sqlhosts.
- CSCsb80753 ExecuteSQLQuery returns error.
- CSCso53771 Unauthenticated access to disaster recovery framework occurs.
- CSCso11097 Upgrade causes a corruption of the RAID controller firmware on an MCS-7845-I2 server.
- CSCsm87181 Utils service stop/start/restart for "A cisco DB" service does not work.
- CSCsm83602 When you modify a phone button template, a large number of change notifys get generated.
- CSCsm78770 Tomcat displays OutOfMemory error.
- CSCsm67799 Need exists for a default alert in RTMT Alert Central for database in blockedDDR.
- CSCsm32426 Cannot repair or reset replication after virtual shared memory runs out.
- CSCsl16967 DRSSticks in Unified CM database backup if a large number of CDR files exist in the preserved folder.
- CSCsl15544 VG248 and VG224 registration errors cause high CPU usage that result in a database block.
- CSCsk99178 Cisco TSP crashes when the application sends multiple LineOpenPhoneOpen.
- CSCsk97288 SRST reference update causes massive change notification storm.
- CSCsk62547 ServM process increases memory use with each backup.
- CSCsk38023 CiscoTSP Wave Driver Vista support

- CSCsk35503 CiscoTSP Windows Vista support
- CSCsk10706 Missing, mismatched and/or corrupted tables exist on subscriber nodes if replication gets broken during a replicate set.
- CSCsk06916 ST cannot allocate memory from the virtual shared memory.
- CSCsj95909 The CTL client plugin does not install or does not work properly on Vista systems.
- CSCsj53293 Remote unauthenticated users can log out any extension mobility (EM) user from a Unified CM server.
- CSCsi70926 TSP seacquire causes intermittent issues.
- CSCsg70952 TSP reports that a phone is not in a CFA state; however, the CFA is configured on the phone.
- CSCsg06024 PMR 84055 Tomcat server down because of database engine DDR block.
- CSCec27300 CiscoTSP restricts the number of characters in a username to a maximum of 30.

Important Information About Update or Delete Transaction by Using Custom File in BAT

Do not use the insert or export transaction file or files that are created with bat.xlt for the custom file-based transactions in BAT. Instead, you must create a custom file with the details of the records that need to be updated or deleted. In this custom file, you can enter values for name, description, and user ID based on the search option available on the corresponding custom file-based Find/List page. Make sure that you do not include a header in this file. For example, for **Update Phones > Custom File**, if you select Device Name as the search option, the custom file should contain only device names without the header.

Cisco Unified CM Does Not Support Recovery of Administration or Security Passwords

Cisco Unified CM does not support recovery of administration or security passwords. If you lose these passwords, you must reset the passwords, as described in the *Cisco Unified Communications Operating System Administration Guide*.

The *Cisco Unified Communications Operating System Administration Guide* calls the section, "Recovering the Administrator or Security Passwords," instead of "Resetting the Administrator or Security Passwords." Access the "Recovering the Administrator or Security Passwords" section to reset the passwords.

Clarification for Call Park Configuration

Consider the following information when you configure Call Park:

Because Call Park numbers cannot overlap between Cisco Unified CM servers, ensure that each server has its own unique number range.

Call Park numbers may have an associated partition that restricts access to the Call Park numbers and prevents retrieval of parked calls. If partitions are used to restrict access to Call Park numbers, you must define a unique call park number or range of call park extension numbers for each partition on each Cisco Unified CM in the cluster.

When the end user invokes Call Park, Unified CM attempts to find an available Call Park number from a Call Park partition that is currently accessible via the calling search space for the party that invoked Call Park.

Viewing Privileges for Roles in Cisco Unified CM Administration

The Role Configuration window in Cisco Unified CM Administration displays the privileges for each standard role. To access the Role Configuration window, find the role by choosing **User Management > Role**; when the Find and List Roles window displays, click **Find**. Click the link for the standard role that you want to view. After the Role Configuration window displays, you can view the privileges in the Resource Access Information pane.

TAPS Name Change in Bulk Administration Tool

Documentation refers to the Tool for Auto-Registered Phone Support (TAPS) as Cisco Unified CallManager Auto-Register Phone Tool in the Online Help for Bulk Administration. All references to 'Cisco Unified CallManager Auto-Register Phone Tool' in the Bulk Administration Tool Online Help should be read as 'Tool for Auto-Registered Phone Support (TAPS)'. This complies with the Bulk Administration user interface.

For More Information

For information on configuring additional features in BAT, refer to the BAT documentation for Cisco Unified CM.

CSCsk86705 ForwardAll CFA Removed from CCMUser Window

The options for the Show Call Forwarding enterprise parameter specified only True and False. The need existed for a third option, Show Only Forward All.

Unified CM Release 5.1(3d) resolves this caveat.

CSCsl71487 Cimserver Memory Leak Fix

RTMT and perfmon counters show that the cimserver process consumes increasing amounts of memory on IBM MCS servers. Over a period of several weeks, cimserver gradually consumes the majority of available virtual memory and eventually causes the server to hang.

Unified CM 5.1(3d) includes the fix for this memory leak.

Do Not Log On to the Console During Busy Hours

Because of the CPU resources that are consumed, Cisco does not recommend that you log on to the console during busy hours. If you log on during busy hours, Code Yellow or Code Red alarms may be raised, depending on the tasks that are being performed and the CPU that is utilized to perform those tasks. Cisco recommends that console usage (remote or local) be limited to maintenance or upgrades during Maintenance windows.

(Cisco Unified CallManager Recovery Disk for 5.1(3) 5.1(3) 01-OCT-2007 209682432)

New CLI Command - utils dbreplication clusterreset

This release of Unified CM includes a new CLI command, **utils dbreplication clusterreset** .

This command can be used to debug database replication, but should only be used if **utils dbreplication reset all** has previously been tried and has failed to restart replication on the cluster. This command will tear down and rebuild replication for the entire cluster. After using this command, each sub needs to be rebooted. Also, once the subs have been rebooted, you must go to the pub and issue the CLI command **utils dbreplication reset all**.

Voice Mailbox Mask Interacts with Diversion Header

When a call gets redirected from a DN to a voice-mail server/service that is integrated with Unified CM by using a SIP trunk, the voice mailbox mask on the voice-mail profile for the phone modifies the diverting number in the SIP diversion header. This expected behavior occurs because the diversion header gets used by the Unified CM server to choose a mailbox.

CSCso45910 - The Server Will Not Boot to the New Partition.

Prior to this release, after an upgrade, the server would not boot to the new partition.

This release of Unified CM resolves this caveat.

Cisco TSP Vista Support

Cisco TSP supports the Microsoft Vista operating system.

Ensure that the first-time installation of the CiscoTSP and Unified CM TSP Wave driver on a computer that is running the Vista operating system gets performed as a fresh install.

CiscoTSP Limitations on Windows Vista Platform

Always perform the first-time installation of the CiscoTSP and Unified CM TSP Wave Driver on a Vista machine as a fresh install.

- Turn off the Windows firewall if a secure connection to the Unified CM gets used.
- Turn off the Windows firewall if the Unified CM TSP Wave Driver gets used for inbound audio streaming.

- Disable all other devices in the “Sound, video and game controllers” group if the Unified CM TSP Wave Driver gets used for audio streaming.

CSCsm47603 BIOS Upgrade Required

The E6400 processor that IBM includes in their 7825I3 servers does not get supported by the BIOS that is bundled with Cisco Unified CM Release 5.1(3). Because of this, Unified CM Release 5.1(3) downrevs the BIOS to an unsupported version during installation or upgrade. Unfortunately, during startup, the system simply warns the user by displaying a warning message. The customer will not see this message if he is not constantly looking at the terminal. The system allows startup to continue in the unsupported state. The implications of running in this state remain unknown.

This release of Cisco Unified CM resolves this problem.

Australia Summer Time

This year, Australia Summer Time ends on April 6, 2008.

Summer Time begins again at 2:00AM October 5, 2008 (the first Sunday in October) and ends at 2:00AM on April 5, 2009 (the first Sunday in April).

This release of Cisco Unified CM includes the specific dates for the Australia Summer Time changes for this year.

Venezuela Implements New Time Zone

Venezuela implemented a new time zone that is one-half hour behind the previous time zone (GMT-4).

Cisco Unified CM Release 5.1(3a) incorporates this new time zone into Cisco products that are used in Venezuela.

Clarification for Call Park Configuration

Consider the following information when you configure Call Park:

Because Call Park numbers cannot overlap between Unified CM servers, ensure that each Cisco Unified CM server has its own unique number range.

Call Park numbers may have an associated partition that restricts access to the Call Park numbers and prevents retrieval of parked calls. If partitions are used to restrict access to Call Park numbers, you must define a unique call park number or range of call park extension numbers for each partition on each Cisco Unified CM in the cluster.

When the end user invokes Call Park, Cisco Unified CM attempts to find an available Call Park number from a Call Park partition that is currently accessible via the calling search space for the party that invoked Call Park.

Address Resolution Protocol (ARP) Table Can Fill Up Quickly

Do not install Cisco Unified CM in a large Class A or Class B subnet that contains a large number of devices because the Address Resolution Protocol (ARP) table can fill up quickly (maximum 1024 entries, by default). When the ARP table gets full, Cisco Unified CM can have difficulty talking to endpoints and cannot add more phones.

Cisco Unified CallManager Administration Does Not Support Browser Buttons

Cisco Unified CallManager Administration does not support the buttons in your browser. Do not use the browser buttons (for example, the Back button) when you perform configuration tasks.

Internet Explorer 7 Certificate Support

This release supports Internet Explorer 7 web browser for Cisco Unified CallManager Administration. Internet Explorer 7 adds security features that change the way the browser handles Cisco certificates for website access. Because Cisco provides a self-signed certificate for the Cisco Unified CM server, Internet Explorer 7 flags the Cisco Unified CallManager Administration website as untrusted and provides a certificate error, even when the trust store contains the server certificate.

Note Internet Explorer 7, which is a Windows Vista feature, also runs on Windows XP Service Pack 2 (SP2), Windows XP Professional x64 Edition, and Windows Server 2003 Service Pack 1 (SP1).

Be sure to import the Cisco Unified CM certificate to Internet Explorer 7 to secure access without having to reload the certificate every time that you restart the browser. If you continue to a website that has a certificate warning and the certificate is not in the trust store, Internet Explorer 7 retains the certificate for the current session only.

After you download the server certificate, Internet Explorer 7 continues to display certificate errors for the website. You can ignore the security warnings when the Trusted Root Certificate Authority trust store for the browser contains the imported certificate.

The following procedure describes how to import the Cisco Unified CM certificate to the root certificate trust store in Internet Explorer 7.

Ensure JRE is present to provide all the Java-related browser support for IE6 or IE7.

Procedure

Step 1 Enter the hostname, localhost, or IP address for the Cisco Unified CallManager Administration website. The browser displays a Certificate Error: Navigation Blocked window to indicate that this website is untrusted.

Step 2 To access the server, click **Continue to this website (not recommended)**. The Cisco Unified CallManager Administration displays, and the browser displays the address bar and a Certificate Error status in red.

Step 3 To import the server certificate, click the **Certificate Error** status box to display the status report. Click the **View certificates** link in the report.

Step 4 Verify the certificate details. The Certification Path tab displays, “This CA Root certificate is not trusted because it is not in the Trusted Root Certification Authorities store.”

Step 5 Select the General tab in the Certificate window and click **Install Certificate**. The Certificate Import Wizard launches.

Step 6 To start the Wizard, click **Next**. The Certificate Store window displays.

Step 7 Verify that the Automatic option, which allows the wizard to select the certificate store for this certificate type, is selected and click **Next**.

Step 8 Verify the setting and click **Finish**. A security warning displays for the import operation.

Step 9 To install the certificate, click **Yes**. The Import Wizard displays "The import was successful."

Step 10 Click **OK**. The next time that you click the View certificates link, the Certification Path tab in the Certificate window displays "This certificate is OK."

Step 11 To verify that the trust store contains the imported certificate, click **Tools > Internet Options** in the Internet Explorer toolbar and select the Content tab. Click **Certificates** and select the Trusted Root Certifications Authorities tab. Scroll to find the imported certificate in the list.

Step 12 After importing the certificate, the browser continues to display the address bar and a Certificate Error status in red. The status persists even if you reenter the hostname, localhost, or IP address or refresh or relaunch the browser.

Internet Explorer 7 Support

The following applications now support Internet Explorer 7:

- Cisco Unified CallManager Administration
- Cisco Unified CallManager Bulk Administration Tool (BAT)
- Cisco Unified CallManager Serviceability
- Disaster Recovery System (DRS)
- Cisco Unified CallManager Operating System (OS)
- Cisco Unified CallManager CDR Analysis and Reporting (CAR)

New Cisco Unified Reporting Application

The new Cisco Unified Reporting web application, which is accessed at the Cisco Unified CM console, generates reports for troubleshooting or inspecting cluster data.

This convenient tool provides a snapshot of cluster data without requiring multiple steps to get the data. The tool design facilitates gathering data from existing sources, comparing the data, and reporting irregularities.

A report combines data from one or more sources on one or more servers into one output view. For example, you can view a report that shows the *hosts* file for all servers in the cluster.

The application gathers information from the publisher server and each subscriber server. A report provides data for all active cluster nodes that are accessible at the time that the report is generated.

Some reports run checks to identify conditions that could impact cluster operations. Status messages indicate the outcome of every data check that is run.

Only authorized users can access the Cisco Unified Reporting application. By default, this includes administrator users in the Standard Unified CM Super Users group. As an authorized user, you can view reports, generate new reports, or download reports at the graphical user interface (GUI).

Cisco Unified Reporting includes the following capabilities:

- A user interface for generating, archiving, and downloading reports
- Notification message if a report will take excessive time to generate or consume excessive CPU

Refer to the *Cisco Unified Reporting Administration Guide* for more information.

Updating the Hostname or IP Address in the Server Configuration Window

Before you change the hostname or IP address of a server in the Server Configuration window in Cisco Unified CallManager Administration, consider the following information:

- Cisco Unified CallManager Administration does not prevent you from updating the Host Name/IP Address field under any circumstances.
- When you attempt to change the hostname or IP address in the Server Configuration window, the following message displays after you save the configuration: "Changing the host name/IP Address of the server may cause problems with Cisco Unified CallManager. Are you sure that you want to continue?" Before you click OK, make sure that you understand the implications of updating this field; for example, updating this setting incorrectly may cause Cisco Unified CallManager to become inoperable; that is, the database may not work, you may not be able to access Cisco Unified CallManager Administration, and so on. In addition, updating this field without performing other related tasks may cause problems for Cisco Unified CallManager.
- For additional information on changing IP address/hostnames for Cisco Unified CM, refer to *Changing the IP Address and Host Name for Cisco Unified Communications Manager 5.x and 6.x Servers*.

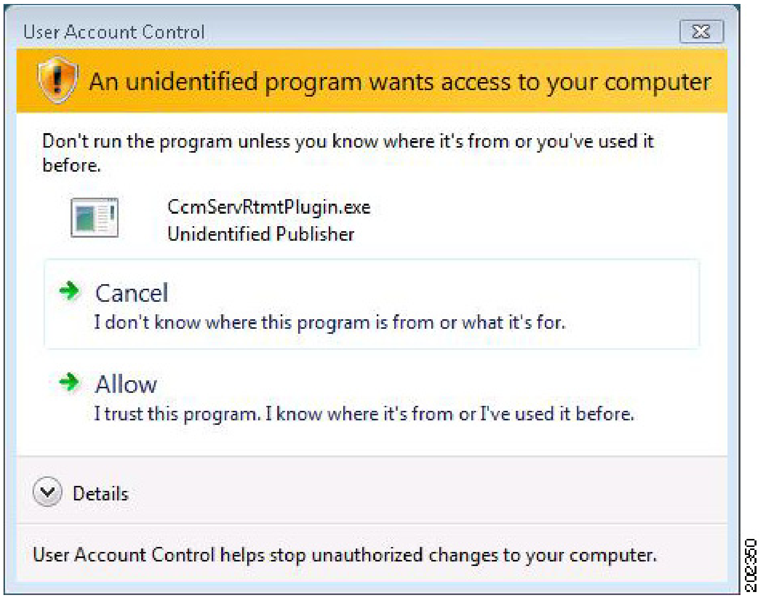
SIP Network/IP Address Field Required for SIP Fallback to SRST Gateway

Although Cisco Unified CallManager Administration does not list the SIP Network/IP Address field as a required setting, you must configure the SIP Network/IP Address field and the SIP Port field in the SRST Reference Configuration window for a SIP device to fall back to the SRST-enabled gateway. For more information on these fields and SRST references, refer to the *Cisco Unified CallManager Administration Guide*.

RTMT on the Microsoft Vista Platform

When you install RTMT on the Microsoft Vista platform, the system displays the User Account Control popup window that is shown in Figure 1 due to a limitation in the InstallAnywhere software. This one-time popup displays only when you are installing RTMT. Select **Allow** to continue.

Figure 1 User Account Control Popup Window



User Account Control

An unidentified program wants access to your computer

Don't run the program unless you know where it's from or you've used it before.

CcmServRtmtPlugin.exe
Unidentified Publisher

Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details

User Account Control helps stop unauthorized changes to your computer.

CSCsj22450 Login Failure Does Not Send a Message to the Syslog

This resolved caveats adds the following alarm catalog and two alarms:

LoginAlarmCatalog:

AuthenticationFailed - When a web application login attempt fails

AuthenticationSucceeded - When a web application login attempt succeeds

The alarm events get logged in to the local and remote SYSLOG.

Note No corresponding alerts exist for these two authentication alarms.

CSCsh58895 Unified CM Cannot Send System or Platform Agent Logs to Remote Syslog Server

Unified CM can now send syslog messages to a remote server.

You can configure two new enterprise parameters from **Cisco Unified CallManager Administration > System > Enterprise Parameters**:

- Remote Syslog Server Name - You can enter the name or IP address of the remote Syslog server that you want to use to accept Syslog messages. If the server name is not specified, Cisco Unified Serviceability does not send the Syslog messages.

Note The Unified CM server does not accept Syslog messages from another server.

Remote Syslog Server Name:

  - Maximum length: 255
  - Allowed values: Provide a valid remote syslog server name that comprises (A-Z,a-z,0-9,.,-)
- Syslog Severity For Remote Syslog messages - You can select the desired Syslog messages severity for remote syslog server. The system sends all the syslog messages with selected or higher severity levels to the remote syslog. If the remote server name is not specified, Cisco Unified Serviceability does not send the Syslog messages.

RTMT Requirement When Unified CM is Upgraded

If you are running the Cisco Unified Communications Real-Time Monitoring Tool (RTMT) client and monitoring performance counters during an upgrade, the performance counters will not update during and after the upgrade. To continue monitoring performance counters accurately after the upgrade completes, you must either reload the RTMT profile or restart the RTMT client.

iLO Flashing Causes the Login Window to Disappear After Installation or Upgrade

As part of the installation or upgrade processes, the iLO firmware in the servers gets flashed. During the flashing, messages display for the convenience of the user. Because of this, after the installation or upgrade completes, the default login window gets masked by the messages.

To see the login window, click **Enter**.

Serviceability Session Timeout Not Graceful

When a session has been idle for more than 30 minutes, the Cisco Unified Serviceability user interface allows you to make changes before indicating that the session has timed out and redirecting you to the login window. After you log in again, you may need to repeat those changes. This behavior occurs in the Alarm, Trace, Service Activation, Control Center, and SNMP windows. The only workaround requires you to log out by using the Logout button before making any changes in the user interface if you know that the session has been idle for more than 30 minutes.

New and Changed Information for Unified CM 5.1(3x)

The following section contains information that is new or changed for Unified CM Release 5.1(3x).

- Cisco Unified IP Phones, page 34
- Cisco Unified CallManager Serviceability, page 48
- Operating System CLI Commands, page 36

Disaster Recovery Manual Backup Window

Disaster Recovery System backs up CAR/CDR data automatically when you check the CCM checkbox on the Manual Backup window. The Manual Backup window no longer contains a CAR/CDR checkbox.

New Service Parameters Added to Extension Mobility

Extension Mobility includes four new service parameters. You can find these new parameters at **System > Service Parameters > Cisco Extension Mobility > Advanced**.

- Validate IP Address, page 18
- Trusted List of IPs, page 19
- Allow Proxy, page 19
- Extension Mobility Cache Size, page 19

Validate IP Address

This parameter specifies whether validation of the IP address of the source that is requesting login or logout occurs.

The parameter can take values of true or false.

- If the parameter specifies true, the IP address from which an EM log in or log out request is made gets validated to ensure that it is a trusted IP address.

  Validation Procedure

  – Validation first gets performed against the cache for the device to be logged in or logged out.

  – If the requesting source IP address is not found in cache, the IP address gets checked against the list of trusted IP addresses and hostnames that are specified in the Trusted List of IPs service parameter.

  – If the requesting source IP address is not present in the Trusted List of IPs service parameter, it gets checked against the list of devices that are registered to Unified CM.

  Validation Effect

  – If the IP address of the requesting source is found in the cache or in the list of trusted IP addresses or is a registered device, the device can perform login or logout.

  – If the IP address is not found, the log in or log out attempt gets blocked.

- If the parameter specifies false, the EM log in or log out request does not get validated.

Note Validation of IP addresses may increase the time that is equired to log in or log out a device, but it offers an additional layer of security in the effort to prevent unauthorized log in or log out attempts, especially when used in conjunction with log ins from separate trusted proxy servers for remote devices.

For more information, refer to the design guidelines in the extension mobility documentation.

Trusted List of IPs

This parameter displays as a text box (maximum length - 1024 characters). You can enter strings of trusted IP addresses or hostnames, separated by semicolons, in the text box. IP address ranges and regular expressions do not get supported.

Allow Proxy

Allow Proxy can take values of true or false.

- If the parameter specifies true, the system allows EM log in and log out operations using a web proxy.
- If the parameter specifies false, EM log in and log out requests that come from behind a proxy get rejected.

Note The setting that you select takes effect only if the Validate IP Address parameter specifies true.

Extension Mobility Cache Size

This parameter displays as a text box in which the administrator can configure the size of the device cache that is maintained by extension mobility. The minimum value for this field specifies 1000, and the maximum specifies 20000. The default specifies 10000.

Note The value you enter takes effect only if the Validate IP Address parameter specifies true.

New Cisco IP Phone Expansion Modules Supported

Cisco Unified CallManager now includes support for the following Cisco Unified IP Phone expansion modules:

- 7915 12-Button Line Expansion Module
- 7915 24-Button Line Expansion Module
- 7916 12-Button Line Expansion Module
- 7916 24-Button Line Expansion Module

Installation, Upgrade, and Disaster Recovery

Installation Overview

For release 5.1(3), the Cisco Unified CM installation process includes the following new features:

- Process allows you to set the maximum transmission unit (MTU) size
- Enhanced validation ensures that a subsequent node can communicate with the first node

MTU Size Parameter

During installation, you can configure the MTU size parameter. The MTU size represents the largest packet, in bytes, that the host will transmit on the network. If you are unsure of the MTU setting for your network, use the default value, 1500 bytes.

Note You can also set the MTU size after installation by using the CLI command, **set network mtu**.

Enhanced Connectivity Validation

To ensure successful installation of a subsequent node, the system validates that the subsequent node can connect with the first node.

If connectivity validation fails, the installation process stops, and the system prompts you to reenter the network configuration information. After you update the network configuration information, you can continue with the installation.

Prior to connectivity validation, from the Network Connectivity Test Configuration window, you can choose whether you want the installation process to continue uninterrupted after a successful validation test or stop and display a successful validation message.

- To pause the installation after the system successfully validates network connectivity, choose **Yes**.
- To continue the installation without a pause, choose **No**.

Enhanced Documentation

For Release 5.1(3), enhancements to the installation and upgrade documentation cover additional pre- and post-installation tasks, as well as specific steps for adding a new subscriber node to an existing cluster.

The Release 5.1(3) documentation set also includes a new document that describes the procedures for replacing a cluster or a single server in an existing cluster, *Replacing a Cluster or Single Server for Cisco Unified CallManager Release 5.1(3).*

Disaster Recovery System

DRS now backs up CAR/CDR data automatically. You do not need to select the CAR/CDR feature to back up this data.

Where to Find More Information

For more information, refer to the following documents:

- *Installing Cisco Unified CallManager Release 5.1(3)*
- *Upgrading Cisco Unified CallManager Release 5.1(3)*
- *Replacing a Cluster or Single Server for Cisco Unified CallManager 5.1(3)*
- *Disaster Recovery System Administration Guide Release 5.1(3)*

Cisco Unified CallManager Administration

This section contains information on the following topic:

- General Administration Enhancements, page 21
- Service and Enterprise Parameter Changes, page 21

General Administration Enhancements

The following requirements apply to Cisco Unified CallManager Administration:

- Microsoft Internet Explorer (IE) 6.0 or 7.0
- Netscape 7.1

Note This release does not support Microsoft IE 5.5 or Netscape 7.0.

Service and Enterprise Parameter Changes

The following parameter changes occur in Unified CM 5.1(3x).

- SIP TCP Unused Connection Timer (new service parameter)—This parameter, which supports the Cisco CallManager service, specifies the time, that is, the interval, in which Cisco Unified CallManager determines whether the TCP connection is still in use. When the timer expires, Cisco Unified CallManager checks for traffic in the preceding block of time, as specified by the value that you configure for the parameter; for example, 20 minutes. If no traffic occurred during that time, Cisco Unified CallManager closes the TCP connection. If traffic occurred, the TCP connection remains open until the timer expires again, at which point Cisco Unified CallManager checks for traffic again.

  For example, if the value for the parameter equals 20 minutes and the timer expires at 3:00, Cisco Unified CallManager examines the time from 2:40 to 3:00. If traffic occurred during that time, the connection remains open until the next examination at 3:20. If no traffic occurred from 3:00 to 3:20, Cisco Unified CallManager closes the TCP connection at or shortly after 3:20. If traffic occurred from 3:00 to 3:20, the TCP connection remains open until Cisco Unified CallManager checks for traffic again at 3:40, and so on.

  After you update this parameter, you must restart the Cisco CallManager service for the changes to take effect.

  For the default, maximum, and minimum values for the parameter, access the parameter in Cisco Unified CallManager Administration and either click the name of the service parameter or click the ? button in the Service Parameter Configuration window.

Note If you have other devices in the path of a call flow that includes a SIP timeout, like a firewall, you need to adjust those timeouts to be slightly longer than two times the value of this parameter.

- Auto select DN on any Partition (new enterprise parameter)—This parameter specifies whether the Directory Number Configuration window automatically selects the first matching DN to populate the window. The default specifies False, which means that the DN/Partition name gets used to populate the DN window. If the parameter is set to True and the DN is changed, the first entry that matches the DN gets used to populate the window.

- Report Socket Connection Timeout and Report Socket Read Timeout (two new enterprise parameters) - These two parameters support the Cisco Unified Reporting application, as follows:
  - The Report Socket Connect Timeout parameter specifies the maximum number of seconds that the application uses when it attempts to connect to another server. Increase this time if you experience connection issues on a slow network. The range for this required field specifies 5 to 120 seconds, and the default value specifies 10 seconds.
  - The Report Socket Read Timeout parameter specifies the maximum number of seconds that the application uses when it reads data from another server. Increase this time if you experience connection issues on a slow network. For this required field, the range specifies 5 to 600 seconds, and the default value specifies 60 seconds.

Refer to New Cisco Unified Reporting Application in theon page 5 for a brief description of the application.

Cisco Unified CallManager Applications and Features

The following sections describe the Cisco Unified CallManager 5.1 applications enhancements:

- CSCsi80592 MTP Resources Do Not Support Multicast Music on Hold, page 22
- Cisco Unified CallManager Assistant, page 22

CSCsi80592 MTP Resources Do Not Support Multicast Music on Hold

The following restriction exists for multicast music on hold (MOH) when a media termination point (MTP) is invoked. When an MTP resource gets invoked in a call leg at a site that is using multicast MOH, the caller receives silence instead of music on hold. To avoid this scenario, configure unicast MOH or Tone on Hold instead of multicast MOH

Cisco Unified CallManager Assistant

In Unified CM 5.1(3), the assistant no longer obtains the assistant console application via a URL that the administrator provides; instead, a plug-in from Cisco Unified CallManager Administration gets downloaded and installed on the assistant PC.

The assistant console application installation supports Netscape 7.1 (or later) and Microsoft Internet Explorer 6.0 (or later). You can install the application on a PC that runs Windows 2000, Windows XP, or Windows Vista [new support for 5.1(3)].

A previous 5.x version of the assistant console application works with Cisco Unified CallManager 5.1(3), but if you decide to install the 5.1(3) plug-in, you must uninstall the previous 5.X version of the assistant console application before you install the plug-in.

Previous versions of the assistant console application do not work with Windows Vista. If the PC runs Windows Vista, install the plug-in.

After you upgrade from Cisco Unified CallManager Release 4.x to 5.1(3x), you must install the assistant console plug-in. Before you install the plug-in, uninstall the 4.x version of the assistant console application.

Uninstalling the Assistant Console Application

To uninstall previous versions of the assistant console application, choose **Start> Programs > Cisco Unified CallManager Assistant > Uninstall Assistant Console**.

To uninstall the new plugin-based assistant console application, go to the Control Panel and remove it.

Tip The assistant console application requires that JRE1.4.2_05 exist in C:\Program Files\Cisco\Cisco Unified CallManager Assistant.

To install the assistant console application, perform the following procedure:

Procedure

Step 1 From the PC where you want to install the assistant console application, browse into Cisco Unified CallManager Administration and choose **Application > Plugins**.

Step 2 For the Cisco Unified CallManager Assistant plug-in, click the **Download** link; save the executable to a location that you will remember.

Step 3 Locate the executable and run it.

Tip If you install the application on a Windows Vista PC, a security window may display. Allow the installation to continue.

The installation wizard displays.

Step 4 In the Welcome window, click **Next**.

Step 5 Accept the license agreement and click **Next**.

Step 6 Choose the location where you want the application to install. After you choose the location for the installation, click **Next**.

Tip By default, the application installs in C:\Program Files\Cisco\ Unified CallManager Assistant Console.

Step 7 To install the application, click **Next**.

The installation begins.

Step 8 After the installation completes, click **Finish**.

Tip To launch the assistant console, click the desktop icon or choose **Cisco Unified CallManager Assistant > Assistant Console** in the Start...Programs menu.

Before the assistant logs in to the console, give the assistant the port number and the IP address or hostname of the Unified CM server where the Cisco IP Manager Assistant service is activated. The first time that the assistant logs in to the console, the assistant must enter the information in the Cisco Unified CallManager Assistant Server Port and the Cisco Unified CallManager Assistant Server Hostname or IP Address fields.

Before the assistant logs in to the console, give the assistant the user name and password that is required to log in to the console.

The Advanced tab in the Cisco Unified CallManager Assistant Settings window allows you to enable trace for the assistant console.

Cisco and Third-Party APIs

These following sections describe new features and changes that are pertinent to Release 5.1(3) of the Cisco Unified CM APIs and the Cisco extensions to third-party APIs.

- Windows Vista Support, page 24
- Route Patterns, Automated Alternative Routing, and Applications, page 24
- AXL Programming, page 25
- AXL Serviceability Programming, page 26
- Extension Mobility API, page 27
- Web Dialer, page 27
- Cisco Unified JTAPI Developers Guide, page 28
- Cisco Unified TAPI Developers Guide, page 29
- SCCP Messaging Guide, page 33
- SIP Line Messaging Guide (Standard), page 33
- Cisco Unified CallManager Data Dictionary, page 34

Windows Vista Support

Unified CM Release 5.1(3) adds support for Cisco TAPI and Cisco JTAPI on the Windows Vista platform.

For information about the JVM versions that Cisco JTAPI supports on Windows Vista and other platforms, see Table 3 on page 29.

Route Patterns, Automated Alternative Routing, and Applications

Unified CM only applies Automated Alternative Routing (AAR) to the endpoints that it controls. Network congestion and bandwidth restrictions can cause tail-end hop-off (TEHO) calls to fail if you configure Unified CM to use AAR. To provide failover support for route patterns, you must configure the route lists to take advantage of their built-in redundancy.

Application developers who use the Unified CM TAPI and JTAPI APIs should be aware of this behavior.

AXL Programming

The following table summarizes the AXL schema changes in Release 5.1(3):

Table 2 AXL Schema Changes

Affected APIs	New and Modified Tags	Change
addPhone updatePhone getPhone	callingSearchSpaceName	Changed type from axl:Name128 to axl:String50 in axl.xsd and axlsoap.xsd
addTranslationalPattern updateTranslationalPattern getTranslationalPattern	callingSearchSpaceName	Changed type from xsd:string to axl:String50 in axl.xsd and axlsoap.xsd
addRouteList updateRouteList getRouteList	callingSearchSpaceName	Changed type from xsd:Name to axl:String50 in axl.xsd and axlsoap.xsd
addHuntList updateHuntList getHuntList	callingSearchSpaceName	Changed type from xsd:Name to axl:String50 in axl.xsd and axlsoap.xsd
addPilotPoint updatePilotPoint getPilotPoint	callingSearchSpaceName	Changed type from axl:UniqueName50 to axl:String50 in axl.xsd and axlsoap.xsd
addPhone updatePhone getPhone	authenticationString	Changed type from axl:Name128 to axl:String50 in axl.xsd and axlsoap.xsd
addPhone updatePhone getPhone	upgradeFinishTime	Changed type from xsd:time to xsd:string
getPhone	dirn	Included minOccurs=0 to XNumPlan in axl.xsd, thereby making it optional

The change in the **callingSearchSpaceName** tag to String50 type affects APIs that inherit from Device. The change also affects add, get, and update APIs of CTIRoutePoint, DevicePool, DeviceProfile, DirectedCallPark, GatewayEndPoint, H323Gateway, H323Phone, H323Trunk, HuntPilot, Line, MGCPEndPoint, PilotPoint, RemoteDestinationProfile, SIPTrunk, VoiceMailPilot, and VoiceMailPort.

Change to axl.xsd for the ringSetting Element

The definition of the ringSetting element changes in Release 5.1(3) to make this element optional:

```
<xsd:element name="ringSetting" type="axl:XRingSetting" default="Ring" nillable="false"
minOccurs="0"/>
```

Prior to this release, ringSetting comprised a required element:

```
<xsd:element name="ringSetting" type="axl:XRingSetting" default="Ring" nillable="false"/>
```

Documentation Supplement

WSDL AXL and AXIS

By default, AXIS2 creates all the methods and requests in the same stub file, which might be as large as 35 Mb. AXIS1.4 creates individual files for every method, which yields individual files smaller than 2 Mb.

AXIS2 includes the option "-d xmlbeans" to change the binding option, which creates separate files for all methods as with AXIS1.4. For more information, see this URL:

`http://ws.apache.org/axis2/1_1_1/userguide-creatingclients.html.`

Changes in the Initial Version of Release 5.1

The following sections describe the API changes that were introduced in the initial version of Unified CM Release 5.1.

AXL APIs

The following list provides AXL API calls that are new in Unified CM Release 5.1:

- addSIPRealm
- updateSIPRealm
- getSIPRealm
- removeSIPRealm

These APIs add and update credentials (passwordreserve) in siprealm.

New AXL Service Parameter

Cisco Unified CallManager Administration 5.1 release adds a new service parameter, Send Valid Namespace in AXL Response, under the Cisco Database Layer Monitor service. This parameter determines the namespace that gets sent in the AXL response from Unified CM.

When this parameter specifies True, Unified CM sends the valid namespace (that is, http://www.cisco.com/AXL/API/1.0) in the AXL response, so the namespace matches the AXL schema specification.

If the parameter specifies False, Unified CM sends an invalid namespace (that is, http://www.cisco.com/AXL/1.0) in the AXL response, which does not match the AXL schema specification.

The default service parameter value specifies **False** to maintain backward compatibility with the AXL response in the Cisco Unified CM 5.0 release. Cisco recommends that you set this parameter to **True**, so Unified CM sends the valid namespace.

AXL Serviceability Programming

No changes to the AXL Serviceability APIs exist for Release 5.1(3).

Summary of Changes in Previous Releases

For a summary of changes in previous releases, see the following table:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/devguide/6_0_1/Svc_API_table.html

Documentation Errata

This section corrects some errors in the *Cisco Unified CallManager Developers Guide* for Release 5.0.

An error exists in the example that shows the PerfmonAddCounter request with two counters and a single-reference accessor. The `SessionHandle` element contains an incorrect value for the `type` attribute. The corrected example follows.

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
    <ns1:PerfmonAddCounter
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:ns1="http://schemas.cisco.com/ast/soap/">
      <SessionHandle
xsi:type="ns1:SessionHandleType">b60b683a-24fd-11dc-8000-000000000000</SessionHandle>
      <ArrayOfCounter soapenc:arrayType="ns1:CounterType[2]" xsi:type="soapenc:Array"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">
        <item xsi:type="ns1:CounterType">
          <Name xsi:type="ns1:CounterNameType">\\sampleserver\Process\Nice</Name>
        </item>
        <item xsi:type="ns1:CounterType">
          <Name xsi:type="ns1:CounterNameType">\\sampleserver\Process\PID</Name>
        </item>
      </ArrayOfCounter>
    </ns1:PerfmonAddCounter>
  </soapenv:Body>
</soapenv:Envelope>
```

An error also exists in the section **Real-Time Information (RisPort) > Selecting Cisco Unified CallManager Real-Time Information > Request Format > SOAP Action and Envelope Information**.
The SOAPAction should be

SOAPAction:http://schemas.cisco.com/ast/soap/action/#RisPort#SelectCmDevice

Extension Mobility API

No changes exist in the Extension Mobility API in Release 5.1(3).

Web Dialer

The following change to Web Dialer occurred for Unified CM Release 5.1(3):

- **getProfileSoap**: the list of devices that getProfileSoap returns changed. The list no longer includes unsupported devices.

Documentation Errata

The *Cisco Unified CallManager Release 5.1(1) New and Changed Information Guide* states that the Cisco Unified CallManager Administration directory search page uses the **makeCall** interface. However, beginning with Release 5.0, the directory search page actually uses the **makeCallProxy** interface.

Changes in Release 5.1

The initial 5.1 release of Cisco Unified CallManager included the following change to Cisco Unified CallManager Web Dialer:

- Web Dialer and Redirector now require HTTPS.

Developers should format Redirector and web dialer requests to use HTTPS. Unified CM requires the secured protocol to prevent unauthorized applications from reading user data.

For More Information

- AXL Programming, *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)*
- Web Dialer API Programming, *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)*

Cisco Unified JTAPI Developers Guide

No changes to Cisco Unified JTAPI exists in Release 5.1(3). As stated previously, beginning with this release, Cisco Unified JTAPI supports the Windows Vista platform.

The following sections supplement the *Cisco Unified CallManager JTAPI Developers Guide*.

Hunt List Targets

The Cisco JTAPI implementation does not support hunt lists. Applications cannot observe an Address, CiscoAddress, or CiscoRouteAddress that is a member of a HuntList LineGroup.

Translation Pattern Support

If a calling party transformation mask is configured for a translation pattern that is applied to a JTAPI application-controlled Address, the application may see extra connections that get created and disconnected when both the calling and called party are observed. A Connection gets created for a transformed calling party instead of the actual calling party, and CiscoCall.getCurrentCallingParty() would return the transformed calling party, when only the called party is observed. In general, JTAPI might not be able to create the appropriate Connection in the Call, and might not be able to provide correct information for currentCalling, currentCalled, calling, called, and lastRedirecting parties.

For example, consider a translation pattern X that is configured with a calling party transformation mask Y and called party transformation mask B. If A calls X, the call goes to B. This scenario follows:

- If the application is observing only B, JTAPI creates a Connection for Y and B, and CiscoCall.getCurrentCallingParty() would return Address Y.
- If the application is observing both A and B, a Connection for A and B gets created, a Connection for Y gets temporarily created and dropped, and CiscoCall.getCurrentCallingParty() would return Address Y.

Other inconsistencies could exist in the calling information if further features get performed on a basic call. Cisco recommends that you not configure a calling party transformation mast for a translation pattern that might get applied to JTAPI application-controlled addresses.

Supported JVM Versions

Table 3 lists the supported Java Virtual Machine versions for all the Cisco JTAPI platforms.

Table 3 Supported JVM Versions for Cisco JTAPI

Platform	Release(s)	Unified CM Release 4.x	Unified CM Releases 5.x and 6.0(1)
Linux	AS 3.0	IBM JVM 1.3.1 IBM JVM 1.4.2 Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.5.0.4 Sun JVM 1.4.2
	Red Hat 7.3	IBM JVM 1.3.1 IBM JVM 1.4.2 Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.5.0.4 Sun JVM 1.4
Solaris	6.2 on SPARC	Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.5.0.4 Sun JVM 1.4.2
Windows	9x	Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.4.2
	2000 NT 4.0+ XP (32-bit) 2003	Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.5.0.4 Sun JVM 1.4.2
	Vista (32bit)	Sun JVM 1.3.1 Sun JVM 1.4.2	Sun JVM 1.5.0.4 Sun JVM 1.4.2

Documentation Errata

Be aware of the following issues in the *Cisco Unified CallManager JTAPI Developers Guide*:

- The reasons fields that are listed for CiscoCallEv should instead appear under CiscoFeatureReason.
- The names of several constants, such as FRAMESIZE_TWENTY_MILLISECOND_PACKET for the CiscoG711MediaCapability interface mislead. These constants do not specify a frame rate (frames-per-packet) value. Instead, they specify the packet rate (frame size). The affected interfaces comprise CiscoG711MediaCapability, CiscoG723MediaCapability, and CiscoGSMMediaCapability. This clarification applies to all the FRAMESIZE_XXX_PACKET constants.

Cisco Unified TAPI Developers Guide

No changes occurred to Cisco Unified TAPI in Release 5.1(3). As stated previously, beginning with this release, Cisco Unified TAPI supports the Windows Vista platform.

The following sections supplement the *Cisco Unified CallManager TAPI Developers Guide*.

Hunt List Targets

CTI does not support controlled devices as part of Hunt List members. This could result in erroneous behavior for Cisco Unified TAPI applications.

Translation Pattern

TSP does not support the Translation Pattern because it may cause a dangling call in a conference scenario. The application needs to clear the call to remove this dangling call or simply close and reopen the line.

Documentation Supplement: New and Changed Information Summary

The following tables summarize changes in Release 5.1 and earlier. This information applies to Release 5.1(3) and all respins of Release 5.1. The tables indicate whether a feature was Added (A) or Modified (M) in the indicated release. Modifications and changes that are marked with an asterisk (M*) might impact backward compatibility of TAPI applications.

- TSP Features
- TAPI Line Functions
- TAPI Line Messages
- TAPI Line Structures
- TAPI Phone Functions
- TAPI Phone Messages
- TAPI Phone Structures

Table 4 TSP Features

	Cisco Unified CallManager Releases						
TSP Features	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
CTI Manager and Support for Fault Tolerance	A						
Support for Cisco CallManager Extension Mobility	A						
Support for Multiple CiscoTSP	A						
(Redirect Support for) Blind Transfer				M			
Support for Swap Hold and Setup Transfer with the lineDevSpecific() Function	A						
Support for lineForward()	A						
Support to Reset the Original Called Party upon Redirect with the lineDevSpecific Function	A						
Support to Set the Original Called Party upon Redirect with the lineDevSpecific Function				A			
Support for VG248 Devices	A						
Line In Service or Out of Service	M*						
Support for 7914 Device	A						

Table 4 TSP Features

	Cisco Unified CallManager Releases						
TSP Features	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
Support for Multiple Languages in the CiscoTSP Installation Program and in the CiscoTSP Configuration Dialogs		A					
Support for ATA186 Devices		A					
User Deletion from Directory			M*				
Opening Two Lines on One CTI Port Device			A				
Support for linePark and lineUnpark			A				
Support for Monitoring Call Park Directory Numbers by Using lineOpen			A				
Support for the 7835 Device			A				
Support for the 7905 Device			A				
Support for the 7902 Device			A				
Support for the 7912 Device			A				
Support for the 7970 Device			A				
Support for the 7965 Device			A				
Call Reason Enhancements			M*				
Device Data Passthrough			A				
CiscoTSP Auto Install				A			
Multiple Calls per Line Appearance				A			
Shared Line Appearance				A			
Select Calls				A			
Transfer Changes				M*			
Direct Transfer				A			
Conference Changes				M			
Join				A			
Privacy Release				A			
Barge and cBarge				A			
Dynamic Port Registration				A			
Media Termination at Route Points				A			
QoS Support				A			M
Support for Presentation Indication				A			
Unicode Support						A	
SRTP Support							A
Partition Support							A
SuperProvider Functionality							A
Security (TLS) Support							A

Table 4 TSP Features

	Cisco Unified CallManager Releases						
TSP Features	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
FAC/CMC Support					A		
CTI Port Third-Party Monitoring					A		
Alternate Script Support							A
SIP Features Refer/Replaces							A
SIP URI							A
Change Notification of SuperProvider and CallParkDN Monitoring Flags							A
3XX							A

Table 5 TAPI Line Functions

	Cisco Unified CallManager Releases						
TAPI Line Functions	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
lineAddToConference				M			
lineCompleteTransfer				M			
lineDevSpecific	M			M*	M		M
lineForward	A						
linePark			A				
lineUnpark			A				
lineRedirect					M		
lineBlindTransfer					M		

Table 6 TAPI Line Messages

	Cisco Unified CallManager Releases						
TAPI Line Messages	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
LINE_ADDRESSSTATE	M						
LINE_CALLINFO	M*					M	M
LINE_CALLSTATE				M	M		
LINE_REMOVE	A						
LINE_DEVSPECIFIC					M		M
LINE_CALLDEVSPECIFIC					M		

Table 7 TAPI Line Structures

	Cisco Unified CallManager Releases						
TAPI Line Structures	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
LINEADDRESSCAPS	M			M	M		
LINECALLSTATUS				M	M		
LINEFORWARD	A						
LINEFORWARDLIST	A						
LINEDEVCAPS			M			M	M
LINEDEVSTATUS						M	

Table 8 TAPI Phone Functions

	Cisco Unified CallManager						
TAPI Phone Functions	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**	**5.1**
phoneDevSpecific			A				
PhoneGetStatus			A				
PhoneReqRTPSnapshot							A

Table 9 TAPI Phone Messages

	Cisco Unified CallManager					
TAPI Phone Messages	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**
PHONE_REMOVE	A					

Table 10 TAPI Phone Structures

	Cisco Unified CallManagerCisco Unified CallManager					
TAPI Phone Structures	**3.1**	**3.2**	**3.3**	**4.0**	**4.1**	**5.0**
PHONECAPS						M
PHONESTATUS			A			M

SCCP Messaging Guide

No changes to SCCP messages occurred in Release 5.1(3)

SIP Line Messaging Guide (Standard)

No changes to SIP line messages occurred in Release 5.1(3).

Cisco Unified CallManager Data Dictionary

Cisco did not update this document for release 5.1(3). For information about AXL schema changes in this release, see AXL Programming, page 25.

Cisco Unified Reporting

The Cisco Unified Reporting Administration Guide, a new document, describes how to use the new Cisco Unified Reporting web application. Refer to New Cisco Unified Reporting Application in the "Important Notes"section on page 5 for a brief description of the application.

Cisco Unified IP Phones

Unified CM 5.1(3) adds support the following phones:

- Cisco Unified Wireless IP Phone 7921, page 34
- Cisco Unified IP Phone 7962G and 7942G (SCCP and SIP), page 35
- Cisco Unified IP Phone 7965G and 7945G (SCCP and SIP), page 35
- Cisco Unified IP Phone 7975G (SCCP and SIP), page 35

Note For additional information on Cisco Unified IP Phones 7900 Series, go to http://www.cisco.com/en/US/products/hw/phones/ps379/tsd_products_support_series_home.html

Cisco Unified Wireless IP Phone 7921

The Cisco Unified Wireless IP Phone 7921 as a second-generation wireless IP phone extends advanced voice and unified communications capabilities across the enterprise, supporting a host of enhanced calling features, including the following ones:

- IEEE 802.11a, b, and g standards that allow using the phone in the 2.4 GHz or 5 GHz bands
- A large (2-inch) color display
- Dedicated mute and volume keys and a separate Application button that supports Push-to-Talk using Extensible Markup Language (XML)
- Battery with 100 hours standby time or 12 hours talk time
- Wireless security features and voice security features

Where to Find More Information

- *Cisco Unified Wireless IP Phone 7921G Installation Guide*
- *Cisco Unified Wireless IP Phone Guide 7921G for Cisco Unified CallManager 4.1, 4.2, and 5.0 (SCCP)*
- *Cisco Unified Wireless IP Phone 7921G Administration Guide for Cisco Unified CallManager 4.1, 4.2, and 5.0 (SCCP)*
- *Cisco Unified Wireless IP Phone 7921G Accessory Guide*
- *Cisco Unified Wireless IP Phone 7921G Deployment Guide*

Cisco Unified IP Phone 7962G and 7942G (SCCP and SIP)

The system supports Cisco Unified IP Phones 7962G and 7942G for Unified CM Release 5.1(3) and later. The Cisco Unified IP Phones 7962G and 7942G design meets the needs of businesses with moderate telephone traffic and specific call requirements. The Cisco Unified IP Phones 7962G and 7942G support IEEE 802.3af Power over Ethernet, security, and other calling features. Dedicated hold, redial, and transfer keys facilitate call handling. Illuminated mute and speakerphone keys give a clear indication of speaker status.

Where to Find More Information

- *Cisco Unified IP Phone 7962G Installation Guide*
- *Cisco Unified IP Phone 7942G Installation Guide*
- *Cisco Unified IP Phone 7962G and 7942G Phone Guide*
- *Cisco Unified IP Phone 7962G and 7942G Administration Guide*

Cisco Unified IP Phone 7965G and 7945G (SCCP and SIP)

The system supports Cisco Unified IP Phones 7965G and 7945G on Unified CM Release 5.1(3) and later. The Cisco Unified IP Phones 7965G and 7945G design meets the needs of businesses with moderate telephone traffic and specific call requirements. The Cisco Unified IP Phones 7965G and 7945G support IEEE 802.3af Power over Ethernet, security, and other calling features. Dedicated hold, redial, and transfer keys facilitate call handling. Illuminated mute and speakerphone keys give a clear indication of speaker status.

Where to Find More Information

- *Cisco Unified IP Phone 7965G Installation Guide*
- *Cisco Unified IP Phone 7945G Installation Guide*
- *Cisco Unified IP Phone 7965G and 7945G Phone Guide*
- *Cisco Unified IP Phone 7965G and 7945G Administration Guide*

Cisco Unified IP Phone 7975G (SCCP and SIP)

The system supports Cisco Unified IP Phone 7975G on Unified CM Release 5.1(3) and later. The Cisco Unified IP Phone 7975G design meets the needs of businesses with moderate telephone traffic and specific call requirements. The Cisco Unified IP Phones 7975G supports IEEE 802.3af Power over Ethernet, security, and other calling features. Dedicated hold, redial, and transfer keys facilitate call handling. Illuminated mute and speakerphone keys give a clear indication of speaker status.

Where to Find More Information

- *Cisco Unified IP Phone 7975G Installation Guide*
- *Cisco Unified IP Phone 7975G Phone Guide*
- *Cisco Unified IP Phone 7975G Administration Guide*

Operating System CLI Commands

This section describes Cisco Unified Communications Operating System CLI commands that are added or updated in Unified CM Release 5.1(3x).

file fragmentation sdi

This command displays file fragmentation information about SDI log files.

Command Syntax

file fragmentation sdi

all *outfilename*

file *filename* {**verbose**}

most fragmented *number*

most recent *number*

Parameters

- **all** records information about all files in the directory in the file that is specified by *outfilename*.
- **file** displays information about the file that is specified by *filename*.
- **most fragmented** displays information about the most fragmented files.
- **most recent** displays information about the most recently logged fragmented file.
- *number* specifies the number of files to list.

Options

- **verbose**—Displays more detailed information

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

file fragmentation sdl

This command displays file fragmentation information about SDL log files.

Command Syntax

file fragmentation sdl

all *outfilename*

file *filename* {**verbose**}

most fragmented *number*

most recent *number*

Parameters

- **all** records information about all files in the directory in the file that is specified by *outfilename*.
- **file** displays information about the file that is specified by *filename*.

- **most fragmented** displays information about the most fragmented files.
- **most recent** displays information about the most recently logged fragmented file.
- *number* specifies the number of files to list.

Options

- **verbose**—Displays more detailed information

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

file get

The **file get** command has the new parameters **salog** and **partBsalog**. The **file get** command sends the file to another system by using SFTP.

Command Syntax

file get

salog *directory/filename* [**reltime**] [**abstime**] [**match**] [**recurs**]

partBsalog *directory/filename* [**reltime**] [**abstime**] [**match**] [**recurs**]

Parameters

- **salog** specifies the salog log directory.
- **partBsalog** specifies the partBsalog log directory.
- *directory/filename* specifies the path to the file(s) to get. You can use the wildcard character, *, for *filename* as long as it resolves to one file.

Options

- **abstime**—Absolute time period, specified as *hh:mm:MM/DD/YY hh:mm:MM/DD/YY*
- **reltime**—Relative time period, specified as **minutes | hours | days | weeks | months** *value*
- **match**—Match a particular string in the filename, specified as *string value*
- **recurs**—Get all files, including subdirectories

Usage Guidelines

After the command identifies the specified files, you get prompted to enter an SFTP host, username, and password.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

file list

The **file list** command has the new parameters **salog** and **partBsalog**. The **file list** command lists the log files in an available log directory.

Command Syntax

file list

salog *directory* [**page**] [**detail**] [**reverse**] [**date** | **size**]

partBsalog *directory* [**page**] [**detail**] [**reverse**] [**date** | **size**]

Parameters

- **salog** specifies the salog log directory.
- **partBsalog** specifies the partBsalog log directory.
- *directory* specifies the path to the directory to list. You can use a wildcard character, *, for *directory* as long as it resolves to one directory.

Options

- **detail**—Long listing with date and time
- **date**—Sort by date
- **size**—Sort by file size
- **reverse**—Reverse sort direction
- **page**—Displays the output one screen at a time

Requirements

Command privilege level: 1 for logs, 0 for TFTP files

Allowed during upgrade: Yes

file view

The **file view** command has a new **system-management-log** parameter. The **file view** command displays the contents of a file.

Command Syntax

file view

system-management-log

Parameters

- **system-management-log** displays the contents of the Integrated Management Logs (IML).

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

set network dhcp

The set network dhcp command gets updated as described in this section. This command configures DHCP on Ethernet interface 0. You cannot configure Ethernet interface 1.

Command Syntax

set network dhcp eth0

enable

disable *node_ip net_mask gateway_ip*

Parameters

- **eth0** specifies Ethernet interface 0.
- **enable** enables DHCP.
- **disable** disables DHCP.
- *node_ip* specifies the new static IP address for the server.
- *net_mask* specifies the subnet mask for the server.
- *gateway_ip* specifies the IP address of the default gateway.

Usage Guidelines

The system asks whether you want to continue to execute this command.

Caution If you continue, this command causes the system to restart. Cisco also recommends that you restart all nodes whenever any IP address gets changed.

Requirements

Command privilege level: 1

Allowed during upgrade: No

set network restore

This command configures the specified Ethernet port to use a specified static IP address.

Caution Use this command option only if you cannot restore network connectivity by using any other **set network** commands. This command deletes all previous network settings for the specified network interface, including Network Fault Tolerance. After running this command, you must restore your previous network configuration manually.

Caution The server temporarily loses network connectivity when you run this command.

Command Syntax

set network restore eth0 *ip-address network-mask gateway*

Parameters

- **eth0** specifies Ethernet interface 0.
- *ip-address* specifies the IP address.
- *network-mask* specifies the subnet mask.
- *gateway* specifies the IP address of the default gateway.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

show ctl

This command displays the contents of the Certificate Trust List (CTL) file on the server. It notifies you if the CTL is not valid.

Command Syntax

show ctl

show diskusage

This command displays information about disk usage on the server.

Command Syntax

show diskusage

activelog {**filename** *filename* | **directory** | **sort**}

common {**filename** *filename* | **directory** | **sort**}

inactivelog {**filename** *filename* | **directory** | **sort**}

install {**filename** *filename* | **directory** | **sort**}

tftp {**filename** *filename* | **directory** | **sort**}

tmp {**filename** *filename* | **directory** | **sort**}

Parameters

- **activelog** displays disk usage information about the activelog directory.
- **common** displays disk usage information about the common directory.
- **inactivelog** displays disk usage information about the inactivelog directory.
- **install** displays disk usage information about the install directory.
- **tftp** displays disk usage information about the tftp directory.
- **tmp** displays disk usage information about the tmp directory.

Options

- **filename** *filename*—Saves the output to a file that is specified by *filename*. The **platform/cli** directory stores these files. To view saved files, use the **file view activelog** command.
- **directory**—Displays just the directory sizes.
- **sort**—Sorts the output based on file size. File sizes display in 1024-byte blocks.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

show environment

This command displays information about the server hardware.

Command Syntax

show environment

fans

power-supply

temperatures

Parameters

- **fans** displays information that fan probes gather.
- **power-supply** displays information that power supply probes gather.
- **temperatures** displays information that temperature probes gather.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

show iptables

Although the **show iptables** command was removed, the **utils firewall list** command now displays similar information.

show memory

This command displays information about the server memory.

Command Syntax

show memory

count

module [**ALL** | *module_number*]

size

Parameters

- **count** displays the number of memory modules on the system.
- **module** displays detailed information about each memory module.
- **size** displays the total amount of memory.

Options

- **ALL**—Displays information about all installed memory modules.
- *module_number*—Specifies which memory module to display. Memory module numbers start at 0.

show network cluster

This command has a new **cluster** parameter.

Command Syntax

show network

cluster

Parameters

- **cluster** displays a list of the nodes in the network cluster.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

show tech database

This command has the new parameters **dump** and **session**.

Command Syntax

show tech database

dump

sessions

Parameters

- **dump** creates a CSV file of the entire database.
- **sessions** redirects the session and SQL information of the present session IDs to a file.

show tech network

This section describes the show tech network command updates. This command displays information about the network aspects of the server.

Command Syntax

show tech network

all [**page**] [**search** *text*] [**file** *filename*]

hosts [**page**] [**search** *text*] [**file** *filename*]

interfaces [**page**] [**search** *text*] [**file** *filename*]

resolv [**page**] [**search** *text*] [**file** *filename*]

routes [**page**] [**search** *text*] [**file** *filename*]

sockets {**numeric**}

Parameters

- **all** displays all network tech information.
- **hosts** displays information about hosts configuration.

- **interfaces** displays information about the network interfaces.
- **resolv** displays information about hostname resolution.
- **routes** displays information about network routes.
- **sockets** displays the list of open sockets.

Options

- **page**—Displays one page at a time
- **search** *text*—Searches the output for the string that is specified by *text*. Be aware that the search is case insensitive.
- **file** *filename*—Outputs the information to a file.
- **numeric**—Displays the numerical addresses of the ports instead of determining symbolic hosts. It equates to running the Linux shell command netstat [-n] command.

Usage Guidelines

The **file** option saves the information to platform/cli/*filename*.txt. The file name cannot contain the "." character.

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

show tech runtime

This section describes the show tech runtime command updates. This command displays runtime aspects of the server.

Command Syntax

show tech runtime

all [**page**] [**file** *filename*]

cpu [**page**] [**file** *filename*]

disk [**page**] [**file** *filename*]

env [**page**] [**file** *filename*]

memory [**page**] [**file** *filename*]

Parameters

- **all** displays all runtime information.
- **cpu** displays CPU usage information at the time that the command is run.
- **disk** displays system disk usage information.
- **env** displays environment variables.
- **memory** displays memory usage information.

Options

- **page**—Displays one page at a time
- **file** *filename*—Outputs the information to a file

Usage Guidelines

The **file** option saves the information to platform/cli/*filename*.txt. The file name cannot contain the "." character.

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

show tech system

This section describes the show tech system command updates. This command displays system aspects of the server.

Command Syntax

show tech system

all [**page**] [**file** *filename*]

bus [**page**] [**file** *filename*]

hardware [**page**] [**file** *filename*]

host [**page**] [**file** *filename*]

kerenl [**page**] [**file** *filename*]

software [**page**] [**file** *filename*]

tools [**page**] [**file** *filename*]

Parameters

- **all** displays all the system information.
- **bus** displays information about the data buses on the server.
- **hardware** displays information about the server hardware.
- **host** displays information about the server.
- **kerenl modules** lists the installed kernel modules.
- **software** displays information about the installed software versions.
- **tools** displays information about the software tools on the server.

Options

- **page**—Displays one page at a time
- **file** *filename*—Outputs the information to a file

Usage Guidelines

The **file** option saves the information to platform/cli/*filename*.txt. The file name cannot contain the "." character.

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

utils create report

This command creates reports about the server in the platform/log directory.

Command Syntax

utils create report

hardware

platform

Parameters

- **hardware** creates a system report that contains disk array, remote console, diagnostic, and environmental data.
- **platform** collects the platform configuration files into a TAR file.

Usage Guidelines

You are prompted to continue after you enter the command.

After creating a report, use the command **file get activelog platform/log/***filename*, where *filename* specifies the report filename that displays after the command completes, to get the report.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

utils dbreplication clusterreset

This command resets database replication on an entire cluster.

Command Syntax

utils dbreplication clusterreset

Usage Guidelines

Before you run this command, run the command **utils dbreplication stop** first on all subscribers servers, and then on the publisher server.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

utils fior

This command allows you to monitor the I/O on the server. The File I/O Reporting service provides a kernel-based daemon for collecting file I/O per process.

Command Syntax

utils fior

disable

enable

list [**start=***date-time*] [**stop=***date-time*]

start

status

stop

top *number* [**read** | **write** | **read-rate** | **write-rate**] [**start=***date-time*] [**stop=***date-time*]

Options

- **disable**—Prevents the file I/O reporting service from starting automatically when the machine boots. This command does not stop the service without a reboot. Use the **stop** option to stop the service immediately.
- **enable**—Enables the file I/O reporting service to start automatically when the machine boots. This command does not start the service without a reboot. Use the **start** option to start the service immediately.
- **list**—Displays a list of file I/O events, in chronological order, from oldest to newest
- **start**—Starts a previously stopped file I/O reporting service. The service remains in a started state until it is manually stopped or the machine is rebooted.
- **status**—Displays the status of the file I/O reporting service
- **stop**—Stops the file I/O reporting service. The service remains in a stopped state until it is manually started or the machine is rebooted.
- **top**—Displays a list of top processes that create file I/O. You can sort this list by the total number of bytes read, the total number of bytes written, the rate of bytes read, or the rate of bytes written
- **start=**—Specifies a starting date and time
- **stop=**—Specifies a stopping date and time
- *date-time*—Specifies a date and time, in any of the following formats: *H***:***M*, *H***:***M***:***S a*, *H***:***M*, *a*, *H***:***M***:***S Y***-***m***-***d*, *H***:***M*, *Y***-***m***-***d*, *H***:***M***:***S*
- *number*—Specifies how many of the top processes to list
- **[read | write | read-rate | write-rate]**—Specifies the metric that is used to sort the list of top process

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

utils firewall

This command manages the firewall on the node.

Command Syntax

utils firewall

disable {*time*}

enable

list

status

Parameters

- **disable** disables the firewall.
- *time* specifies the duration for which the firewall is disabled, in one of these formats:
  - [0-1440]**m** to specify a duration in minutes.
  - [0-24]**h** to specify a duration in hours.
  - [0-23]**h**[0-60]**m** to specify a duration in hours and minutes.

  If you do not specify a time, the default equals 5 minutes.

f you

- **enable** enables the firewall.
- **list** displays the current firewall configuration.
- **status** displays the status of the firewall.

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

utils network connectivity

This command verifies the node network connection to the first node in the cluster. Be aware that it is only valid on a subsequent node.

Command Syntax

utils network connectivity

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

utils service

The utils service command has a new **auto-restart** parameter. You can enable auto-restart on a service to cause it to automatically restart.

Command Syntax

utils service

auto-restart {**enable** | **disable** | **show**} *service-name*

Parameters

- **auto-restart** causes a service to automatically restart.

Options

- **enable**- Enables auto-restart
- **disable -** Disables auto-restart
- **show -** Shows the auto-restart status
- *service-name* - Represents the name of the service that you want to stop or start

Requirements

Command privilege level: 0

Allowed during upgrade: Yes

utils snmp

The **utils snmp** command has the new parameters **get**, **hardware-agents**, and **walk**.

Command Syntax

utils snmp

get *version community ip-address object* [*file*]

hardware-agents [**status** | **restart**]

walk *version community ip-address object* [*file*]

Parameters

- **get** displays the value of the specified SNMP object.
- **hardware-agents status** displays the status of the hardware agents on the server.
- **hardware-agents restart** restarts the hardware agents on the server.
- **walk** walks the SNMP MIB, starting with the specified SNMP object.
- *version* specifies the SNMP version. Possible values include 1 or 2c.
- *community* specifies the SNMP community string.
- *ip-address* specifies the IP address of the server. Enter 127.0.0.0 to specify the local host. You can enter the IP address of another node in the cluster to run the command on that node.
- *object* specifies the SNMP Object ID (OID) to get.
- *file* specifies a file in which to save the command output.

Requirements

Command privilege level: 1

Allowed during upgrade: Yes

Cisco Unified CallManager Serviceability

This section contains the following subsections:

- Supported Operating Systems, page 51

Adding RTMT Performance Counters in Bulk

On the RTMT Perfmon Monitoring pane, in table format only (not in chart format), you can now select multiple counters and multiple instances of counters and add them all with a single click. Prior to this enhancement, you could add them only one at a time.

For more information, see Documentation Updates, page 53.

RTMT Database Summary with Database Replication Information

The RTMT database summary predefined monitoring object now includes the following information:

- Replicates created
- Replication status

Start Counter(s) Logging in the Menu Bar

Prior to this release, the RTMT Performance Monitoring window included a Start Counter(s) Logging menu item for each tab, but not at the RTMT top menu bar level. Now, this menu item consistently remains available.

RTMT Trace and Log Central Disk IO and CPU Throttling

RTMT now supports the throttling of critical Trace and Log Central operations and jobs, whether they are running on demand, scheduled, or automatic. The throttling effect slows down the operations when IO utilization is in high demand for call processing, so call processing can take precedence.

For more information, see Documentation Updates, page 53.

Trace Compression Support

This feature enables the ROS (Recoverable Outstream) library to support the compressed output of tracefiles. The files get compressed as they are being generated. The following benefits of tracefile compression apply:

- Reduces the capacity that is required to store tracefiles
- Reduces the disk head movement, which results in significantly improved call load. The CPU virtually never gets blocked due to tracefile demands.

For more information, see Documentation Updates, page 53.

RTMT Critical Services

Cisco Unified CallManager Real-Time Monitoring Tool (RTMT) provides new states for the critical services that display in RTMT. The Critical Services monitoring category (choose **Monitor > Server > Critical Services** or click the **Server** button and **Critical Services** icon) provides the name of the critical service, the status (whether the service is starting, up, stopping, down, stopped by the administrator, not activated, or in an unknown state), and the elapsed time during which the services have existed in a particular state for a particular Unified CM node. For a specific description of each state, review the following information:

- starting (new state)—The service currently experiences starting, as indicated in the Critical Services pane and in Control Center in Cisco Unified CallManager Serviceability.
- up—The service currently runs as indicated in the Critical Services pane and in Control Center in Cisco Unified CallManager Serviceability.
- stopping (new state)—The service currently remains in stop state, as indicated in the Critical Services pane and in Control Center in Cisco Unified CallManager Serviceability.
- down—The service stopped running unexpectedly; that is, you did not perform a task that stopped the service. The Critical Services pane indicates that the service is down.

Tip The CriticalServiceDown alert gets generated when the service status equals down (not for other states).

- stopped by Admin (new state)—You performed a task that intentionally stopped the service; for example, the service stopped because you backed up or restored Cisco Unified CallManager, performed an upgrade, stopped the service in Cisco Unified CallManager Serviceability or the Command Line Interface (CLI), and so on. The Critical Services pane indicates the status.
- not activated—The service does not currently exist in activated state as indicated in the Critical Services pane and in Service Activation in Cisco Unified CallManager Serviceability.
- unknown state—The system cannot determine the state of the service, as indicated in the Critical Services pane.

Preconfigured Alerts

The Preconfigured Alerts chapter of the *Cisco Unified CallManager Serviceability Guide* contains the following new preconfigured alerts:

- ServerDown: This alert gets triggered whenever the active AMC cannot talk to a remote host.
- HardwareFailure: This alert gets triggered whenever a corresponding HardwareFailure alarm/event occurs.
- SDLLinkOutOfService: This alert gets triggered whenever a corresponding "SDLLinkOOS alarm/event occurs.
- SyslogStringMatchFound
- SyslogSeverityMatchFound
- DBReplicationFailure: This alert gets triggered whenever the corresponding perfmon counter "replication status" has values other than 0 (init) and 2 (success).
- SystemVersionMismatched: This alert gets triggered whenever a mismatch exists in system version.

RTMT Services, Servlets and Service Parameters

The list of RTMT Services, Servlets, and Service Parameters now includes RisDC.

Supported Operating Systems

The list of supported operating systems now includes Windows Vista.

For More Information

- *Cisco Unified CallManager Serviceability System Guide*
- *Cisco Unified CallManager Serviceability Administration Guide*

Caveats

The following sections contain information on how to obtain the latest resolved caveat information and descriptions of open caveats of severity levels 1, 2, and 3.

Caveats describe unexpected behavior on a Cisco Unified CallManager server. Severity 1 caveats represent the most serious caveats, severity 2 caveats represent less serious caveats, and severity 3 caveats represent moderate caveats.

Resolved Caveats

You can find the latest resolved caveat information for Cisco Unified CallManager Release 5.1(3x) by using Bug Toolkit, which is an online tool that is available for customers to query defects according to their own needs.

Tip You need an account with Cisco.com (Cisco Connection Online) to use the Bug Toolkit to find open and resolved caveats of any severity for any release.

To access the Bug Toolkit, log on to http://tools.cisco.com/Support/BugToolKit.

UsingBug Toolkit

The system grades known problems (bugs) according to severity level. These release notes contain descriptions of the following bug levels:

- All severity level 1 or 2 bugs.
- Significant severity level 3 bugs.

You can search for problems by using the Cisco Software Bug Toolkit.

To access Bug Toolkit, you need the following items:

- Internet connection
- Web browser
- Cisco.com user ID and password

To use the Software Bug Toolkit, follow these steps:

Procedure

Step 1 Acccess the Bug Toolkit, http://tools.cisco.com/Support/BugToolKit.

Step 2 Log in with your Cisco.com user ID and password.

Step 3 If you are looking for information about a specific problem, enter the bug ID number in the "Search for Bug ID" field, and click **Go**.

Tip Click **Help** on the Bug Toolkit page for information about how to search for bugs, create saved searches, create bug groups, and so on.

Open Caveats

Tip For more information about an individual defect, click the associated Identifier in the "Open Caveats as of January 19, 2009"section on page 53 to access the online record for that defect, including workarounds.

Understanding the Fixed-in Version and the Integrated-in Fields in the Online Defect Record

When you open the online record for a defect, you may see data in the "First Fixed-in Version" or "Integrated-in" fields. The information that displays in these fields identifies the list of Cisco Unified CallManager interim versions in which the defect was fixed. These interim versions then get integrated into Cisco Unified CallManager releases.

Some more clearly defined versions include identification for Engineering Specials (ES) or Service Releases (SR); for example 03.3(04)ES29 and 04.0(02a)SR1; however, the version information that displays for the Cisco Unified CallManager maintenance releases may not be as clearly identified.

The following examples show how you can decode the maintenance release interim version information. These examples show you the format of the interim version along with the corresponding Cisco Unified CallManager release that includes that interim version. You can use these examples as guidance to better understand the presentation of information in these fields.

- 003.003(003.144) = Cisco CallManager Release 3.3(4)
- 005.000(000.123) = Cisco Unified CallManager Release 5.0(1)
- 005.000(001.008) = Cisco Unified CallManager Release 5.0(2)
- 005.001(002.201) = Cisco Unified CallManager Release 5.1(3)

Note Because defect status continually changes, be aware that the "Open Caveats as of January 19, 2009"section on page 53 reflects a snapshot of the defects that were open at the time this report was compiled. For an updated view of open defects, access Bug Toolkit and follow the instructions as described in the "UsingBug Toolkit"section on page 51.

Tip Bug Toolkit requires that you have an account with Cisco.com (Cisco Connection Online). By using the Bug Toolkit, you can find caveats of any severity for any release. Bug Toolkit may also provide a more current listing than this document provides. To access the Bug Toolkit, log on to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Open Caveats as of January 19, 2009

The following list contains information about unexpected behaviors that might occur in Unified CM 5.1(3e)

- CSCsw97711
  Component: axl
  Invalid service parameter name was allowed during build/install
- CSCsw78153
  Component: cp-callcontrol
  Race condition between CFNA and pickup causes the CI=0 call.
- CSCsw47154
  Component: cp-sccp
  MLPP gets preempted unexpectedly on shared lines.
- CSCsw53315
  Component: cp-supplementaryservices
  IP phone keeps ringing when pickup and CFNA occur at the same time.
- CSCsh36576
  Component: cp-system
  Signaling DSCP from Unified CM is incorrect for CS5, CS6, CS7,
- CSCsj40566
  Component: database
  Unified CM 5.x ASCII character support differs from 4.x.
- CSCsw33786
  Component: jtapisdk
  Duplicate CallCtlEstablishedEv for pickup party for inter group picku
- CSCsw71842
  Component: jtapisdk
  JTAPI ConnAlertingEv is notifying the number of phones in shared line
- CSCsk99079
  Component: sdl
  Trace recovery tool and Unified CM processes core.
- CSCsg23990
  Component: tapisdk
  TSP svchost exhibits pegging 99% CPU during TLS connection.

Documentation Updates

This section provides documentation changes that were unavailable when the Unified CM Release 5.1(3) documentation suite was released.

Omissions

This section contains information on the following topics:

Servers in a Cluster Must Run the Same Cisco Unified CM.

The *Cisco Unified Communications Operating System Administration Guide* does not indicate that all servers in a cluster must run the same release of Cisco Unified Communications Manager. The only exception is during a cluster software upgrade, during which a temporary mismatch is allowed. When switching the active partition to another version of Cisco Unified Communications Manager during an upgrade to a later release or a reversion to a previous release, you must switch the first node (publisher server) before you switch the subsequent nodes (subscriber servers). Switching the subsequent nodes to a different release before switching the first node causes database status issues, as can be seen when running the **utils dbreplication status** CLI command.

Considerations for LDAP Port Configuration

Tip The following information does not display in the LDAP chapters in the *Cisco Unified Communications Manager Administration Guide* and *Cisco Unified Communications Manager System Guide*.

When you configure the LDAP Port field in the LDAP Authentication window in Cisco Unified Communications Manager Administration, you specify the port number that the corporate directory uses to receive LDAP requests. How your corporate directory is configured determines which port number to enter in this field. For example, before you configure the LDAP Port field, determine whether your LDAP server acts as a Global Catalog server and whether your configuration requires LDAP over SSL. Consider entering one of the following port numbers:

Tip Your configuration may require that you enter a different port number than the numbers that are listed in the following bullets. Before you configure the LDAP Port field, contact the administrator of your directory server to determine the correct port number to enter.

LDAP Port For When the LDAP Server Is Not a Global Catalog Server

- 389—When SSL is not required. (This port number is the default that displays in the LDAP Port field.)
- 636—When SSL is required. (If you enter this port number, make sure that you check the Use SSL check box.)

LDAP Port For When the LDAP Server Is a Global Catalog Server

- 3268—When SSL is not required.
- 3269—When SSL is required. (If you enter this port number, make sure that you check the Use SSL check box.)

Netdump Utility

The netdump utility allows you to send data and memory crash dump logs from one server on the network to another. Servers configured as netdump clients send the crash logs to the server configured as the netdump server. The log file gets sent to the crash directory of the netdump server.

In a Cisco Unified Communications Manager cluster, you must configure at least two nodes as netdump servers so that the first node and subsequent nodes can send crash dump longs to each other.

For example, if your cluster contains three servers (one primary/first node and two subsequent nodes), you can configure the first node and subsequent node #1 as the netdump servers. Then, you can configure the first node as a netdump client of the subsequent node #1 and configure all of the subsequent nodes as netdump clients of the first node. If the first node crashes, it sends the netdump to subsequent node #1. If any of the subsequent nodes crash, they send the netdump to the first node.

You can use an external netdump server rather than configuring a Cisco Unified Communications Manager server as a netdump server. For information on configuring an external netdump server, contact TAC.

Note Cisco recommends that you configure the netdump utility after you install Cisco Unified Communications Manager to assist in troubleshooting. If you have not already done so, configure the netdump utility before you upgrade Cisco Unified Communications Manager from supported appliance releases.

To configure the netdump servers and clients, use the command line interface (CLI) that is available for the Cisco Unified Communications Operating System as described in the following sections:

- Configuring a Netdump Server, page 56
- Configuring a Netdump Client, page 56
- Working with Files Collected by the Netdump Server, page 57
- Monitoring Netdump Status, page 57

Configuring a Netdump Server

To configure a node as a netdump server, use the following procedure:

Procedure

Step 1 On the node that you want to configure as the netdump server, start a CLI session as described in the *Cisco Unified Communications Operating System Administration Guide*.

Step 2 Execute the **utils netdump server start** command.

Step 3 To view the status of the netdump server, execute the **utils netdump server status** command.

Step 4 Configure the netdump clients, as described in the "Configuring a Netdump Client"section on page 56.

Configuring a Netdump Client

To configure a node as a netdump client, use the following procedure:

Procedure

Step 1 On the node that you want to configure as the netdump client, start a CLI session as described in the *Cisco Unified Communications Operating System Administration Guide*.

Step 2 Execute the **utils netdump client start** *ip-address-of-netdump-server* command.

Step 3 Execute the **utils netdump server add-client** *ip-address-of-netdump-client*. Repeat this command for each node that you want to configure as a netdump client.

Note Make sure that you enter the correct IP addresses. The CLI does not validate the IP addresses.

Step 4 To view the status of the netdump client, execute the **utils netdump client status**.

Working with Files Collected by the Netdump Server

To view the crash information from the netdump server, use the Real-Time Monitoring Tool or the command line interface (CLI). To collect the netdump logs by using the Real-Time Monitoring Tool, choose the Collect Files option from Trace & Log Central. From the Select System Services/Applications tab, choose the Netdump logs check box. For more information on collecting files using Real-Time Monitoring Tool, see the *Cisco Unified Communications Manager Real-Time Monitoring Tool Administration Guide*.

To use the CLI to collect the netdump logs, use the "file" CLI commands on the files in the crash directory. The log filenames begin with the IP address of the netdump client and end with the date that the file gets created. For information on the file commands, refer to the *Cisco Unified Communications Operating System Administration Guide*.

Monitoring Netdump Status

You can monitor the netdump status by configuring SyslogSearchStringFound alerts in Real-Time Monitoring Tool. Use the following procedure to configure the appropriate alerts:

Procedure

Step 1 From the quick launch channel in Real-Time Monitoring Tool, choose **Tools > Alert Central**.

Step 2 Right-click the SyslogStringMatchFound alert and choose **Set Alert/Properties**.

Step 3 Click **Next** three times.

Step 4 On the SysLog Alert window, click the **Add** button. When the Add Search String dialog box displays, type **netdump: failed** and click **Add**. Then, click **Next**.

Note Make sure that the case and syntax matches exactly.

Step 5 On the Email Notification window, choose the appropriate trigger alert action, enter any user-defined email text, and click **Save**.

Trunk Chapter Does Not State That Host Name is Valid Configuration for Destination Address Setting

The "Trunk Configuration" chapter in the *Cisco Unified CallManager Administration Guide* does not state that you can enter a host name in the Destination Address field when you configure a SIP trunk. Disregard the description for the Destination Address field in the chapter/online help, and use the following description when you configure the Destination Address field in the SIP Trunk Configuration window in Cisco Unified CallManager Administration (Device > Trunk):

Destination Address—The Destination Address represents the remote SIP peer with which this trunk communicates. The allowed values for this field specify a valid V4 dotted IP address, a host name that can resolve to an IP address, a fully qualified domain name (FQDN), or a DNS SRV record only if the Destination Address is an SRV field is checked.

Tip To ensure that you entered the configuration correctly (for example, the IP address or host name), place calls over the trunk after you configure it.

SIP trunks only accept incoming requests from the configured Destination Address and the specified incoming port that is specified in the SIP Trunk Security Profile that is associated with this trunk.

If the remote end is a Cisco Unified CallManager cluster, DNS SRV represents the recommended choice for this field. The DNS SRV record should include all Cisco Unified CallManagers within the cluster.

Cisco Unified CallManager Does Not Support Recovery of Administration or Security Passwords

Chapter 2 of the *Cisco Unified Communications Operating System Administration Guide* does not contain the following information.

Unified CM does not support recovery of administration or security passwords. If you lose these passwords, you must reset the passwords, as described in the *Cisco Unified Communications Operating System Administration Guide*.

Tip The *Cisco Unified Communications Operating System Administration Guide* calls the section "Recovering the Administrator or Security Passwords," instead of "Resetting the Administrator or Security Passwords." Access the "Recovering the Administrator or Security Passwords" section to reset the passwords.

Characters Allowed in a Pre-Shared Key

Chapter 6 of the *Cisco Unified Communications Operating System Administration Guide* does not contain the following information.

Pre-shared IPSec keys can contain alphanumeric characters and hyphens only, not white spaces or any other characters. If you are migrating from a Windows-based version of Cisco Unified CallManager, you may need to change the name of your pre-shared IPSec keys, so they are compatible with current versions of Cisco Unified CallManager.

LDAP Authentication Chapter Omits Information on SSL Certificates and IP Addresses/Hostnames

The “LDAP Authentication” chapter in the *Cisco Unified CallManager Administration Guide* does not contain the following information:

If you check the Use SSL checkbox in the LDAP Authentication window in Cisco Unified CM Administration, enter the IP address or the hostname that exists in the corporate directory SSL certificate in the Host Name or IP Address for Server field, which displays in the same window. If the certificate contains an IP address, enter the IP address. If the certificate contains the hostname, enter the hostname. If you do not enter the IP address or hostname exactly as it exists in the certificate, problems may occur for some applications; for example, applications that use CTIManager.

Tip You must upload the corporate directory SSL certificate into Cisco Unified CallManager by using the Cisco Unified Communications Operating System. For information on how to perform this task, refer to the *Cisco Unified Communications Operating System Administration Guide*.

Enterprise Parameters and Service Parameters Chapters Omit Information on Set to Default Button

The "Enterprise Parameters Configuration" and the "Service Parameters Configuration" chapters in the *Cisco Unified CallManager Administration Guide* do not contain information on the Set to Default button. Clicking the Set to Default button in either the Enterprise Parameters Configuration window or Service Parameter Configuration window updates all parameters to the suggested value, which is the default that displays on the right side of the parameter. If a parameter does not have a suggested value, Unified CM does not update the value when you click the Set to Default button; for example, the Phone URL Parameters in the Enterprise Parameters Configuration window do not display a suggested value, so clicking the Set to Default button does not change the parameter that you configured.

A warning message displays after you click the Set to Default button. If you click OK in the dialog box, Unified CM updates all parameters in the configuration window to the suggested value; that is, if the parameter has a suggested value.

Information About Using an SRV Destination Port for the CUP Publish Trunk Service Parameter

The "Service Parameters Configuration" chapter in the *Cisco Unified CallManager Administration Guide* omits the following information.

You can configure a SIP trunk to use a DNS SRV port on a Cisco Unified Presence server as a destination. If you use a SIP trunk with a DNS SRV destination to configure the **CUP Publish Trunk** service parameter and then modify the DNS record, you must restart all devices (phones) that previously published, so they point to the correct Cisco Unified Presence server destination.

To configure the **CUP Publish Trunk** parameter, navigate to **System Service Parameters** and choose **Cisco CallManager** service for the server that you want to configure.

For an overview of configuring Cisco Unified Presence with Cisco Unified CallManager, see "Cisco Unified CallManager and Cisco Unified Presence High-Level Architecture Overview" in the *Cisco Unified CallManager System Guide*.

For SIP Trunks that are Used with Multiple Device Pools, Configure an SRV Destination Port

The "Trunk Configuration" chapter in the *Cisco Unified CallManager Administration Guide* omits the following information.

For configuring SIP trunks when you have multiple device pools in a cluster, you must configure a destination address that is a DNS SRV destination port.

From Cisco Unified CM Administration, choose **Device > Trunk**. Click **Find** to choose the SIP trunk that you want to edit or click **Add New** to create a new trunk.

When the Trunk Configuration window displays, enter the name of a DNS SRV port for the **Destination Address** and check the **Destination Address is an SRV Destination Port** checkbox.

Clustering Chapter Omits Information about Subsequent (Subscriber) Node

The “Clustering” chapter in the *Cisco Unified CallManager System Guide* does not state that Unified CM uses the subsequent (subscriber) node for database replication; that is, after you install Cisco Unified CallManager on the subsequent node, the node contains a replicate of the database that exists on the first node (publisher).

Tip To ensure that the subsequent node replicates the database of the first node, you must add the subsequent node to the Server Configuration window in Cisco Unified CM Administration on the first node before you install Unified CM on the server.

You can also use the subsequent node for call-processing redundancy and for load balancing. For information on how to configure call-processing redundancy and load balancing in Cisco Unified CM Administration, refer to the *Cisco Unified CallManager Administration Guide* and the *Cisco Unified CallManager System Guide.*

Trunk Chapter Omits Restrictions for H.323/H.225 Trunks

The “Understanding Cisco Unified CallManager Trunks Types” chapter in the *Cisco Unified CallManager System Guide* does not contain the following restriction for H.323/H.225 trunks.

You cannot configure more than one H.323 trunk of any type (gatekeeper or non-gatekeeper controlled) between the same clusters. Configuring more than one H.323 trunk can break inbound calls because Cisco Unified CM uses the received IP address to choose which trunk handles the call. If you configure more than one H.323 trunk between the same clusters, Cisco Unified CM may choose the wrong trunk device when a call gets processed. To avoid this issue, Cisco Unified CM checks the following configuration:

- Whether the remote Cisco Unified CM IP address that is configured for the trunk is the same as another remote Cisco Unified CM IP address for a configured trunk.
- Whether a remote Cisco Unified CM hostname for a configured trunk is the same as another remote Cisco Unified CM hostname for a configured trunk.

If you configure one trunk with an IP address, and you configure another trunk with a hostname that resolves to the same IP address, Cisco Unified CM does not detect this configuration, which causes duplicate trunk configuration and problems with call processing.

Cisco Unified CM cannot detect the configuration of a gatekeeper-controlled trunk and a non-gatekeeper controlled trunk or the configuration of multiple gatekeeper-controlled trunks between the same Cisco Unified CM clusters. Additionally, Cisco Unified CM cannot detect the configuration of a gatekeeper-controlled H.323 trunk with the configuration of an H.323 gateway that is accessible from that same gatekeeper-controlled H.323 trunk. These configurations can cause problems for call processing, so carefully configure your trunks in Cisco Unified CM to avoid these issues.

Running an NMAP Scan

The *Cisco Unified CallManager Security Guide* does not describe how to run a Network Mapper (NMAP) scan program. This program can be run on any Windows or Linux box to perform vulnerability scans. NMAP comprises a free and open source utility for network exploration or security auditing.

Note NMAP DP scan can take up to 18 hours to complete

Syntax

nmap -n -vv -sU -p ***<port_range> <ccm_ip_address>***

where:

-n: No DNS resolution. Tells NMAP to never do reverse DNS resolution on the active IP addresses that it finds. Because DNS can be slow even with the NMAP built-in parallel stub resolver, this option can slash scanning times.

-v: Increases the verbosity level, causing NMAP to print more information about the scan in progress. Open ports display as they are found and completion time estimates get provided when NMAP estimates that a scan will take more than a few minutes. Use this option twice or more for even greater verbosity.

-sU: Specifies a UDP port scan.

-p: Specifies which ports to scan and overrides the default. Consider individual port numbers as acceptable, as are ranges that are separated by a hyphen (for example 1-1023).

ccm_ip_address: IP address of Cisco Unified CallManager

Ephemeral Port Range

The Unified CM 5.1 TCP and UDP Port Usage document requires the following update: The Ephemeral port range for the system goes from 32768 to 61000.

Cisco TFTP Chapter Omits Configuration Tip on Centralized TFTP

The “Cisco TFTP” chapter in the *Cisco Unified CallManager System Guide* does not contain the following information on configuring centralized TFTP:

For centralized TFTP configurations, ensure that the main TFTP server exists in the cluster that runs the latest version of Cisco Unified CM; for example, if you are using a centralized TFTP server between a compatible Unified CM 4.x cluster and a Unified CM 5.x cluster, ensure that the main TFTP server exists in the Unified CM 5.x cluster. If the main TFTP server exists in the cluster that runs the earlier version of Unified CM, the phones use the locale files from the earlier version of Unified CM . This can cause issues with the phone; for example, the phone displays Undefined items or does not include some features. These errors display on the phone because the locale files that are served to the phones from the main cluster do not include the localized phrases .

Automated Alternate Routing (AAR) Limitation with Remote Gateways

AAR exhibits the limitation that calls that are routed over a remote gateway during a high-bandwidth situation fail, and the calls cannot get routed over the local gateway when AAR is used. This functionality proves important to customers who use Tail-End Hop Off (TEHO) for toll bypass.

Workaround Example

Use a specific partition for the TEHO in question.

In the following example, headquarters (HQ) has area code 408, and the Branch (BR1) has area code 919.

Configure as follows:

1. Create theTehoBr1forHQPt partition and assign this partition to the calling search space (CSS) of the HQ devices with a higher priority than the regular PSTN access uses.

2. Create the TehoBr1forHQRL route list and add the BR1 gateway route group to this route list as the first option and the HQ gateway as the second option.
3. Apply called party modification within the route list. In this case, apply predot called party modification for the BR1 route group and apply predot and prefix 1919 called party modification for the HQ route group.
4. Ensure that the gateway does not perform called party modification.
5. Create a route pattern in the TehoBr1forHQPt partition.
6. Ensure that no called party modifications are applied in the route pattern.

Results

In an out-of-bandwidth situation, after Unified CM tries to allocate the first route group for TEHO (BR1 route group), Cisco Unified CM retries the second route group, at which point the system strips the 91919 string and replaces it with the 1919 string, which is suitable for long-distance dialing. Because the string is configured for use by the local gateway, less rerouting takes place.

AAR works on a per-external-phone-number-mask basis and cannot be processed for an external PSTN number because the system does not know the phone number mask of the PSTN number. This workaround provides AAR functionality and improves network resiliency.

Incorrect Information for Voice Mail Port Name Field in Help for This Page

The Port Name field allows 1 to 45 characters including letters, numbers, dots, underscores and dashes, followed by -VI and the port number (from 1 to 96).

Barge Phone Display Messages

When a user initiates a barge to a SIP device, the barge initiator phone displays "To Barge <Display name> (Shared Line DN)."

When a user initiates a barge to a SCCP device, the barge initiator phone displays "To Barge <Display name>."

Call Forward All Call Search Space Backward Compatibility Does Not Get Documented

The Cisco Extension Mobility chapter in the *Cisco Unified CallManager Features and Services Guide* does not provide information on backward compatibility for the Call Forward All calling search space.

This enhancement allows Unified CM Release 4.x customers who are using device mobility and extension mobility to upgrade to Unified CM Release 5.1 without loss of functionality.

The new service parameter (CFA CSS Activation Policy) supports this enhancement. In the Service Parameter Configuration window, this parameter displays in the Clusterwide Parameters (Feature - Forward) section with two options.

- With Configured CSS (default)
- With Activating Device/Line CSS

If you select the **With Configured CSS** option, the Forward All Calling Search Space that is explicitly configured in the Directory Number Configuration window controls the forward all activation and call forwarding. If the Forward All Calling Search Space is set to None, no calling search space gets configured for Forward All. A forward all activation attempt to any directory number with a partition will fail. No change in the Forward All Calling Search Space and Secondary Calling Search Space for Forward All occurs during the forward all activation.

If you prefer to use the combination of the Directory Number Calling Search Space and Device Calling Search Space without explicitly configuring a Forward All Calling Search Space, select **With Activating Device/Line CSS** for the CSS Activation Policy. For this option, when Forward All is activated from the phone, the Forward All Calling Search Space and Secondary Calling Search Space for Forward All automatically get populated with the Directory Number Calling Search Space and Device Calling Search Space for the activating device.

With this configuration (Calling Search Space Activation Policy set to With Activating Device/Line), if the Forward All Calling Search Space is set to None, when forward all is activated through the phone, the combination of Directory Number Calling Search Space and activating Device Calling Search Space gets used to verify the forward all attempt.

By default, the value of the CFA CSS Activation Policy service parameter gets set to With Configured CSS.

Roaming

When a device is roaming in the same device mobility group, Unified CM uses the Device Mobility CSS to reach the local gateway. If a user sets Call Forward All at the phone, the CFA CSS gets set to None, and the CFA CSS Activation Policy gets set to With Activating Device/Line CSS; then,

- The Device CSS and Line CSS get used as the CFA CSS when the device is in its home location.
- If the device is roaming within the same device mobility group, the Device Mobility CSS from the Roaming Device Pool and the Line CSS get used as the CFA CSS.
- If the device is roaming within a different device mobility group, the Device CSS and Line CSS get used as the CFA CSS.

For more information about configuration options for Call Forward All, see the Directory Number Configuration chapter in the *Cisco Unified CallManager Administration Guide* and the Understanding Directory Numbers chapter in the *Cisco Unified CallManager System Guide*.

CTI Does Not Support Members of Line Groups

The *Cisco Unified CallManager Administration Guide* and *Cisco Unified CallManager System Guide* omit the following restriction: If a DN is a member of a line group or hunt list, you should not associate any device (CTI port, CTI route point, phone that is running SCCP, or phone that is running SIP) that uses that DN with a CTI user.

CTI ports and CTI route points with directory numbers (DNs) that are members of line groups and, by extension, that are members of hunt lists. If a DN is a member of a line group or hunt list, you cannot associate that DN with either a CTI port (that you configure with the Phone Configuration window) nor with a CTI route point (that you configure with the CTI Route Point Configuration window).

If you configure a DN as part of a line group, you cannot associate that DN with a CTI port nor a CTI route point. Conversely, when you configure a CTI port or CTI route point, you cannot specify a DN that already belongs to a line group or to a hunt list.

Certificate Documentation Does Not Get Provided for Microsoft Internet Explorer 7.0

The *Cisco Unified CallManager Administration Guide* and *Cisco Unified CallManager System Guide* do not provide information on importing the certificate for Internet Explorer 7.0. For information on importing the certificate for Internet Explorer 7.0, see the "Internet Explorer 7 Certificate Support"section on page 13.

Documentation Does Not List Correct Browser Support

The *Cisco Unified CallManager Administration Guide* and *Cisco Unified CallManager System Guide* do not list all browsers that are supported with Cisco Unified CallManager Administration in Release 5.1(3). For the current list of supported browsers, see the "General Administration Enhancements"section on page 21.

Documentation Does Not State That Last Name Is Required for LDAP Synchronization

The Unified CM documentation does not include the following information.

When you configure a user in Microsoft Windows Server 2000 and Windows Server 2003 Active Directory (AD), Netscape/iPlanet Directory, Sun ONE Directory Server 5.1, and Sun Java System Directory Server 5.2, ensure that you configure a last name for the user. After you configure LDAP synchronization in Cisco Unified CallManager Administration, users without last names in the corporate directory do not synchronize with the Unified CM database. No error displays in Cisco Unified CallManager Administration, but the log file indicates which users did not synchronize.

Documentation Does Not State the Minimum Requirement for the Perform a Re-sync Every Field

The *Cisco Unified CallManager Administration Guid*e does not state the minimum requirement for the Perform a Re-sync Every Field in the LDAP Directory window in Cisco Unified CallManager Administration. Unified CM can synchronize directory information every 6 hours, which is the minimum requirement for the Perform a Re-Sync Every Field.

Using the G.722 Codec

The *Cisco Unified CallManager Administration Guide* and the *Cisco Unified CallManager System Guide* do not provide the following information on the G.722 codec.

Unified CM 5.1(3) supports the Advertise G.722 Codec enterprise parameter, which determines whether Cisco Unified IP Phones will advertise the G.722 codec to Unified CM. Codec negotiation involves two steps. First, the phone must advertise the supported codec(s) to Unified CM (not all phones support the same set of codecs). Second, when Unified CM gets the list of supported codecs from all phones that are involved in the call attempt, it chooses a commonly supported codec based on various factors, including the region pair setting. This parameter only applies to Cisco Unified IP Phone 7941G, 7941G-GE, 7961G, 7961G-GE, 7970G, and 7971G-GE. Valid values specify True (the specified Cisco Unified IP Phones advertise G.722 to Unified CM) or False (the specified Cisco Unified IP Phones do not advertise G.722 to Unified CM).

Note The default for the Advertise G.722 Codec enterprise parameter enables G.722 on all phones in the cluster. The default value of the phone configuration Advertise G.722 Codec Product-Specific parameter uses the value that the enterprise parameter setting specifies.

The Product-Specific Configuration area in the Phone Configuration window supports the parameter, Advertise G.722 Codec. Use this parameter to override the enterprise parameter on an individual phone basis.

Table 11 indicates how the phone responds to the configuration options.

Table 11 How Phone Responds to Configuration Settings

Enterprise Parameter Setting	Phone (Product-Specific) Parameter Setting	Phone Advertises G.722
Advertise G.722 Codec Enabled (True)	Use System Default	Yes
Advertise G.722 Codec Enabled (True)	Enabled	Yes
Advertise G.722 Codec Enabled (True)	Disabled	No
Advertise G.722 Codec Disabled (False)	Use System Default	No
Advertise G.722 Codec Disabled (False)	Enabled	Yes
Advertise G.722 Codec Disabled (False)	Disabled	No

Unified CM supports G.722, which is a wideband codec, as well as a propriety codec simply named Wideband. Both represent wideband codecs. Wideband codecs such as G.722 provide a superior voice experience because wideband frequency response equals 200 Hz to 7 kHz compared to narrowband frequency response of 300 Hz to 3.4 kHz. At 64 KB/s, the G.722 codec offers conferencing performance and good music quality.

When users use a headset that supports wideband, they experience improved audio sensitivity when the wideband setting on their phones is enabled (it remains disabled by default). To access the wideband headset setting on the phone, users choose the **Settings** icon **> User Preferences > Audio Preferences > Wideband Headset**. Users should check with their system administrator to be sure their phone system is configured to use G.722 or wideband. If the system is not configured for a wideband codec, they may not detect any additional audio sensitivity, even when they are using a wideband headset.

The following Cisco Unified IP Phones (both SCCP and SIP) support the wideband codec G.722 for use with a wideband headset:

- Cisco Unified IP Phone 7971G-GE
- Cisco Unified IP Phone 7970G
- Cisco Unified IP Phone 7961G-GE
- Cisco Unified IP Phone 7961G
- Cisco Unified IP Phone 7941G-GE
- Cisco Unified IP Phone 7941G

When you choose a G.711 or G.722 codec in Region Configuration, you are choosing the bandwidth utilization. Choosing either codec produces the same effect. When you choose either G.711 or G.722, these codecs disallow selecting codecs that have a payload greater than 64 KB/s, such as the G.722 wideband codec and Advanced Audio Codec (ACC) (when ACC uses more than one channel).

If you choose a region that is lower than G.711 or G.722, the Advertise G.722 Codec enterprise parameter gets ignored because the system does not allow G.722, G.711, AAC, and wideband.

Tip Disregard the following statements in the System Level Configuration chapter and the Region Configuration chapter in the *Cisco Unified CallManager System Guide*: "The default audio codec for all calls through Cisco Unified CallManager specifies G.711. If you do not plan to use any other audio codec, you do not need to use regions." Because G.711 and G.722 use the same bandwidth, the system may use G.722 unless you choose False for the Advertise G.722 Codec enterprise parameter.

Tip Enabling the Advertise G.722 Codec parameter causes interoperability problems with call park and ad hoc conferences. When you use the enterprise parameter with features such as ad hoc conferencing and call park, change the setting to Disabled and update the device pools for the phones.

When enabled, the service parameter allows Cisco Unified IP Phones (such as 7971, 7970, 7941, 7961) to negotiate and use the G.722 codec when calls are within the same region.

If individual phone control and use of a specific codec type is required (for example, G.711), check the configuration of each phone (by using Phone Configuration) for the parameter Advertise G.722 Codec and change the setting to Disabled. Save and reset the device.

Note If the Advertise G.722 Codec enterprise parameter is set to Enabled, the administrator can override this by using the G.722 Codec Enabled service parameter. This service parameter determines whether Unified CM supports G.722 negotiation for none, some, or all devices. Valid values specify Enabled for All Devices (support G.722 for all devices), Enabled for All Devices Except Recording-Enabled Devices (support G.722 for all devices except those that have call recording enabled), or Disabled (do not support G.722 codec).

Restrictions Do Not Get Documented for the User ID Field in the End User Configuration Window

The *Cisco Unified CallManager Administration Guide* does not state that you can enter any character, including alphanumeric and special characters, in the User ID field in the End User Configuration window in Cisco Unified CallManager Administration. No character restrictions exist for this field.

Tip You can modify end user information only if synchronization with an LDAP server is not enabled. If synchronization is enabled, you can view end user data, but you cannot modify it.

CTI Monitored Lines

To calculate the number of CTI monitored lines in a system, use the following formula:

> number of pilot point DNs + (number of clients open * number of directory numbers per phone) + (number of parked directory numbers * number of open clients) = CTI Monitored Lines

Shared Line Configuration

The Tips section for Shared Line Appearance in the *Cisco Unified CallManager System Guide* and the Directory Number Configuration chapter in the *Cisco Unified CallManager Administration Guide* require this addition:

Shared lines always have identical DN settings, except for the field sections in the Directory Number Configuration window that contains the naming convention “on Device SEPXXXXXXXXXXXX,” which are maintained/mapped to a specific device.

If you add a shared line to a device, the shared DN configuration settings, such as Calling Search Space and Call Forward and Pickup, display. If these DN configuration settings are changed, the new settings apply to all the shared lines.

RTMT Trace and Log Central Disk IO and CPU Throttling

RTMT now supports the throttling of critical Trace and Log Central operations and jobs, whether they are running on demand, scheduled, or automatic. The throttling means that the operations are slowed when IO utilization is in high demand for call processing, so call processing can take precedence.

When a user makes a request for an on demand operation when the call processing node is running under high IO conditions, the system now displays a warning that gives the user the opportunity to abort the operation. Be aware that the IO rate threshold values control when the warning displays are configurable with the following new service parameters (CiscoRIS Data Collector Service):

- TLC Throttling CPU Goal
- TLC Throttling IOWait Goal

The values of these parameters get compared to the system actual CPU and IOWait values. If the goal (the value of the service parameter) is lower than the actual value, the system issues a warning.

For More Information

- Service Parameters Configuration chapter, *Cisco Unified CallManager Administration Guide*

Trace Compression Support

This feature enables the ROS (Recoverable Outstream) library to support the compressed output of tracefiles. The files get compressed as they are being generated. The benefits of tracefile compression include

- Reduces the capacity required to store tracefiles.
- Reduces the disk head movement which results in significantly improved disk I/O wait. This may prove to be of value when tracefile demand is high.

Use the new enterprise parameter, Trace Compression, to enable or disable trace compression. The default value for this parameter specifies Disabled. For information on setting the values of enterprise parameters, see the Enterprise Parameters Configuration chapter in the *Cisco Unified CallManager Administration Guide*.

Caution Compressing files adds additional CPU cycles. Enabling the Trace Compression enterprise parameter can negatively impact overall call throughput by as much as 10 percent.

You can recognize compressed files by their .gz extension (.gzo if the file is still being written to). To open a compressed file, double click the file name, and the file opens in the log viewer.

For More Information

- Enterprise Parameters Configuration chapter, *Cisco Unified CallManager Administration Guide*

Adding RTMT Performance Counters in Bulk

The *Cisco Unified CallManager Serviceability Administration Guide* omits the following information about adding multiple counters and instances of counters in a single add operation.

On the RTMT Perfmon Monitoring pane, in table format only (not in chart format), you can now select multiple counters and multiple instances of counters and add them all with a single click. Prior to this enhancement, you could add them only one at a time.

In table format, be aware that all the following methods are now available for selecting counters to view:

- Double click single counter, select single instance from popup window, and click **Add**.
- Double click single counter, select multiple instances from popup window, and click **Add**.
- Drag single counter, select single instance from popup window, and click **Add**.
- Drag single counter, select multiple instances from popup window, and click **Add**.
- Select multiple counters, drag on window, select single instance from popup window, and click **Add**.
- Select multiple counters, drag on window, select multiple instances from popup window, and click **Add**.

In chart format makes the following methods available:

- Double click single counter, select single instance from popup window, and click **Add**.
- Drag single counter, select single instance from popup window, and click **Add**.

If you attempt to add multiple counters at one time while in chart format, a message displays to indicate that you can only select a single counter or instance while in chart format.

For more information about performance monitoring, see the Configuring and Using Performance Monitoring chapter in the *Cisco Unified CallManager Serviceability Administration Guide*.

Errors

This section contains information on the following topics:

- Pilot Point Chapter Includes Incorrect Number of Allowed Characters for Description Setting, page 69
- Pilot Point Chapter Includes Incorrect Number of Allowed Characters for Description Setting, page 69
- Default Device Profile Chapter Incorrectly Includes Expansion Module Settings, page 69
- Directory Numbers Chapter Includes Incorrect Example for Shared Lines and Call Forward Busy Trigger, page 69
- Cisco Unified IP Phone 7970 Series Administration Guide for Unified CM Release 5.1 (for Models 7970G and 7971G-GE) (SCCP), page 70
- Obtaining a License File, page 71
- Number of Supported Locations and Regions Increased, page 74
- Description of Create all new ports like port 1 Button Incorrect, page 75
- Message Waiting Configuration Field Descriptions, page 75
- Media Resource Group Configuration Field Description, page 75
- Transcoder Configuration Field Description, page 75

Pilot Point Chapter Includes Incorrect Number of Allowed Characters for Description Setting

The "Cisco Unified CallManager Attendant Console" chapter in the *Cisco Unified CallManager Features and Services Guide* contains incorrect information on the Description setting that displays in the Pilot Point Configuration window. Disregard the description in the chapter/online help, and use the following information when you configure the Description setting in the Pilot Point Configuration window in Cisco Unified CallManager Administration:

Description— Enter a description of the pilot point. This description can contain up to 128 characters and spaces. Do not enter “, <, >, \, @, or %.

Default Device Profile Chapter Incorrectly Includes Expansion Module Settings

The “Default Device Profile” chapter in the *Cisco Unified CallManager Administration Guide* includes descriptions for the following settings, which you cannot configure in the Default Device Profile Configuration window in Cisco Unified CM Administration: Module 1 and Module 2. Ignore these descriptions in this chapter.

Note The “Cisco Extension Mobility” chapter in the *Cisco Unified CallManager Features and Services Guide* states that you can configure the Module 1 and Module 2 drop-down list boxes in the Default Device Profile Configuration window, which is not true.

Directory Numbers Chapter Includes Incorrect Example for Shared Lines and Call Forward Busy Trigger

The “Understanding Directory Numbers” chapter in the *Cisco Unified CallManager System Guide* includes incorrect example for shared lines and call forward busy trigger. Use the following information instead of the information in the guide:

Devices with shared-line appearance support the Call Forward Busy Trigger and the Maximum Number of Calls settings. You can configure Call Forward Busy Trigger per line appearance, but the configuration cannot exceed the maximum number call setting for that directory number.

The following example demonstrates how three Cisco Unified IP Phones with the same shared-line appearance, directory number 2000, use Call Forward Busy Trigger and Maximum Number of Calls settings. This example assumes that two calls occur. The following values configuration applies for the devices:

- Cisco Unified IP Phone 1—Configured for a maximum call value of 1 and busy trigger value of 1
- Cisco Unified IP Phone 2—Configured for a maximum call value of 1 and busy trigger value of 1
- Cisco Unified IP Phone 3—Configured a for maximum call value of 2 and busy trigger value of 2

When Cisco Unified IP Phone User 1 dials directory number 2000 for the first call, all three devices ring. The user for Cisco Unified IP Phone 3 picks up the call, and Cisco Unified IP Phones 1 and 2 go to remote in use. When the user for Cisco Unified IP Phone 3 puts the call on hold, user can retrieve the call from the Cisco Unified IP Phone 1 or Cisco Unified IP Phone 2. When User 2 dials directory number 2000 for the second call, only Cisco Unified IP Phone 3 rings.

Cisco Unified IP Phone 7970 Series Administration Guide for Unified CM Release 5.1 (for Models 7970G and 7971G-GE) (SCCP)

The *Cisco Unified IP Phone 7970 Series Administration Guide for Cisco Unified CallManager Release 5.1* (SCCP) incorrectly documents where the List.xml file is stored in the TFTP server. The following sections provide the correct procedure.

List.xml File Format Requirements

The List.xml file defines an XML object that contains a list of background images. The following subdirectory on the TFTP server stores the List.xml file:

/Desktops/320x212x12

Tip If you are manually creating the directory structure and the List.xml file, you must ensure that the directories and files can be accessed by the user\CCMService, which the TFTP service uses.

For more information, see the Cisco TFTP chapter in *Cisco Unified CallManager System Guide* and the Software Upgrades chapter in *Cisco Unified CallManager Operating System Administration Guide*.

The List.xml file can include up to 50 background images. The images occur in the order in which they appear in the Background Images menu on the phone. For each image, the List.xml file contains one element type, called ImageItem. The ImageItem element includes these two attributes:

- Image—Uniform resource identifier (URI) that specifies where the phone obtains the thumbnail image that will display on the Background Images menu on a phone.
- URL—URI that specifies where the phone obtains the full-size image.

The following example shows a List.xml file that defines two images. Ensure the required Image and URL attributes are included for each image. The TFTP URI that is shown in the example represents the only supported method for linking to full-size and thumbnail images. Be aware that HTTP URL support does not get provided.

List.xml Example

```
<CiscoIPPhoneImageList>

<ImageItem Image="TFTP:Desktops/320x212x12/TN-Fountain.png"

URL="TFTP:Desktops/320x212x12/Fountain.png"/>
```

```
<ImageItem Image="TFTP:Desktops/320x212x12/TN-FullMoon.png"
URL="TFTP:Desktops/320x212x12/FullMoon.png"/>
</CiscoIPPhoneImageList>
```

The Cisco Unified IP Phone firmware includes a default background image. The List.xml file does not define this image. The default image always represents the first image that displays in the Background Images menu on the phone.

Obtaining a License File

Licensing helps manage Unified CM licenses and enforces the licenses for Unified CM nodes and devices.

The *Cisco Unified CallManager Administration Guide* and *Cisco Unified CallManager System Guide* contain incomplete information on obtaining and uploading licenses.

The following sections provide the correct information on obtaining licenses for new Unified CM nodes and/or devices as well as for Unified CM nodes that have been upgraded from various releases.

Note The *Installing Cisco Unified CallManager Release 5.1(3)* and *Upgrading Cisco Unified CallManager Release 5.1(3)* documents also contain the correct licensing procedures.

Note You do not need to obtain new licenses if you are upgrading within a software release train, such as 5.0(1) to 5.1(1).

To obtain and upload a license, see the section that applies to your situation:

- New Cisco CallManager Servers and Devices, page 71
- Upgrading From Cisco Unified CallManager 4.x Releases, page 72
- Uploading a License file, page 73
- License File Contents, page 74

New Cisco CallManager Servers and Devices

Use the following procedure to obtain a node license file for new Unified CM servers and to obtain device licenses for new devices that require additional device license units.

Each node in your cluster requires one node license unit. Each device type requires a fixed number of licenses units, depending on the type. For example, Cisco Unified IP Phone 7920 requires four license units, and Cisco Unified IP Phone 7970 requires five units. If you want licenses for four Cisco Unified IP Phones 7920 and four Cisco Unified IP Phones 7970 phones, you require 36 phone license units.

You use the Product Authorization Key (PAK) that came with your product to obtain the necessary permanent licenses, as described in the following procedure.

Procedure

Step 1 Enter the Product Authorization Key (PAK) that you received with your Cisco Unified CallManager or phone order in the License Registration web tool at http://www.cisco.com/go/license.

Step 2 Click **Submit**.

Step 3 Follow the system prompts. You must enter the MAC address of the Ethernet 0 NIC of the first node of the Cisco Unified CallManager cluster. You must enter a valid e-mail address as well as the number of nodes and device license units for which you want licenses.

Note For information on calculating the number of device license units that are required for the devices in your system, refer to the “License Unit Calculator” section in the *Cisco Unified CallManager Administration Guide*.

The system sends the license file(s) to you via e-mail by using the e-mail ID that you provided. The format of a license file specifies CCM<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

Note One license file may apply to more than one node in your cluster. For information on how to interpret the license file, see the “License File Contents” section of the *Cisco Unified CallManager System Guide*.

Step 4 You must upload the license file to the server with the matching MAC address that you provided in Step 3. See the “Uploading a License file”section on page 73. This server then takes on the functionality of the license manager.

Note You can use the licenses that are specified in the license file only within the cluster on which the license file is uploaded.

Upgrading From Cisco Unified CallManager 4.x Releases

When you upgrade from supported Unified CM 4.x releases, the system calculates the licenses that are required for existing devices and Unified CM nodes and generates an intermediate file (XML file) that contains this information. You use this file to obtain license files that you can upgrade into Cisco Unified CallManager Administration. You receive these licenses free of cost because you are already using these phones for a Unified CM 4.x release.

Use the following procedure to obtain licenses for Cisco Unified CallManager when upgrading from supported 4.x releases.

Note You do not need to obtain new licenses if you are upgrading within a software release train, such as 5.0(1) to 5.1(1).

Procedure

Step 1 After you complete the Unified CM upgrade process, as described in *Upgrading Cisco Unified CallManager*, navigate to Cisco Unified CallManager Administration and choose **System > Licensing > License File Upload**.

The License File Upload window displays.

Step 2 Choose the licugrade_<upgrade version>.lic file from the Existing Files drop-down list and click **View File**. A pop-up window displays that has the license information for existing devices and nodes. Copy this information. To copy the contents on this window, you can use **Ctrl-A** (Select All) and **Ctrl-C** (Copy).

Step 3 Navigate to the License Registration web tool at https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet?FormId=806.

Step 4 Enter the MAC address of the Ethernet 0 NIC of the first node of the Cisco Unified CallManager cluster.

Step 5 In the text box that is provided, paste the license file contents that you copied in Step 2 by using the appropriate keyboard shortcuts, such as **Ctrl-V**.

Step 6 Enter a valid e-mail address and click **Continue**. A license file generates.

The system sends the license file to you via e-mail by using the e-mail address that you provided.

Step 7 You must upload the license file to the server with the matching MAC address that you provided in Step 4. See the on page 73.

Step 8 You can obtain licenses for new devices that you are adding to the upgraded system, if your system requires additional device license units. For detailed instructions, see the "New Cisco CallManager Servers and Devices"section on page 71.

Uploading a License file

Use the following procedure to upload a license file to the Cisco Unified CallManager server with the matching MAC address that is provided when a license file is requested. For information about obtaining a license file, see the "Obtaining a License File"section on page 71. The Cisco Unified CallManager server where the license file is loaded takes on the functionality of the license manager.

Note Upload the license file only on the first node of Cisco Unified CallManager cluster.

Procedure

Step 1 Choose **System > License > Upload License File**.

The License File Upload window displays.

Step 2 The Existing License Files drop-down list box displays the license files that are already uploaded to the server.

Note To view the file content of any existing files, choose the file from the drop-down list box and click **View File**.

Step 3 To choose a new license file to upload, click **Upload License File**.

The Upload File pop-up window displays.

Step 4 Browse and choose a license file to upload to the server.

Note The format of the license file that you receive specifies CCM<timestamp>.lic. If you retain the .lic extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.

Step 5 Click **Upload License File**.

After the upload process completes, the Upload Result file displays.

Step 6 Click **Close**.

Step 7 In the License File Upload window, the status of the uploaded file displays.

Note The license file gets uploaded into the database, only if the version that is specified in the license file is greater than or equal to the Cisco Unified CallManager version that is running in the cluster. If the version check fails, an alarm gets generated, and you should get a new license file with the correct version. The system bases the version check only on major releases.

License File Contents

The *Cisco Unified CallManager System Guide* does not include the following example of a permanent Unified CM node license:

Example 0-1 Permanent CCM_Node licenses

```
# Optional usage agreement, legal language, tracking information
# Some other comments
INCREMENT CCM_NODE cisco 5.0 permanent uncounted \
VENDOR_STRING=<Count>3</Count><OrigMacId>000BCD4EE59D</OrigMacId><LicFileVersion>1.0</LicF
ileVersion> \
 HOSTID=000bcd4ee59d \
 NOTICE="<LicFileID>20050826140539162</LicFileID><LicLineID>1</LicLineID> \
 <PAK></PAK>" SIGN="19B3 4C6C 25AC 6D22 4D75 DE6A 656B 08C5 \
 30E4 16DB 771B 1393 9DC1 DBC4 C5AA 15CC 6E6C B7B8 895A DCBA \
 B40F C551 2625 1C97 F20D 9977 6CFF 3603 081E 6FF2"
```

The preceding license file includes the following information:

- No expiration date for this license exists as indicated by the keyword permanent.
- This license file provides three licenses for version 5.0 of the feature CCM_NODES.
- The Cisco-specific fieldLicFileID identifies this license file.
- You can add multiple increment lines for same feature in a license file to increase the license count. Ensure that no INCREMENT lines are identical and that each of them gets signed independently.

Number of Supported Locations and Regions Increased

The *Cisco Unified CallManager System Guide* and *Cisco Unified CallManager Administration Guide* incorrectly state the number of regions and locations that Unified CM supports.

Unified CM supports up to 1000 locations and up to 2000 regions. The following limitations and restrictions apply:

- Configure as many regions as possible to Use System Default for inter-/intra-region audio codecs and video bandwidth.
- Configure as many locations as possible to Use System Default for the RSVP policy.
- This enhancement requires an MCS 7845H1 or higher server.

Description of Create all new ports like port 1 Button Incorrect

The *Cisco Unified CallManager Administration Guide* describes the Create all new ports like port 1 button incorrectly. When you configure the button, use the following information.

The Create all new ports like port 1 button allows you to create ports 2 through 48 with the same parameters and settings as port 1, only if ports 2 through 48 are not configured.

Message Waiting Configuration Field Descriptions

The descriptions that are provided in the *Cisco Unified CallManager Administration Guide* do not match the allowed values for various fields. The following table contains the revised field descriptions.

Table 12 Message Waiting Configuration Settings

Field Name	Description
Message Waiting Number	Enter the Cisco Message Waiting directory number. Make sure that this number is not used within the Cisco Unified CallManager auto-registration range. You may use the following characters: 0 to 9, ?, [,], +, -, *, ^, #, !.
Description	Enter up to 50 characters for a description of the message-waiting directory number. You may use any characters except the following ones: “, <, >, &, %.

Media Resource Group Configuration Field Description

The description that is provided in the *Cisco Unified CallManager Administration Guide* does not match the allowed values for the Description field of the Media Resource Group Configuration window. The following table contains the revised field description.

Table 13 Media Resource Group Configuration Settings

Field	Description
Description	Enter a description for the media resource group. This description can comprise up to 50 characters. Ensure Description does not contain double quotes (“), less than (<), greater than (>), ampersand (&), or the percent (%) sign.

Transcoder Configuration Field Description

The description that is provided in the *Cisco Unified CallManager Administration Guide* does not match the details for the Description field of the Transcoder Configuration window. The following table contains the revised field description.

Table 14 Transcoder Configuration Settings

Field	Description
Description	Enter a description (up to 128 characters) or leave blank to generate automatically from the MAC address or device name that you provide.

Application and End User CAPF Profile Configuration Instance ID Setting

The Application and End User CAPF Profile Configuration Settings table in the *Cisco Unified CallManager Security Guide* incorrectly states that the Instance Id field allows these characters: dots (.), dashes(-) and underscore (_). The Instance ID field allows only alphanumeric characters (a-zA-Z0-9).

Incorrect Description for User ID Field End User, Phone, DN, and LA Configuration Window

The *Cisco Unified CallManager Administration Guide* incorrectly describes the User ID field that displays in the End User, Phone, DN, and LA Configuration window in Cisco Unified CallManager Administration. When you configure that field, use the following information instead of the information in the administration guide: Enter the end user identification name. Unified CM does not permit modifying the user ID after it is created. You may use the following special characters: =, +, <, >, #, ;, \, , ""

Incorrect Information on How to Install Assistant Console Application

The *Cisco Unified CallManager Features and Services Guide* incorrectly describes how to obtain the assistant console application for Cisco Unified CallManager Assistant. In Release 5.1(3), the assistant no longer obtains the assistant console application via the URL that is listed in the guide. Instead, the assistant must download the Cisco Unified CallManager Assistant plug-in from Cisco Unified CallManager Administration (choose **Applications > Plugins**), as described in the "Cisco Unified CallManager Assistant"section on page 22.

The *Cisco Unified CallManager Features and Services Guide* does not state that the assistant console application supports Windows Vista.

Disregard the entire section, Assistant Console Dialog Options, in the *Cisco Unified CallManager Features and Services Guide*. Instead, use the information in the "Cisco Unified CallManager Assistant"section on page 22.

Incorrect Information for Description Field in the Message Waiting Configuration Window

The *Cisco Unified CallManager Administration Guide* incorrectly states that you can enter up to 30 characters in the Description field in the Message Waiting Configuration window in Cisco Unified CallManager Administration. You can enter up to 50 characters.

Restoring Data to a Subsequent Node

The Restoring Subsequent Cluster Nodes section of the *Disaster Recovery System Administration Guide* incorrectly states that you must restore a subsequent node by restoring it from the same DRS backup file that you used to restore the first node.

Instead, you restore a subsequent node by performing a restore operation on the first node in the cluster. The Restore wizard allows you to select which nodes to restore and prompts you to enter the location of the directory where you backed up your data by using DRS. You do not specify a backup file within this directory. DRS automatically obtains the correct backup data to restore the nodes that you selected.

Cisco Unified IP Phone 7902G, 7905G, and 7912G Administration Guide for Cisco Unified CallManager Release 5.0 (SCCP)

The *Cisco Unified IP Phone 7902G, 7905G, and 7912G Administration Guide for Cisco Unified CallManager Release 5.0 (SCCP)* incorrectly documents how an administrator should customize the 7905G and 7912G phones logo. The following sections provide the correct procedure.

Configuring a Custom Background Image

To configure custom background images for the Cisco Unified IP Phone, follow these steps:

Procedure

Step 1 Open a command window and enter the following command:

```
bmp2logo imageID image.bmp image.logo
```

where:

- imageID specifies a unique identifier for the new graphic. This identifier must comprise a number from 0 through 4294967296 and must differ from the identifier of the graphic that is currently on the phone.
- image specifies the base file name of the image that you previously created and saved with the graphics program.

Note The imageID of the image that comes with the phone specifies 1.

For example, if the image identifier is 10 and the base name of your image file is mylogo, enter this command:

```
bmp2logo 10 mylogo.bmp mylogo.log
```

Step 2 Copy the image.logo file to the following directory in the TFTP server for the Unified CM:

```
/
```

Note Be aware that the file name and subdirectory parameters are case sensitive. Be sure to use the forward slash “/” when you specify the subdirectory path.

Step 3 Add the following line to the Cisco Unified IP Phone profile file:

```
upgradelogo:imageID,TFTPServerID,image.logo
```

where:

- imageID specifies the same unique identifier that you specified in Step 1.
- TFTPServerID specifies the IP address of the TFTP server on which the image.logo file gets stored. If the image.logo file gets stored on the same TFTP server as the Cisco Unified IP Phone configuration file, replace TFTPServerID with the numeral 0.
- image specifies the base file name of the image file.

  For example, if the image identifier is 10, the converted file is stored on the same TFTP server as the Cisco Unified IP Phone configuration file, and the base name of the converted image file specifies mylogo, add the following line to the configuration file:

upgradelogo:10,0,mylogo.logo

Note For detailed information about using profile files, see Appendix A, “Additional Configuration Methods and Parameters.”

Step 4 Use the cfgfmt.exe tool to generate a binary profile file from the text file.

Step 5 Upload the new binary file that you created to the following directory in the TFTP server for the Unified CM:

/

Note Be aware that the file name and directory parameters are case sensitive. Be sure to use the forward slash “/” when you specify the directory path.

To upload the files, choose **Software Upgrades > Upload TFTP Server File** in Cisco Unified OS Administration. For more information, see the “Software Upgrades” chapter in *Cisco Unified CallManager Operating System Administration Guide*.

You must also copy the customized binary files to the other TFTP servers that the phone may contact to obtain these files.

Note Cisco recommends that you also store backup copies of custom binary files in another location. You can use these backup copies if the customized files get overwritten when you upgrade Unified CM.

Note For detailed information about using profile files, see Appendix A, “Additional Configuration Methods and Parameters.”

Step 6 Power cycle the phone.

The new graphic displays when the phone restarts

Incorrect URL for the Unified CM User Option Pages

The Cisco Web Dialer chapter in the *Cisco Unified CallManager Features and Services Guide* provides an incorrect URL for the Unified CM User Option Pages. The URL should read

https://<IP address of the Cisco Unified CallManager server>:8443/ccmuser/showhome.do.

Incorrect Information on Configuring Partitions and DNs for JTAPI/TAPI Controlled Devices

Disregard the following note in the Directory Number Configuration chapter in the *Cisco Unified CallManager Administration Guide*: If a JTAPI or TAPI application controls or monitors a device, you should not configure multiple instances of the same DN (with different partitions) on that device.

In fact, if a JTAPI or TAPI application controls a device, you can configure multiple instances of the same DN (with different partitions) on that device.

Default Device Profile Information

The Default Device Profile Configuration chapter of the *Cisco Unified CallManager Administration Guide* incorrectly states that the Default Device Profile can be configured to subscribe to services. Disregard the following text:

- The entire section entitled "Subscribing Services to a Default Device Profile."
- The portion of the introductory sentence in the "Configuring a New Device Profile" section that lists "subscribed IP phone services" as one of the configurable attributes of the default device profile.

rtmt.log Storage Location

The Trace Collection and Log Central in RTMT chapter of the *Cisco Unified CallManager Serviceability Administration Guide* inaccurately describes the storage location of the rtmt.log file. The correct information follows:

Updating the Trace Configuration Setting for RTMT

To edit trace settings for the Real-Time Monitoring plug-in, choose **Edit > Trace Settings**; then, click the radio button that applies. The system stores the rtmt.log file in the Documents and Settings directory for the user; for example, on a Windows machine, the log gets stored in C:\Documents and Settings\<userid>\.jrtmt\log.

Updates

This section contains updates that have occurred since the release of the Unified CM 5.1(3) documentation. These changes may not appear in the current documentation or the online help for Cisco Unified CallManager:

- Information About Changing Region Bandwidth Settings When Video Calls Are Made, page 79
- Single Sign-On Capability, page 80
- Using Cisco Extension Mobility Description in Cisco Unified IP Phone User Guides, page 80
- Recovering Administrator and Security Passwords, page 81

Information About Changing Region Bandwidth Settings When Video Calls Are Made

The following informational reference will get added to the Cisco Unified CallManager Administration documentation:

Refer to the "Regions" subtopic under the "Administration Considerations" topic of the IP Video Telephony chapter of the *Cisco Unified Communications Solution Reference Network Design (SRND)* for the current release, which provides recommendations as to how the video bandwidth should be set for regions and locations, so the video portion of video calls will succeed, and the video calls will not get rejected nor set up as audio-only calls.

The reference will get added to the following topics of the Cisco Unified CallManager Administration documentation:

- document: *Cisco Unified CallManager System Guide*
  chapter: Understanding Video Telephony
  topic: Bandwidth Management
- document: *Cisco Unified CallManager System Guide*
  chapter: Call Admission Control
  topic: Bandwidth Calculations
- document: *Cisco Unified CallManager Administration Guide*
  chapter: Location Configuration
  topic: list of restrictions at the beginning of the chapter
- document: *Cisco Unified CallManager Administration Guide*
  chapter: Region Configuration
  topic: list of limitations and restrictions at the beginning of the chapter

Single Sign-On Capability

The Application Users and End Users chapter of the *Cisco Unified CallManager System Guide* requires this update for single sign-on capability:

Administrator users in the Standard Unified CM Super Users group can access all administrative applications in the Cisco Unified CallManager Administration navigation menu (Cisco Unified CallManager Administration, Cisco Unified Serviceability, and Cisco Unified Reporting) with a single sign-on to one of the applications.

You set the default Administrator username and password during Unified CM installation. You can change the Administrator password or set up a new Administrator account in the Application User Configuration window in Cisco Unified CallManager Administration.

Using Cisco Extension Mobility Description in Cisco Unified IP Phone User Guides

The following information on extension mobility needs updating in the *Cisco Unified IP Phone Guide* (all phone models).

Cisco Extension Mobility (EM) allows you to temporarily configure a Cisco Unified IP Phone as your own. After you log in to EM, the phone adopts your user profile, including your phone lines, features, established services, and web-based settings. Your system administrator must configure EM for you.

Tips

- EM automatically logs you out after a certain time. Your system administrators establishes this time limit.
- Changes that you make to your EM profile from your User Options windows take effect immediately if you are logged in to EM on the phone; otherwise, changes take effect the next time that you log in.
- Changes that you make to your EM profile directly on the phone (rather than on your User Options windows) take effect immediately if you are logged out of EM; otherwise, changes take effect after you log out.
- Local settings that are controlled by the phone do not get maintained in your EM profile.

Recovering Administrator and Security Passwords

This section replaces the Recovering the Administrator Password section in the Log In To Cisco Unified Communications Operating System Administration chapter of the *Cisco Unified Communications Operating System Administration Guide* for releases 5.0(4), 5.1(1), and 6.0(1).

If you lose the administrator password or security password, use the following procedure to reset these passwords.

Note To perform the password recovery process, you must be directly connected to the system through the system console; that is, you must have a keyboard and monitor connected to the server. You cannot recover a password when you are connected to the system through a secure shell session.

Note During this procedure, you must remove and then insert a valid CD or DVD in the disk drive to prove that you have physical access to the system.

Procedure

Step 1 Log in to the system with the following username and password:

- Username: **pwrecovery**
- Password: **pwreset**

The Welcome to platform password reset window displays.

Step 2 To continue, press any key.

Step 3 If you have a CD or DVD in the disk drive, remove it now.

Step 4 To continue, press any key.

The system tests to ensure that you have removed the CD or DVD from the disk drive.

Step 5 Insert a valid CD or DVD into the disk drive.

The system tests to ensure that you have inserted the disk.

Step 6 After the system verifies that you have inserted the disk, you get prompted to enter one of the following options to continue:

- To reset the administrator password, enter **a**.
- To reset the security password, enter **s**.
- To quit, enter **q**.

Step 7 Enter a new password of the type that you chose.

Step 8 Reenter the new password.

The password must contain at least 6 characters. The system checks the new password for strength. If the password does not pass the strength check, you get prompted to enter a new password.

Step 9 After the system verifies the strength of the new password, the password gets reset, and you get prompted to press any key to exit the password reset utility.

Caution The security password on all nodes in a cluster must match. Change the security password on all machines, or the cluster nodes will not communicate.

Changes

This section contains changes that have occurred since the release of the Unified CM 5.1(3) documentation. These changes may not appear in the current documentation or the online help for Cisco Unified CallManager:

- IPMA Assistant Console Installation and Windows Vista Support, page 82
- CDR Search Report GUI, page 82
- Devices That are Associated with the Attendant Console Application User, page 82
- Third-Party Certificate Authority Verification, page 83

IPMA Assistant Console Installation and Windows Vista Support

The following changes that have been made to IPMA Assistant Console installation support Windows Vista.

The URL-based installation no longer gets supported by Cisco Unified CallManager Administration and is available only via the Cisco Unified CallManager Administration plug-in download page.

Procedure

Step 1 From the Cisco Unified CallManager plug-in window, download CiscoUnifiedCallManagerAssistantConsole.exe.

Step 2 To set up Assistant Console, double-click the .exe file.

Step 3 After the Assistant Console is set up, the IP address of the Unified CM server should get provided to the Assistant Console to connect to the IPMA services.

CDR Search Report GUI

The CDR Search Report GUI windows changed to show both the UTC and Local time of the server, including the date and time string (time string format equals HH:MM:SS), as in Aug 31, 2007 12:00:00. The default ToDate search criteria changed to be that of the time of the server in UTC and the default FromDate got set to 1 hour earlier than the ToDate.

Devices That are Associated with the Attendant Console Application User

The *Cisco Unified CallManager Features and Services Guide* incorrectly states that administrators who are configuring Cisco Unified CallManager Attendant Console must associate devices with the Cisco Unified CallManager Attendant Console ac application user, unless the administrators enable the superprovider feature.

The document should state that administrators must always enable the superprovider feature by associating the ac application user with the user group "Standard CTI Allow Control of All Devices" and must not associate any devices with the Cisco Unified CallManager Attendant Console ac application user.

Caution System instability can occur if you associate devices to the Cisco Unified CallManager Attendant Console application user.

During an upgrade from Unified CM Release 4.x, the system automatically converts the ac application user to a superprovider user and disassociates the devices that were previously associated to the application user.

To enable device security for the Cisco Unified CallManager Attendant Console, configure an ACDeviceAuthenticationUser application user and associate the attendant phones with that user.

Third-Party Certificate Authority Verification

The *Cisco Unified Communications Operating System Administration Guide, Release 5.1(1)* states that Cisco has verified Verisign as a source for third-party certificates. Be aware that this is no longer correct, and Verisign is not a verified CA.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

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