



Cisco Unified Real-Time Monitoring Tool Administration Guide, Release 12.5(1)

First Published: 2019-01-22

Last Modified: 2021-10-12

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies of this document are considered uncontrolled. See the current online version for the latest version.

Cisco has more than 200 offices worldwide. Addresses and phone numbers are listed on the Cisco website at www.cisco.com/go/offices.

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on standards documentation, or language that is used by a referenced third-party product.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: <https://www.cisco.com/c/en/us/about/legal/trademarks.html>. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1721R)

© 2019 Cisco Systems, Inc. All rights reserved.



CONTENTS

PREFACE

Preface	xix
About This Guide	xix
Audience	xx
Related Documentation	xx
Conventions	xx
Communications, Services, and Additional Information	xxii
Cisco Product Security	xxii
Organization	xxii

CHAPTER 1

Administration Overview	1
Cisco Unified Real-Time Monitoring Tool	1
Operating System Support	2

CHAPTER 2

Getting Started	3
Install and Configure Unified RTMT	3
Install Unified RTMT	3
Upgrade RTMT	5
Launch Unified RTMT	6
Run a Program as an Administrator	8
Multiple installations of Unified RTMT	8
Administration Tools	9
System Interface	9
Performance Monitoring	11
System summary status	11
Server Status Monitoring	12
Performance Counter Interface	13

Trace and Log Central	16
Configuration Profiles	17
Categories	17
Alerts	18
Alert options	18
Alert Fields	19
Alert Logs	21
Log Partition Monitoring Tool	22
Cisco Unified Analysis Manager	23
Services, Servlets, and Service Parameters	24
Nonconfigurable Components	25
Uninstall Unified RTMT	27
<hr/>	
CHAPTER 3	System Performance Monitoring 29
Predefined System Objects	29
Voice and Video Monitoring	30
Predefined Cisco Unified Communications Manager Objects	30
Cisco Unified Communications Manager Summary View	36
Call-Processing Activity Monitoring	36
Call-Processing Logs	37
Perform Session Trace	39
Monitor Real-Time Data	39
Monitor Session Trace Data From Local Disk	40
Trace Calls	41
Services Monitoring	44
Service Logs	45
Device Logs	46
Device Monitoring	46
Device Monitoring	46
Find Specific Devices to Monitor	48
View Phone Information	50
View Device Properties	50
Set Up Polling Rate for Devices and Perfmon Counters	51
CTI Application, Device, and Line Monitoring	51

View CTI Manager Information	52
Find CTI Applications to Monitor	52
Find CTI Devices To Monitor	52
Find CTI Lines To Monitor	53
View Application Information	54
Access Learned Pattern and SAF Forwarder Reports for Call Control Discovery	55
Access Called Party Trace Report	57
Intercompany Media Services	58
IME Service Monitoring	58
IME System Performance Monitoring	59
Monitor Intercompany Media Services	60
IM and Presence Monitoring	61
IM and Presence and Cisco Jabber summary monitoring	61
Cisco XCP counters	61
Number of connected XMPP clients	61
Number of connected CAXL clients	62
Number of active outbound SIP subscriptions	62
Number of active inbound SIP subscriptions	62
Number of IM sessions	62
Total IM Packets	63
IMs in last 60 seconds	63
Per user and per session counters	63
IM packets sent per session	64
IM packets received per session	64
Total text conferencing rooms	64
Total adhoc group chat rooms	64
Total persistant chat rooms	65
Per-chat room counters	65
IM packets received per room	65
Number of occupants per room	65
SIP proxy counters	66
Number of idle SIP proxy worker processes	66
Cisco Unity Connection Monitoring	66
Port Monitor	66

Start Cisco Unity Connection Port Monitor Polling 67

CHAPTER 4**Cisco Unified Analysis Manager 69**

- Cisco Unified Analysis Manager Preferences 69
 - FTP Server Setup 69
 - Access FTP Server Options 70
 - Add or Edit FTP Server 70
 - Set Up Mail Server 70
 - Add or Edit Mail Server 71
 - Set Trace Collection Directory 71
- Cisco Unified Analysis Manager Limitations 72
- Cisco Unified Analysis Manager Setup 73
 - Import Device and Group Settings 73
 - Scheduled Trace and Log Collection Job Status Display 73
 - Upload and Transfer Files to FTP Server 74
- Cisco Unified Analysis Manager Tools 74
 - Analyze Call Path Tool 74
 - Analyze Call Path Setup Considerations 75
 - Nodes 80
 - Node Management 80
 - Group Management 82
 - Trace File Repository Management 83
 - Call Record Repository Management 84
 - Define Trace Templates 85
 - Call Definitions 86
 - Trace Collection 86
 - Collect Traces Now 87
 - Schedule Trace Collection 87
 - Schedule Trace Settings and Collection 88
 - Set Trace Levels 88
 - View Configuration 89
- Cisco Unified Analysis Manager Troubleshooting 90

CHAPTER 5**Profiles and Categories 93**

Profiles	93
Add Configuration Profile	93
Restore Configuration Profile	94
Delete Configuration Profile	94
Categories	94
Add Category	94
Rename Category	95
Delete Category	95

CHAPTER 6
Performance Counters 97

Counters	97
Add Counter Using Performance Queries	97
Remove Counter From Performance Monitoring Pane	98
Add Counter Instance	98
Set Up Counter Alert Notification	99
Display Counter Description	100
Local Perfmon Counter Data Logging	100
Start Perfmon Counter Logging	100
Stop Perfmon Counter Logging	101
Configure Data Sample	101
View Counter Data	102
Log files on Perfmon Log Viewer and Microsoft Performance Tool	103
View Log Files on Perfmon Log Viewer	103
Zoom In and Out in Performance Log Viewer	104
View Perfmon Log Files with Microsoft Performance Tool	105
Troubleshooting	106
Perfmon Data Log Troubleshooting	106
Troubleshoot Perfmon Data Logging	113

CHAPTER 7
Alerts 115

Alert Central Displays	115
System Alerts	115
Automatic Trace Download Activation	116
Voice and Video Alerts	117

- IM and Presence Service Alerts 118
- Cisco Unity Connection Alerts 121
- Alert Action Setup 121
 - Access Alert Central and Set Up Alerts 122
 - Set Alert Properties 123
 - Suspend Alerts 126
- Set up alerts for core dump and collect relevant logs 126
 - Enable Email Alert 127
 - Collect logs 127

CHAPTER 8

Traces and Logs 129

- Trace and Log Central 129
 - Preparation 129
 - Import Certificates 129
 - Types of trace support 130
 - Trace and Log Central disk IO and CPU throttling 130
 - View Trace and Log Central Options 130
 - Collect files 131
 - Collect Trace Files 131
 - Query Wizard 134
 - Schedule Trace Collection in Cisco Unified Communications Manager 138
 - Schedule Trace Collection in Cisco Unity Connection 141
 - Start a schedule 144
 - Execute a schedule 145
 - View Trace Collection Status 146
 - Real-Time Trace 147
 - Collect Crash Dump in Cisco Unified Communications Manager 151
 - Collect Crash Dump in Cisco Unity Connection 153
 - Collect Installation Logs 155
 - Collect audit logs 155
 - Display Downloaded Trace Files Using Local Browse 159
 - Display and Download Trace Files in Cisco Unified Communications Manager 160
 - Display And Download Trace Files in Cisco Unity Connection 162
 - Set Trace Collection Attributes 164

View Trace Results	166
Display Report Information	168
Log Compression	169
Edit Trace Settings	169
Log Viewers	170
Messages in AuditLog Viewer	170
Display AuditApp Logs	171
Display Messages in SysLog Viewer	171
Plugins	173
Download and Install Application Plug-Ins	173
Launch Application Plug-Ins	173

APPENDIX A

Performance Counters and Alerts	175
System Counters	175
Cisco Tomcat Connector	175
Cisco Tomcat JVM	176
Cisco Tomcat Web Application	177
Database Change Notification Client	178
Database Change Notification Server	179
Database Change Notification Subscription	180
Database Local DSN	180
DB User Host Information Counters	180
Enterprise Replication DBSpace Monitors	180
Enterprise Replication Perfmon Counters	181
IP	181
Memory	182
Network Interface	185
Number of Replicates Created and State of Replication	186
Partition	187
Process	188
Processor	190
System	191
TCP	193
Thread	194

AXL Web Service	194
Ramfs	195
Voice and Video Counters	195
Cisco Analog Access	195
Cisco Annunciator Device	196
Cisco Call Restriction	196
Cisco CallManager	198
Cisco CallManager System Performance	210
Cisco CTIManager	214
Cisco Dual-Mode Mobility	215
Cisco Extension Mobility	216
Cisco Gatekeeper	217
Cisco H.323	218
Cisco Hunt Lists	219
Cisco HW Conference Bridge Device	220
Cisco IP Manager Assistant	221
Cisco LBM service	222
Cisco Lines	222
Cisco Locations LBM	222
Cisco Locations RSVP	224
Cisco Media Streaming Application	224
Cisco Messaging Interface	229
Cisco MGCP BRI Device	230
Cisco MGCP FXO Device	231
Cisco MGCP FXS Device	231
Cisco MGCP Gateways	232
Cisco MGCP PRI Device	233
Cisco MGCP T1 CAS Device	234
Cisco Mobility Manager	234
Cisco Music On Hold (MOH) Device	236
Cisco MTP Device	237
Cisco Phones	238
Cisco Presence Feature	238
Cisco QSIG Feature	239

Cisco Signaling Performance	239
Cisco SIP	240
Cisco SIP Line Normalization	241
Cisco SIP Normalization	248
Cisco SIP Stack	259
Cisco SIP Station	269
Cisco SW Conf Bridge Device	271
Cisco Telepresence MCU Conference Bridge Device	272
Cisco TFTP Server	273
Cisco Transcode Device	278
Cisco Video Conference Bridge	279
Cisco Web Dialer	280
Cisco WSM Connector	281
IME Client	281
IME Client Instance	283
SAML Single Sign-On	284
IM and Presence Service Counters	285
Cisco Client Profile Agent	285
Cisco Presence Engine	285
Cisco Server Recovery Manager	292
Cisco SIP Proxy	292
Cisco XCP Auth Component	297
Cisco XCP CM	297
Cisco XCP Component Stanza Traffic	298
Cisco XCP JDS	299
Cisco XCP JSM	299
Cisco XCP JSM IQ Namespaces	300
Cisco XCP JSM Session	301
Cisco XCP MA Basic	301
Cisco XCP Router	302
Cisco XCP SIP S2S	302
Cisco XCP S2S	303
Cisco XCP TC	304
Cisco XCP TC Room	304

Cisco XCP WebCM	305
Cisco Unity Connection Counters	306
CUC Data Store	306
CUC Data Store: Databases	306
CUC Digital Notifications	306
CUC Directory Services	307
CUC Feeder	307
CUC Mailbox Sync	308
CUC Message Store	309
CUC Message Store: Databases	312
CUC Personal Call Transfer Rules	312
CUC Phone System	313
CUC Phone System: Ports	315
CUC Replication	316
CUC Replicator: Remote Connection Locations	316
Connection REST Tomcat Connector	317
Connection REST Tomcat JVM	318
Connection REST Tomcat Web Application	319
CUC Sessions: Authz Server	319
CUC Sessions: Calendar Access	320
CUC Sessions: E-Mail Access	320
CUC Sessions: IMAP Server	321
CUC Sessions: RSS	322
CUC Sessions: SMTP Server	323
CUC Sessions: SpeechView Processor	323
CUC Sessions: TRaP	323
CUC Sessions: TTS	324
CUC Sessions: Unified Client	324
CUC Sessions: Video	324
CUC Sessions: Voice	327
CUC Sessions: VUI	329
CUC Sessions: Web	330
CUC Sessions: Web E-Mail Access	331
CUC System Agent	331

CUC VMREST	332
CUC VMREST Container	332
System Alerts	333
AuthenticationFailed	333
CiscoDRFFailure	333
CiscoHAProxyServiceDown	334
CoreDumpFileFound	335
CpuPegging	335
CriticalServiceDown	336
DBChangeNotifyFailure	336
DBReplicationFailure	337
DBReplicationTableOutOfSync	338
HardwareFailure	338
LogFileSearchStringFound	339
LogPartitionHighWaterMarkExceeded	340
LogPartitionLowWaterMarkExceeded	340
LowActivePartitionAvailableDiskSpace	341
LowAvailableVirtualMemory	342
LowInactivePartitionAvailableDiskSpace	343
LowSwapPartitionAvailableDiskSpace	343
ServerDown	344
SparePartitionHighWaterMarkExceeded	345
SparePartitionLowWaterMarkExceeded	345
SyslogSeverityMatchFound	346
SyslogStringMatchFound	347
SystemVersionMismatched	347
TotalProcessesAndThreadsExceededThreshold	348
Voice and Video Alerts	349
BeginThrottlingCallListBLFSubscriptions	349
CallAttemptBlockedByPolicy	349
CallProcessingNodeCpuPegging	350
CARIDSEngineCritical	351
CARIDSEngineFailure	351
CARSchedulerJobFailed	352

CDRAgentSendFileFailed	352
CDRFileDeliveryFailed	353
CDRHighWaterMarkExceeded	354
CDRMaximumDiskSpaceExceeded	354
CiscoElmNotConnected	355
CiscoGraceTimeLeft	355
CiscoNoProvisionTimeout	356
CiscoSystemInDemo	357
CiscoSystemInOverage	357
CiscoSystemSecurityMismatch	358
CodeYellow	358
DDRBlockPrevention	359
DDRDown	360
EMCCFailedInLocalCluster	360
EMCCFailedInRemoteCluster	361
ExcessiveVoiceQualityReports	361
ILSHubClusterUnreachable	362
ILSPwdAuthenticationFailed	363
ILSTLSAuthenticationFailed	363
IMEDistributedCacheInactive	364
IMEOverQuota	364
IMEQualityAlert	365
IMEServiceStatus	366
InsufficientFallbackIdentifiers	367
InvalidCredentials	368
LocationOutOfResource	368
MaliciousCallTrace	369
MediaListExhausted	370
MgcpDChannelOutOfService	370
NumberOfRegisteredDevicesExceeded	371
NumberOfRegisteredGatewaysDecreased	371
NumberOfRegisteredGatewaysIncreased	372
NumberOfRegisteredMediaDevicesDecreased	372
NumberOfRegisteredMediaDevicesIncreased	373

NumberOfRegisteredPhonesDropped	374
RecordingCallSetupFail	374
RecordingGatewayRegistrationRejected	375
RecordingGatewayRegistrationTimeout	375
RecordingGatewaySessionFailed	376
RecordingResourcesNotAvailable	377
RecordingSessionTerminatedUnexpectedly	377
RouteListExhausted	378
RTMTSessionsExceedsThreshold	378
SDLLinkOutOfService	379
SmartLicense_SLR_InEval	379
SmartLicense_SLR_NoProvision_EvalExpired	380
SmartLicense_SLR_ExportControlNotAllowed	381
TCPSetupToIMEFailed	381
TLSConnectionToIMEFailed	382
UserInputFailure	383
IM and Presence Service Alerts	383
CTIGWModuleNotEnabled	383
CTIGWProviderFailedtoOpen	384
CTIGWQBFailedRequest	384
CTIGWSystemError	384
CTIGWUserNotAuthorized	384
CTIGWUserNotLicenced	384
EspConfigAgentFileWriteError	385
EspConfigAgentHighCPUUtilization	385
EspConfigAgentHighMemoryUtilization	385
EspConfigAgentLocalDBAccessError	385
EspConfigAgentMemAllocError	385
EspConfigAgentNetworkOutage	386
EspConfigAgentNetworkRestored	386
EspConfigAgentProxyDomainNotConfigured	386
EspConfigAgentRemoteDBAccessError	386
EspConfigAgentSharedMemoryStaticRouteError	387
ESPConfigError	387

ESPConfigNotFound	387
ESPCreateLockFailed	387
ESPLoginError	387
ESPMallocFailure	388
ESP NAPTRInvalidRecord	388
ESPPassedParamInvalid	388
ESPRegistryError	388
ESPRoutingError	388
ESPSharedMemAllocFailed	389
ESPSharedMemCreateFailed	389
ESPSharedMemSetPermFailed	389
ESPSocketError	389
ESPStatsLogFileOpenFailed	390
ESPStopped	390
ESPVirtualProxyError	390
ESPWrongHostName	390
ESPWrongIPAddress	390
ICSACertificateCASignedTrustCertFound	391
ICSACertificateFingerPrintMisMatch	391
ICSACertificateValidationFailure	391
InterclusterSyncAgentAXLConnectionFailed	391
InterclusterSyncAgentPeerDuplicate	392
LegacyCUPCLogin	392
NotInCucmServerListError	392
PEAutoRecoveryFailed	392
PEDatabaseError	393
PEIDSQueryError	393
PEIDSSubscribeError	393
PEIDStoIMDBDatabaseSyncError	393
PELoadHighWaterMark	394
PEMemoryHighCondition	394
PEPeerNodeFailure	394
PESipSocketBindFailure	394
PEStateDisabled	394

PEStateLocked	395
PEWebDAVInitializationFailure	395
PWSAboveCPULimit	395
PWSAboveSipSubscriptionLimit	395
PWSRequestLimitReached	396
PWSSCBFindFailed	396
PWSSCBInitFailed	396
SRMFailover	396
SRMFailed	396
UASCBFindFailed	397
UASCBGetFailed	397
XcpCmComponentConnectError	397
XcpCmPauseSockets	397
XcpCmStartupError	397
XcpCmXmppdError	398
XCPCConfigMgrConfigurationFailure	398
XCPCConfigMgrHostNameResolutionFailed	398
XCPCConfigMgrJabberRestartRequired	398
XCPCConfigMgrR2RPasswordEncryptionFailed	399
XCPCConfigMgrR2RRequestTimedOut	399
XcpDBConnectError	399
XcpMdnsStartError	399
XcpSIPFedCmComponentConnectError	399
XcpSIPFedCmStartupError	400
XcpSIPGWStackResourceError	400
XcpThirdPartyComplianceConnectError	400
XcpTxtConfDBConnectError	400
XcpTxtConfGearError	401
XcpWebCmComponentConnectError	401
XcpWebCmHttpdError	401
XcpWebCmStartupError	401
XcpXMPPFedCmComponentConnectError	402
XcpXMPPFedCmStartupError	402
Intercompany Media Engine Alerts	402

BannedFromNetwork	402
IMEDistributedCacheCertificateExpiring	403
IMEDistributedCacheFailure	403
IMESdLinkOutOfService	404
InvalidCertificate	405
InvalidCredentials	405
MessageOfTheDay	406
SWUpdateRequired	407
TicketPasswordChanged	407
ValidationsPendingExceeded	408
Cisco Unity Connection Alerts	409
NoConnectionToPeer	409
AutoFailoverSucceeded	409
AutoFailoverFailed	410
AutoFailbackSucceeded	411
AutoFailbackFailed	412
SbrFailed (Split Brain Resolution Failed)	413
DiskConsumptionCloseToCapacityThreshold	413
DiskConsumptionExceedsCapacityThreshold	414
LicenseExpirationWarning	415
LicenseExpired	415
System Error Messages	416
System Error Messages	416



Preface



Note This document may not represent the latest Cisco product information available. You can obtain the most current documentation by accessing the Cisco product documentation page at:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/tsd_products_support_series_home.html

- [About This Guide, on page xix](#)
- [Audience, on page xx](#)
- [Related Documentation, on page xx](#)
- [Conventions, on page xx](#)
- [Communications, Services, and Additional Information, on page xxii](#)
- [Organization, on page xxii](#)

About This Guide

The *Cisco Unified Real-Time Monitoring Tool Administration Guide* provides information about the Cisco Unified Real-Time Monitoring Tool.

Use this guide with the following documentation for your configuration:

Cisco Unified Communications Manager	<i>Cisco Unified Communications Manager System Guide, Cisco Unified Communications Manager Administration Guide, Cisco Unified Serviceability Administration Guide, CDR Analysis and Reporting Administration Guide, and Cisco Unified Communications Manager Call Detail Records Administration Guide</i>
Cisco Unified Communications Manager IM and Presence Service	<i>Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager and Cisco Unified Serviceability Administration Guide</i>
Cisco Business Edition 5000	<i>Cisco Unified Communications Manager System Guide, Cisco Unified Communications Manager Administration Guide, Cisco Unified Serviceability Administration Guide, CDR Analysis and Reporting Administration Guide, Cisco Unified Communications Manager Call Detail Records Administration Guide, Cisco Unity Connection System Administration Guide, and Cisco Unity Connection Serviceability Administration Guide</i>

Cisco Unity Connection

Cisco Unity Connection System Administration Guide and *Cisco Unity Connection Serviceability Administration Guide*

These documents provide the following information:

- Instructions for administering Cisco Unified Communications Manager, Cisco Unified Communications Manager IM and Presence Service, Cisco Business Edition 5000, and Cisco Unity Connection.
- Descriptions of procedural tasks that you can perform by using the administration interface.

Audience

The *Cisco Unified Real-Time Monitoring Tool Administration Guide* provides information for network administrators who are responsible for managing and supporting Cisco Unified Communications Manager, Cisco Business Edition 5000, and Cisco Unity Connection. Network engineers, system administrators, or telecom engineers can use this guide to learn about, and administer, remote serviceability features. This guide requires knowledge of telephony and IP networking technology.

Related Documentation

For additional documentation about Cisco Unified Communications Manager, see the *Cisco Unified Communications Manager Documentation Guide*.

For additional documentation about Cisco Business Edition 5000, see the *Cisco Business Edition 5000 Documentation Guide*.

For additional documentation about Cisco Unity Connection, see the *Cisco Unity Connection Documentation Guide*.

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

Convention	Description
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in screen font .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the Dkey.
◊	Nonprinting characters, such as passwords, are in angle brackets.

Notes use the following conventions:



Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Timesavers use the following conventions:



Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Tips use the following conventions:



Tip Means *the information contains useful tips*.

Cautions use the following conventions:



Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
- To get the business impact you're looking for with the technologies that matter, visit [Cisco Services](#).
- To submit a service request, visit [Cisco Support](#).
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit [Cisco Marketplace](#).
- To obtain general networking, training, and certification titles, visit [Cisco Press](#).
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#).

Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

Cisco Product Security

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

Further information regarding U.S. export regulations may be found at http://www.access.gpo.gov/bis/ear/ear_data.html.

Organization

Administration overview

Overview of Unified RTMT, including browser support.

Getting started

Description of how to install, access, and use the Unified RTMT client.

System performance monitoring

Overview of system performance monitoring in RTMT, including how to manage predefined objects for your system, Cisco Unified Communications Manager, Cisco Intercompany Media Engine, Cisco Unified Communications Manager IM and Presence Service, and Cisco Unity Connection.

Cisco Unified Analysis Manager

Provides information about Cisco Unified Analysis Manager, including procedures to install and configure the Unified Analysis Manager; procedures to add nodes that the Unified Analysis Manager can diagnose; procedures for device management; and information about troubleshooting.

Profile and categories

Provides information about how to manage profiles and categories.

Performance counters

Provides procedures for working with performance monitors, including viewing performance counters and counter descriptions, and perfmon logs.

Alerts

Provides procedures for working with alerts.

Trace and Log Central

Provides information about configuring on-demand trace collection and crash dump files for system services and methods to view the trace files in the appropriate viewer.

(Appendix) Performance counters and alerts

Provides a complete list of performance objects and their associated counters for components of your system.



CHAPTER 1

Administration Overview

- [Cisco Unified Real-Time Monitoring Tool, on page 1](#)
- [Operating System Support, on page 2](#)

Cisco Unified Real-Time Monitoring Tool

The Cisco Unified Real-Time Monitoring Tool, which runs as a client-side application, monitors the real-time behavior of your system components. Unified RTMT uses Hypertext Transfer Protocol Secure (HTTPS) and Transmission Control Protocol (TCP) to monitor the following:

- System performance
- Device status
- Device discovery
- Computer Telephony Integration (CTI) applications

Unified RTMT can connect directly to devices through HTTPS to troubleshoot system problems.



Note Even when Unified RTMT is not running as an application on your desktop, tasks such as alarm and performance monitoring updates continue to take place on the server in the background.

Unified RTMT allows you to perform the following tasks:

- Monitor a set of predefined management objects that monitor the health of the system.
- Generate various alerts, in the form of email messages, for objects when values go above or below user-configured thresholds.
- Collect and view traces in various default viewers that exist in Unified RTMT.
- View syslog messages in SysLog Viewer.
- Work with performance-monitoring counters.
- Unified Communications Manager only: Translate Q931 messages.

A single copy of Unified RTMT that is installed on your computer lets you monitor more than one server or more than one cluster at a time. For example, you can monitor all of the following entities:

- A Unified Communications Manager product on one server.
- Cisco Intercompany Media Engine (Cisco IME) product on one server.
- Cisco Unified Communications Manager IM and Presence Service (IM and Presence Service) product on one server.
- A server on a cluster (to monitor the health of the cluster).

To monitor a product on a different server, you must use a new instance of Unified RTMT.

Operating System Support

You can install Unified RTMT on a computer that is running Windows 98, Windows XP, Windows 2000, Windows Vista, Windows 7 or Linux with KDE or GNOME client. The RTMT is suitable for resolutions of 800*600 and above.

- Windows 8
- Linux with KDE or GNOME client

Consider the following information when you install Unified RTMT:

- Unified RTMT requires at least 128 MB in memory to run on a Windows OS platform.
- Unified RTMT requires at least 300 MB of disk space to run on a Windows and Linux OS platform.
- When you install Unified RTMT on a Windows 8 platform, you will see this User Account Control popup message: “An unidentified program wants to access your computer.” Click **Allow** to continue working with Unified RTMT.
- Unified RTMT runs on 32 bit and 64 bit Windows platforms.



CHAPTER 2

Getting Started

- [Install and Configure Unified RTMT, on page 3](#)
- [Administration Tools, on page 9](#)
- [Uninstall Unified RTMT, on page 27](#)

Install and Configure Unified RTMT

Install Unified RTMT

Before you begin

Before you install Unified RTMT, consider the following:

- Unified RTMT requires at least 128 MB in memory to run on a Windows OS platform; the tool requires at least 300 MB of disk space to run on a Windows/Linux OS platform.



Note The Linux Unified RTMT plugin `CcmServRtmtPlugin.bin` can be installed on RHEL 5, RHEL 6, or higher Linux machines. If you want to install it on a RHEL 4 machine, ensure that the `glibc` (OS library) version is 2.4.x or higher. If the `glibc` version is 2.3.x or earlier, the underlying JRE install fails.

- On a client machine, you can install Unified RTMT downloaded from only one product type. Installing the Unified RTMT client from different product types on the same client machine is not supported.
- The current Unified RTMT download may not support earlier releases of Unified Communications Manager or Cisco Unity Connection. Some releases of Unified Communications Manager may require different versions of Unified RTMT to be installed on your computer (one version per Unified Communications Manager release). Verify that the Unified RTMT version that you install is compatible with the Unified Communications Manager that you are monitoring. If the Unified RTMT version that you are using is not compatible with the server that you want to monitor, the system prompts you to download the compatible version.
- Your computer stores the user preferences, such as the IP address and Unified RTMT frame size, based on the last instance of Unified RTMT that you run.

- To enable the single sign-on feature, see the “Single Sign-On” chapter in *Cisco Unified Communications Manager Features and Services Guide*.
- To enable the SSO feature on Unified RTMT, modify the Windows registry as follows:

```
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Lsa\Kerberos\Value Name:
  allowtgtsessionkey
Value Type: REG_DWORD
Value: 0x01
```

- Windows 7 and above: To use SSO, right-click Unified RTMT and select **Run as administrator**.



Note Only the administrators with Standard Audit Users and Standard CCM Super Users privileges have access to Unified RTMT features. If an application user without these privileges logs into Unified RTMT, some of the features such as Call Control Discovery (CCD) and Service Advertisement Framework (SAF) will not work as expected.



Note On a Linux workstation, run RTMT with root access. Otherwise, when you initially install RTMT, the application will not start.



Note The current Unified RTMT requires JRE to run. Verify that the system has JRE installed (Java 1.8).

Procedure

Step 1

Go to the Plug-ins window of the administration interface for your configuration:

Interface	How to access
Cisco Unified Communications Manager	From Cisco Unified Communications Manager Administration, choose Application > Plugins .
Cisco Business Edition 5000	From Cisco Unified Communications Manager Administration, choose Application > Plugins .
Cisco Unity Connection	From Cisco Unity Connection Administration, choose System Settings > Plugins .

Step 2

Click **Find**.

Step 3

To install Unified RTMT on a client that is running the Microsoft Windows operating system, click the **Download** link for the Real-Time Monitoring Tool - Windows.

To install Unified RTMT on a client that is running the Linux operating system, click the **Download** link for the Real-Time Monitoring Tool - Linux.

Tip When you install Unified RTMT on Windows 7 or later, ensure that you perform the installation as an administrator.

Step 4 Download the executable to the preferred location on your client.

Step 5 To install the Windows version, double-click the Unified RTMT icon that appears on the desktop or locate the directory where you downloaded the file and run the Unified RTMT installation file.

The extraction process begins.

Step 6 To install the Linux version, ensure that the file has execute privileges; for example, enter the following command, which is case sensitive: **chmod +x CcmServRtmtPlugin.bin**

Step 7 After the Unified RTMT welcome window appears, click **Next**.

Step 8 To accept the license agreement, click **I accept the terms of the license agreement**; then, click **Next**.

Step 9 Choose the location where you want to install Unified RTMT. If you do not want to use the default location, click **Browse** and navigate to a different location. Click **Next**.

Step 10 To begin the installation, click **Next**.

The **Setup Status** window appears.

Step 11 To complete the installation, click **Finish**.

Upgrade RTMT



Tip To ensure compatibility, Cisco recommends that you upgrade RTMT after you complete the upgrade on all servers in the cluster.

RTMT saves user preferences and downloaded module jar files locally on the client machine. The system saves user-created profiles in the database, so you can access these items in Unified RTMT after you upgrade the tool.

Before you begin

Before you upgrade to a newer version of RTMT, Cisco recommends that you uninstall the previous version.

Procedure

Step 1 From Unified Communications Manager Administration, choose **Application > Plugins**.

Step 2 Click **Find**.

Step 3 Perform one of the following actions:

- To install the tool on a computer that is running the Microsoft Windows operating system, click the **Download** link for the Cisco Unified Real-Time Monitoring Tool - Windows.
- To install the tool on a computer that is running the Linux operating system, click the **Download** link for the Cisco Unified Real-Time Monitoring Tool - Linux.

Step 4 Download the installation file to your preferred location.

- Step 5** Locate and run the installation file.
The extraction process begins.
- Step 6** In the RTMT welcome window, click **Next**.
- Step 7** Because you cannot change the installation location for upgrades, click **Next**.
The Setup Status window appears; do not click Cancel.
- Step 8** In the **Maintenance Complete** window, click **Finish**.
-

Launch Unified RTMT

Before you begin

For single sign-on in Windows 8.1, run Unified RTMT as an administrator.

For single sign-on in Windows 8.1 or Windows 10, run Unified RTMT as an administrator.



Note If your Root or Intermediate CA Certificate uses the RSASSA-PSS signature algorithm, do not sign the Tomcat certificate with this CA; otherwise, RTMT will not launch. This is because the TLS versions through 1.2 does not support the RSASSA-PSS Signature Algorithm and a bug is opened against Java to add this support in a future TLS version.



Note Ensure that all of the required hostnames for the Unified Communications Manager clusters are reachable from your local machine for the RTMT functionalities to work properly.

This requires adding the hostnames to the host file on the local machine. For example:

- For Unified RTMT running on Windows OS platform, use the following format to update the host file located at `C:\Windows\System32\drivers\etc\hosts`: **<ServerIP> <Hostname> <FQDN>**
- For Unified RTMT running on Linux OS platform, use the following format to update the host file located at
`->/etc/hosts`: **<ServerIP> <Hostname> <FQDN>**

Procedure

- Step 1** After you install the plug-in, open Unified RTMT.
- If you have a Windows 8.1 client and you want to use the single sign-on feature, right click the Unified RTMT shortcut on your desktop or start menu and click **Run as Administrator**.
- If you have a Windows 8.1 or Windows 10 client and you want to use the single sign-on feature, right click the Unified RTMT shortcut on your desktop or start menu and click **Run as Administrator**. Please allow some time for the application to load and relaunch it if you choose to synchronize the time zone.

Important Before launching RTMT on Windows 8.1, ensure that User Account Control (UAC) feature is disabled. For more information on UAC feature, refer <https://docs.microsoft.com/en-us/windows/desktop/uxguide/winenv-uac>.

Step 2 In the **Host IP Address** field, enter either the IP address or hostname of the node or (if applicable) the node in a cluster.

Step 3 Click **OK**.

- If the single sign-on feature is enabled, Unified RTMT does not prompt for the username and password; proceed to step 8.
- If the single sign-on is not enabled, Unified RTMT displays another window prompting for the username and password. Enter the details as given in the following steps.

Step 4 In the **User Name** field, enter the Administrator username for the application.

Step 5 In the **Password** field, enter the Administrator user password that you established for the username.

Note If the authentication fails or if the node is unreachable, the tool prompts you to reenter the node and authentication details, or you can click the Cancel button to exit the application. After the authentication succeeds, Unified RTMT launches the monitoring module from local cache or from a remote node, when the local cache does not contain a monitoring module that matches the back-end version.

Step 6 When prompted, add the certificate store by clicking **Yes**.

Unified RTMT starts.

Note If you sign in using the single sign-on feature, Unified RTMT prompts once for a username and password after you click any one of the following menus:

- **System > Performance > Performance log viewer**
- **System > Tools > Trace and Log Central**
- **System > Tools > Job status**
- **System > Tools > Syslog Viewer**
- **CallManager > CallProcess > Session Trace**
- **CallManager > CallProcess > Called Party Tracing**
- **CallManager > Report > Learned Pattern**
- **Voice/Video > Report > SAF forwarders**
- **Analysis Manager**

What to do next

You can create a user with a profile that is limited only to Unified RTMT usage. The user will have full access to Unified RTMT but will not have permission to administer a node.

You can create a Unified RTMT user by adding a new application user in the administration interface and adding the user to the predefined Standard RealtimeAndTraceCollection group.

For complete instructions for adding users and user groups, see the *Cisco Unified Communications Manager Administration Guide* and .

Related Topics

[Run a Program as an Administrator](#), on page 8

Run a Program as an Administrator

Follow this procedure to run a program as an administrator in Windows 7 and later.



Note To use SSO with Unified RTMT on Windows, run Unified RTMT as an administrator.

Before you begin

Be aware of the following behavior:

- If you're using single sign-on (SSO), allow time for Unified RTMT to load.
- For the time zone synchronization prompt, selecting **Yes** causes Unified RTMT to close itself. After this happens, you must manually restart the program as an administrator.

Procedure

- Step 1** Locate the program shortcut.
- Step 2** Right-click the shortcut.
- Step 3** Perform one of the following actions:
- Right-click the shortcut and select **Run as administrator** (Windows 7 and 8.x).
 - Right-click the shortcut and select **More > Run as administrator** (Windows 10).
 - **a.** Right-click the shortcut.
 - **b.** Select **Properties**.
 - **c.** Under the shortcut tab, click **Advanced**.
 - **d.** Check the **Run as administrator** check box.
-

Multiple installations of Unified RTMT

A single copy of Unified RTMT that is installed on your computer lets you monitor only one server or one cluster at a time. For example, you can monitor either of the following entities:

- An IM and Presence Service on one node.
- A node on a cluster to monitor the health of the cluster.

To monitor a product on a different node, you must first sign off the node before you can sign on to the other node.



Note Beware of the following limitations:

To monitor clusters that are running different versions of the IM and Presence service simultaneously, you must install multiple versions of Unified RTMT (one version per IM and Presence release). If you install multiple versions of the plug-in, you can install the versions on the same client as long as the version exist in different folders. If the installation detects another version in the folder, a message displays. To continue the installation, install the version in a different folder.

When you install multiple copies of Unified RTMT on a single computer, you must install Unified RTMT in different folders. Cisco recommends that you install no more than four copies of Unified RTMT on a computer.

Because installing another copy of Unified RTMT overwrites the shortcut icon, you should complete the following tasks:

1. Create another icon by creating a shortcut to `jrtmt.exe` in the folder with the previous installation.
2. Rename the icon accordingly.

If the installation detects another version in the selected folder, a message displays. To continue the installation, install the version in a different folder.



Note Your computer stores the user preferences, such as the IP address and Unified RTMT frame size, from the Unified RTMT client that last exits.

Administration Tools

System Interface

The Unified RTMT interface consists of the following components:

- **Menu bar:** the menu bar includes some or all of the following options, depending on your configuration:

File

Allows you to save, restore, and delete existing RTMT profiles, monitor Java Heap Memory Usage, go to the Serviceability Report Archive window in Cisco Unified Serviceability, log off, or exit RTMT.



-
- Note**
1. The RTMT menu option **File > Cisco Unified Reporting** lets you access Cisco Unified Reporting from RTMT. You can use the Cisco Unified Reporting application to snapshot cluster data for inspection or troubleshooting. For more information, see the *Cisco Unified Reporting Administration Guide*.
 2. As part of creating the heap dump faster, a core(core.jvm.core) file is generated to make the heap dump creation process (generation) fast.
-

System

Allows you to monitor system summary, monitor server resources, work with performance counters, work with alerts, collect traces, and view syslog messages.

Voice/Video

Allows you to view Unified Communications Manager summary information on the server; monitor call-processing information; and view and search for devices, monitor services, and CTI.

IM and Presence

Allows you to view IM and Presence Service and Cisco Jabber summary information on the server.

Cisco Unity Connection

Allows you to view the Port Monitor tool.

IME Service

Allows you monitor server and network activity of the Cisco Intercompany Media Engine server.

Edit

Allows you to configure categories (for table format view), set the polling rate for devices and performance monitoring counters, hide the quick launch channel, and edit the trace setting for RTMT.

Window

Allows you to close a single RTMT window or all RTMT windows.

Application

Depending on your configuration, allows you to browse the applicable web pages for administration interfaces, Cisco Unified Serviceability, and Cisco Unity Connection Serviceability.

Help

Allows you to access RTMT online help documentation and to view the RTMT version.

- **Quick Launch channel:** Pane that displays information about the server or information about the applications. The tab contains groups of icons that you can click to monitor various objects.
- **Monitor pane:** Pane where monitoring results are displayed.

Performance Monitoring

Unified Communications Manager and Cisco Unity Connection directly update Performance counters (called perfmon counters). The counters contain simple, useful information about the system and devices on the system, such as number of registered phones, number of active calls, number of available conference bridge resources, and voice messaging port usage.

For Unified Communications Manager, the Cisco CallManager object contains most of the Unified Communications Manager performance counters, and these counters have only one instance. The instance-based counters that belong to the other objects can have zero or more instances. For example, if two phones are registered to Unified Communications Manager, two instances of each counter that belong to the Cisco Phones object exist.

You can monitor the performance of the components of the system and the components for the application on the system by choosing the counters for any object by using the Cisco Unified Real-Time Monitoring Tool. The counters for each object display when the folder expands.

You can log perfmon counters locally on the computer and use the performance log viewer in Unified RTMT to display the perfmon CSV log files that you collected or the Real-Time Information Server Data Collection (RISDC) perfmon logs.

RTMT integrates with existing software for performance monitoring:

- RTMT integrates with your administration and serviceability software.
- RTMT displays performance information for all system components.

RTMT provides alert notifications for troubleshooting performance. It also periodically polls performance counter to display data for that counter. You can choose to display perfmon counters in a chart or table format.

Performance monitoring allows you to perform the following tasks:

- Monitor performance counters, including all the Unified Communications Manager servers in a cluster (if applicable), TFTP servers, and database servers.
- Continuously monitor a set of preconfigured objects and receive notification in the form of an email message.
- Associate counter threshold settings to alert notification. An email or popup message provides notification to the administrator.
- Save and restore settings, such as counters that are being monitored, threshold settings, and alert notifications, for customized troubleshooting tasks.
- Display up to six perfmon counters in one chart for performance comparisons.
- Use performance queries to add a counter to monitor.

System summary status

The Real-Time Monitoring Tool provides a set of default monitoring objects that help you to monitor the health of the system. Default objects include performance counters or critical event status for the system and other supported services. The system summary in Unified RTMT allows you to monitor important common information in a single monitoring pane. In system summary, you can view information about the following predefined objects:

- Virtual Memory usage

- CPU usage
- Common Partition usage
- Alert History Log

Server Status Monitoring

The Server category monitors CPU and memory usage, processes, disk space usage, and critical services for the different applications on the server.

The CPU and Memory monitors provide information about the CPU usage and Virtual memory usage on each server. For each CPU on a server, the information includes the percentage of time that each processor spends executing processes in different modes and operations (User, Nice, System, Idle, IRQ, SoftIRQ, and IOWait). The percentage of CPU equals the total time that is spent executing in all the different modes and operations excluding the Idle time. For memory, the information includes the Total, Used, Free, Shared, Buffers, Cached, Total Swap, Used Swap, and Free Swap memory in Kbytes, and the percentage of Virtual Memory in Use.

The Process monitor provides information about the processes that are running on the system. Unified RTMT displays the following information for each process: process ID (PID), CPU percentage, Status, Shared Memory (KB), Nice (level), VmRSS (KB), VmSize (KB), VmData (KB), Thread Count, Page Fault Count, and Data Stack Size (KB).

The Disk Usage monitoring category charts the percentage of disk usage for the common and swap partitions. This category also displays the percentage of disk usage for each partition (Active, Boot, Common, Inactive, Swap, SharedMemory, Spare) in each host.



Note If more than one logical disk drive is available in your system, the system stores CTI Manager traces in the spare partition on the first logical disk and Cisco CallManager traces on the second logical disk. Unified RTMT monitors the disk usage for the spare partition in the **Disk Usage** window.

The Critical Services monitoring category provides the name of the critical service, the status (whether the service is up, down, activated, stopped by the administrator, starting, stopping, or in an unknown state), and the elapsed time during which the services are up and running on the system.

For a specific description of each state, see the following table.

Table 1: Status of Critical Services

Status of Critical Service	Description
starting	The service currently exists in start mode, as indicated in the Critical Services pane and in Control Center in Cisco Unified Serviceability
up	The service currently runs, as indicated in the Critical Services pane and in Control Center in Cisco Unified Serviceability.
stopping	The service currently remains stopped, as indicated in the Critical Services pane and in Control Center in Cisco Unified Serviceability.

Status of Critical Service	Description
down	<p>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.</p> <p>The CriticalServiceDown alert is generated when the service status equals down.</p>
stopped by Admin	<p>You performed a task that intentionally stopped the service; for example, the service stopped because you backed up or restored your system, performed an upgrade, or stopped the service in Cisco Unified Serviceability or the CLI.</p> <p>The Critical Services pane indicates the status.</p>
not activated	<p>The service does not exist in a currently activated status, as indicated in the Critical Services pane and in Service Activation in Cisco Unified Serviceability.</p>
unknown state	<p>The system cannot determine the state of the service, as indicated in the Critical Services pane.</p>

Performance Counter Interface

RTMT contains ready-to-view, predefined performance counters. You can also select, and add counters to monitor in RTMT using performance queries.

RTMT displays performance counters in chart, or table format. Chart format presents a miniature window of information. You can display a particular counter by double-clicking the counter in the perfmon monitoring pane.

Attributes for predefined performance counters, such as format and category, remain fixed. You can define attributes for counters that you configure in RTMT. The chart view represents the default, hence, you can configure the performance counters to display in table format when you create a category.

Category Tabs

A category comprises a group of monitored performance counters. A tab in the RTMT monitoring pane contains the category name. All performance counters that are monitored in this tab belong to a category. RTMT displays any categories that you access during an RTMT session in the bottom toolbar.

The system polls the performance counters in the tab at the same rate, with each category that is configured to have its own polling rate.

You can create custom categories in the RTMT monitoring pane to view information that helps you troubleshoot specific performance, system, or device problems. If your system is experiencing performance problems with specific objects, create custom categories to monitor the performance of the counters within the object. If the system is experiencing problems with specific devices, create custom categories to monitor the devices in your system. In addition, you can create alert notifications for counters and gateways in these custom categories. To create custom categories, you add a new category tab. When the tab is created, you specify the specific performance counters, devices, and alerts within that tab and then save your custom category by using Profile.

Sample Rate

The application polls the counters, devices, and gateway ports to gather status information.

The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate for the AMC (Alert Manager and Collector) service parameter changes, the polling rate in the precanned window also updates. In addition, the local time of the RTMT client application and not the backend server time, provides the basis for the time stamp in each chart. For more information on Service Parameters, refer to *Cisco Unified Communications Manager Administration Guide* or *Cisco Unity Connection System Administration Guide*.

In the RTMT monitoring pane, you configure the polling intervals for the applicable performance counters, devices, and gateway ports for each category tab that you create.



Note High-frequency polling rate affects the performance on the server. The minimum polling rate for monitoring a performance counter in chart view is 5 seconds; the minimum rate for monitoring a performance counter in table view is 5 seconds. The default for both specifies 10 seconds.

Zoom In on Perfmon Counter

To get a closer look at perfmon counters, you can zoom in on a perfmon monitor counter in the RTMT.

Procedure

Step 1

To zoom in on a counter, perform one of the following tasks:

- To zoom in predefined objects, such as System Summary, perform one of the following actions:
 - Drag the mouse over the plot area in the counter to frame the data and release the mouse button. The counter zooms in the chart.
 - Click the counter. The counter zooms in.
- To zoom counters in the Performance pane, perform one of the following actions (and resize the window, if necessary):
 - Double-click the counter that you want to zoom. The box with the counter appears highlighted and the Zoom window launches. The minimum, maximum, average, and last fields show the values for the counter since the monitoring began for the counter.
 - Click the counter to select the counter to zoom. The box with the counter appears highlighted.
 - Right-click the counter and select **Zoom Chart** or choose **System > Performance > Zoom Chart**. The **Zoom** window launches. The minimum, maximum, average, and last fields show the values for the counter since the monitoring began for the counter.

Step 2

To zoom out a counter, perform one of the following actions:

- To zoom out predefined objects, such as System Summary, click the counter and press **Z** in the active counter to return the counter to original size.

- To zoom out counters in the Performance pane, click **OK** to close the **Zoom** window.
-

Highlight Charts and Graphs

The highlight feature helps to distinguish hosts and counters when multiple nodes or counters display on color-coded graphs. This feature is active in the System Summary, CPU and Memory, Disk Usage, and Performance Log Viewer windows.

Procedure

- Step 1** To highlight charts and graphs, perform one of the following tasks:
- To highlight charts and graphs for predefined objects, such as System Summary, right-click in a plot area to highlight the nearest data series or point.
 - To highlight charts and graphs in the performance log viewer, perform one of the following tasks:
 - Right-click any color code in the table below the chart in the Performance Log Viewer and choose **Highlight** to highlight the data series for that counter.
 - Right-click any color code in the table below the chart in the Performance Log Viewer and choose **Change Color** to select a different color for the counter.
- Step 2** To return a highlighted item to its original appearance in the Performance Log Viewer, select another item to highlight.
-

Counter Properties

Counter properties allow you to display a description of the counter and configure data-sampling parameters.

The Counter Property window contains the option to configure data samples for a counter. The performance counters that display in the Unified RTMT performance monitoring pane contain green dots that represent samples of data over time. You can configure the number of data samples to collect and the number of data points to show in the chart. After the data sample is configured, view the information by using the View All Data/View Current Data menu option to view the data that a perfmon counter collected.

Related Topics

[Performance Counters and Alerts](#), on page 175

Alert Notification for Counters

When you activate the Alert Notification feature, the application notifies you of system problems. Perform the following configuration setup to activate alert notifications for a system counter:

1. From the RTMT Perfmon Monitoring pane, choose the system perfmon counter.
2. Set up an email or a message pop-up window for alert notification.
3. Determine the threshold for the alert (for example, an alert activates when calls in progress exceed the threshold of over 100 calls or under 50 calls).
4. Determine the frequency of the alert notification (for example, the alert occurs once or every hour).

- Determine the schedule for when the alert activates (for example, on a daily basis or at certain times of the day).

Trace and Log Central

The Trace and Log Central feature in RTMT allows you to configure on-demand trace collection for a specific date range or an absolute time. You can collect trace files that contain search criteria that you specify and save the trace collection criteria for later use, schedule one recurring trace collection and download the trace files to a SFTP or FTP server on your network, or collect a crash dump file.



Note From Cisco Unified Serviceability, you can also edit the trace setting for the traces on the node that you have specified. Enabling trace settings decreases system performance; therefore, enable Trace only for troubleshooting purposes.

After you collect the files, you can view them in the appropriate viewer within the real-time monitoring tool. You can also view traces on the node without downloading the trace files by using the remote browse feature. You can open the trace files by either selecting the internal viewer that is provided with Unified RTMT or choosing an appropriate program as an external viewer.



Note

- To use the Trace and Log Central feature, make sure that RTMT can directly access the node or all of the nodes in a cluster without Network Access Translation (NAT). If you have set up a NAT to access devices, configure the nodes with a hostname instead of an IP address, and make sure that the hostnames and their routable IP address are in the DNS node or host file.
- For devices that support encryption, the SRTP keying material doesn't display in the trace file.

Related Topics

[Cisco Unified Analysis Manager Setup](#), on page 73

Trace Files Collection, Throttling, and Compression

The Collect Files option in Trace and Log Central collects traces for services, applications, endpoints, and system logs on the server or on one or more servers in the cluster.



Note The services that you have not activated also appear, so you can collect traces for those services.

RTMT Trace and Log Central Disk I/O and CPU Throttling

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

When you make a request for an on-demand operation when the call processing node is running under high I/O conditions, the system displays a warning that gives you the opportunity to abort the operation. You can configure the I/O rate threshold values that control when the warning displays with the following service parameters (in Cisco RIS Data Collector service):

- TLC Throttling CPU Goal
- TLC Throttling IOWait Goal

The system compares the values of these parameters against the actual system CPU and IOWait values. If the goal (the value of the service parameter) is lower than the actual value, the system displays the warning.

Configuration Profiles

You can use RTMT to connect to a server or to any server in a Unified Communications Manager cluster (if applicable). After you log in to a server, RTMT launches the monitoring module from the local cache or from a remote server when the local cache does not contain a monitoring module that matches the back-end version.

RTMT includes a default configuration that is called Default. The first time that you use RTMT, it uses the Default profile and displays the system summary page in the monitor pane.

Unified Communications Manager clusters only: Default profile also dynamically monitors all registered phones for all Unified Communications Manager servers in a cluster. If your cluster contains five configured Unified Communications Manager servers, CM-Default displays the registered phones for each server in the cluster, as well as calls in progress and active gateway ports and channels.

You can configure RTMT to display the information that interests you, such as different performance counters for different features, in the monitor pane of RTMT and save the framework of your configuration in a profile. You can then restore the profile at a later time during the same session or the next time that you log in to RTMT. By creating multiple profiles, so each profile displays unique information, you can quickly display different information by switching profiles.



Note If you are running the RTMT client and monitoring performance counters during a Unified Communications Manager upgrade, the performance counters will not update during and after the upgrade. To continue monitoring performance counters accurately after the Unified Communications Manager upgrade completes, you must either reload the RTMT profile or restart the RTMT client.

Related Topics

[Add Configuration Profile](#), on page 93

Categories

Categories allow you to organize objects in RTMT, such as performance monitoring counters and devices. For example, the default category under performance monitoring, RTMT allows you to monitor six performance monitoring counters in graph format. If you want to monitor more counters, you can configure a new category and display the data in table format.

If you perform various searches for devices, for example, for phones, gateways, and so on, you can create a category for each search and save the results in the category.



Note Changes to the profile settings for the default profile on IM and Presence Service are not transferred to Unified Communications Manager. IM and Presence Service profiles are renamed with the prefix “Presence_”.

Related Topics

[Add Category](#) , on page 94

Alerts

The system generates alert messages to notify administrators when a predefined condition is met, such as when an activated service goes from up to down. Alerts can be sent out as email or epage.

Unified RTMT, which supports alert defining, setting, and viewing, contains preconfigured and user-defined alerts. Although you can perform configuration tasks for both types, you cannot delete preconfigured alerts (whereas you can add and delete user-defined alerts).

Alert options

The Alert menu (**System > Tools > Alert**) comprises the following menu options:

- Alert Central: This option comprises the history and current status of every alert in the system.



Note You can also access Alert Central by selecting the Alert Central icon in the hierarchy tree in the system drawer.

- Set Alert/Properties: This menu option allows you to set alerts and alert properties.
- Remove Alert: This menu category allows you to remove an alert.
- Enable Alert: With this menu category, you can enable alerts.
- Disable Alert: You can disable an alert with this category.
- Suspend cluster/Node Alerts: This menu category allows you to temporarily suspend alerts on a particular IM and Presence node or on the entire cluster.
- Clear Alerts: This menu category allows you to reset an alert (change the color of an alert item from red to black) to signal that an alert has been taken care of. After an alert has been raised, its color automatically changes to in Unified RTMT and stays that way until you manually clear the alert.
- Clear All Alerts: This menu category allows you to clear all alerts.
- Reset all Alerts to Default Config: This menu category allows you to reset all alerts to the default configuration.
- Alert Detail: This menu category provides detailed information on alert events.
- Config Email Server: In this category, you can configure your email server to enable alerts.
- Config Alert Action: This category allows you to set actions to take for specific alerts; you can configure the actions to send the alerts to desired email recipients.

In Unified RTMT, you configure alert notification for perfmon counter value thresholds and set alert properties for the alert, such as the threshold, duration, frequency, and so on.

You can locate Alert Central under the Tools hierarchy tree in the quick launch. Alert Central provides both the current status and the history of all the alerts in the system.

Alert Fields

You can configure both preconfigured and user-defined alerts in Unified RTMT. You can also disable both preconfigured and user-defined alerts in Unified RTMT. You can add and delete user-defined alerts in the performance-monitoring window; however, you cannot delete preconfigured alerts.



Note Severity levels for Syslog entries match the severity level for all Unified RTMT alerts. If Unified RTMT issues a critical alert, the corresponding Syslog entry also specifies critical.

The following table provides a list of fields that you may use to configure each alert; users can configure preconfigured fields, unless otherwise noted.

Table 2: Alert Customization

Field	Description	Comment
Alert Name	High-level name of the monitoring item with which Unified RTMT associates an alert	Descriptive name. For preconfigured alerts, you cannot change this field. See topics related to Alert Central displays for a list of preconfigured alerts.
Description	Description of the alert	You cannot edit this field for preconfigured alerts. See topics related to Alert Central displays for a list of preconfigured alerts.
Performance Counter(s)	Source of the performance counter	You cannot change this field. You can associate only one instance of the performance counter with an alert.
Threshold	Condition to raise alert (value is...)	Specify up < - > down, less than #, %, rate greater than #, %, rate. This field is applicable only for alerts based on performance counters.
Value Calculated As	Method used to check the threshold condition	Specify value to be evaluated as absolute, delta (present - previous), or % delta. This field is applicable only for alerts based on performance counters.
Duration	Condition to raise alert (how long value threshold has to persist before raising alert)	Options include the system sending the alert immediately or after a specified time that the alert has persisted. This field is applicable only for alerts based on performance counters.

Field	Description	Comment
Number of Events Threshold	Raise alert only when a configurable number of events exceeds a configurable time interval (in minutes).	For ExcessiveVoiceQualityReports, the default thresholds equal 10 to 60 minutes. For RouteListExhausted and MediaListExhausted, the defaults equal 0 to 60 minutes. This field is applicable only for event based alerts.
Node IDs (Applies to Unified Communications Manager)	Cluster or list of servers to monitor	Unified Communications Manager servers, CiscoTFTP server, or first server. This field is applicable only for non-clusterwide alerts. Note When you deactivate both the CiscoCallManager and CiscoTFTP services of a server, the system considers that server as removed from the currently monitored server list. When you reactivate both CiscoCallManager and CiscoTFTP services, that server is added back, and its settings are restored to default values.
Alert Action ID	ID of alert action to take (System always logs alerts no matter what the alert action.)	Alert action is defined first (see the Alert Customization topic). A blank field indicates that e-mail is disabled.
Enable Alerts	Enable or disable alerts.	Options include enabled or disabled.
Clear Alert	Resets alert (change the color of an alert item from red to black) to signal that the alert is resolved	After an alert is raised, its color automatically changes to black and remains until you manually clear the alert. Use Clear All to clear all alerts.

Field	Description	Comment
Alert Details (Applies to Unified Communications Manager)	Displays the detail of an alert (not configurable)	For ExcessiveVoiceQualityReports, RouteListExhausted, and MediaListExhausted, up to 30 current event details display in the current monitoring interval if an alert is raised in the current interval. Otherwise, the previous 30 event details in the previous interval displays. For DChannel OOS alert, the list of outstanding OOS devices at the time the alert was raised appears.
Alert Generation Rate	How often to generate alert when alert condition persists	Specify every X minutes. (Raise alert once every X minutes if condition persists.) Specify every X minutes up to Y times. (Raise alert Y times every X minutes if condition persists.)
User Provide Text	Administrator to append text on top of predefined alert text	—
Severity	For viewing purposes (for example, show only Sev. 1 alerts)	Specify defaults that are provided for predefined (for example, Error, Warning, Information) alerts.

Related Topics

[Performance Counters and Alerts](#), on page 175

Alert Logs

The alert log stores the alert, which is also stored in memory. The memory is cleared at a constant interval, leaving the last 30 minutes of data in the memory. When the service starts or restarts, the last 30 minutes of the alert data load into the memory by the system reading from the alert logs on the server or on all servers in the cluster (if applicable). The alert data in the memory is sent to the RTMT clients on request.

Upon RTMT startup, RTMT shows all logs that occurred in the last 30 minutes in the Alert Central log history. The alert log is periodically updated, and new logs are inserted into the log history window. After the number of logs reaches 100, RTMT removes the oldest 40 logs.

The following filename format for the alert log applies: `AlertLog_MM_DD_YYYY_hh_mm.csv`.

The alert log includes the following attributes:

- Time Stamp: Time when RTMT logs the data
- Alert Name: Descriptive name of the alert
- Node: Server name for where RTMT raised the alert
- Alert Message: Detailed description about the alert

- Type: Type of the alert
- Description: Description of the monitored object
- Severity: Severity of the alert
- PollValue: Value of the monitored object where the alert condition occurred
- Action: Alert action taken
- Group ID: Identifies the source of the alert

The first line of each log file comprises the header. Details of each alert are written in a single line, separated by a comma.

Log Partition Monitoring Tool

Log Partition Monitoring (LPM), which is installed automatically with the system, uses configurable thresholds to monitor the disk usage of the log partition on a server. The Cisco Log Partition Monitoring Tool service starts automatically after installation of the system.

Every 5 minutes, Log Partition Monitoring uses the following configured thresholds to monitor the disk usage of the log partition and the spare log partition on a server:

- `LogPartitionLowWaterMarkExceeded` (% disk space): When the disk usage is above the percentage that you specify, LPM sends out an alarm message to syslog and an alert to RTMT Alert central. To save the log files and regain disk space, you can use trace and log central option in RTMT.
- `LogPartitionHighWaterMarkExceeded` (% disk space): When the disk usage is above the percentage that you specify, LPM sends an alarm message to syslog and an alert to RTMT Alert central.
- `SparePartitionLowWaterMarkExceeded` (% disk space): When the disk usage is above the percentage that you specify, LPM sends out an alarm message to syslog and an alert to RTMT Alert central. To save the log files and regain disk space, you can use trace and log central option in RTMT.
- `SparePartitionHighWaterMarkExceeded` (% disk space): When the disk usage is above the percentage that you specify, LPM sends a n alarm message to syslog and an alert to RTMT Alert central.

In addition, Cisco Log Partitioning Monitoring Tool service checks the server every 5 seconds for newly created core dump files. If new core dump files exist, Cisco Log Partitioning Monitoring Tool service sends a `CoreDumpFileFound` alarm and an alert to Alert Central with information on each new core file.

To utilize log partition monitor, verify that the Cisco Log Partitioning Monitoring Tool service, a network service, is running on Cisco Unified Serviceability on the server or on each server in the cluster (if applicable). Stopping the service causes a loss of feature functionality.

When the log partition monitoring services starts at system startup, the service checks the current disk space utilization. If the percentage of disk usage is above the low water mark, but less than the high water mark, the service sends a alarm message to syslog and generates a corresponding alert in RTMT Alert central.

To configure Log Partitioning Monitoring, set the alert properties for the `LogPartitionLowWaterMarkExceeded` and `LogPartitionHighWaterMarkExceeded` alerts in Alert Central.

To offload the log files and regain disk space on the server, you should collect the traces that you are interested in saving by using the Real-Time Monitoring tool.

If the percentage of disk usage is above the high water mark that you configured, the system sends an alarm message to syslog, generates a corresponding alert in RTMT Alert Central, and automatically purges log files until the value reaches the low water mark.



Note Log Partition Monitoring automatically identifies the common partition that contains an active directory and inactive directory. The active directory contains the log files for the current installed version of the software (Unified Communications Manager or Cisco Unity Connection), and the inactive directory contains the log files for the previous installed version of the software. If necessary, the service deletes log files in the inactive directory first. The service then deletes log files in the active directory, starting with the oldest log file for every application until the disk space percentage drops below the configured low water mark. The service does not send an e-mail when log partition monitoring purges the log files.

After the system determines the disk usage and performs the necessary tasks (sending alarms, generating alerts, or purging logs), log partition monitoring occurs at regular 5 minute intervals.

Cisco Unified Analysis Manager

The Cisco Unified Analysis Manager, a tool included with the Cisco Unified Real-Time Monitoring Tool, is used to perform troubleshooting operations. When the Unified Analysis Manager is launched, it collects troubleshooting information from your system and provides an analysis of that information. You can use this information to perform your own troubleshooting operation or to send the information to Cisco Technical Assistance for analysis.

The Unified Analysis Manager application is installed as an option when you install the RTMT software. You can access the Unified Analysis Manager interface from the RTMT main menu and quick launch channel.

After it is installed, the application can identify the supported Unified Communications (UC) products and applications that you have in your system and troubleshoot call failures across these UC applications, collecting trace and log files.

The Unified Analysis Manager supports the following products:

- Unified Communications Manager
- Cisco Unified Contact Center Enterprise (Unified CCE)
- Cisco Unified Contact Center Express (Unified CCX)
- Cisco IOS Voice Gateways (37xx, 28xx, 38xx, 5350XM, 5400XM) IOS Release PI 11
- Cisco Unity Connection
- IM and Presence Service

The three primary components of the Unified Analysis Manager interface are as follows:

- **Administration:** The administration component lets you import device and group configuration from an external file and provide a status of jobs run by the Unified Analysis Manager.
- **Inventory:** The inventory component is used to identify all of the devices in your system that can be accessed and analyzed by the Unified Analysis Manager.
- **Tools:** The tools component contains all of the functions that Unified Analysis Manager supports. This includes configuring traces settings, collecting logs, and viewing configurations.

Related Topics

[View Trace and Log Central Options](#), on page 130

Services, Servlets, and Service Parameters

To support the Unified RTMT client, there are a number of services that need to be active and running on the server. Unified RTMT uses the following services and servlets:

- Cisco AMC service: This service starts up automatically after the installation and allows Unified RTMT to retrieve real-time information that exists on nodes in the cluster. The IM and Presence service automatically assigns the first node as the primary collector. For Unified RTMT to continue to retrieve information when the primary collector fails, you must configure a subsequent node as the failover collector in Service Parameters in the administration interface.

The following list comprises some Cisco AMC service parameters that are associated with Unified RTMT. For the latest list of parameters, select **System > Service Parameters** in the administrative interface. Then, select the server and the Cisco AMC service.

- Primary Collector
- Failover Collector
- Data Collection Enabled
- Data Collection Polling Rate
- Server Synchronization Period
- RMI Registry Port Number
- RMI Object Port Number
- Logger Enabled
- Unified Communications Manager: Alarm Enabled
- Unified Communications Manager: AlertMgr Enabled
- Cisco Unity Connection: PerfMon Log Deletion Age
- Cisco Unity Connection: AlertMgr Enabled

For information about these service parameters, select the ? button that displays in the Service Parameter configuration window of the administrative interface.

The following list comprises some network services and servlets that are associated with Unified RTMT. In Cisco Unified Serviceability, select **Tools > Control Center - Network Services** to view these services.

- Cisco CallManager Serviceability RTMT: Supports the Unified RTMT; this service starts up automatically after the installation.
- Cisco RIS Data Collector: The Real-time Information Server (RIS) maintains real-time information such as performance counter statistics, critical alarms generated, and so on. The Cisco RIS Data Collector service provides an interface for applications, such as Real-Time Monitoring Tool, SOAP applications, and AlertMgrCollector (AMC) to retrieve the information that is stored on the server.

- **Cisco Tomcat Stats Servlet:** The Cisco Tomcat Stats Servlet allows you to monitor the Tomcat perfmon counters by using Unified RTMT or the CLI. Do not stop this service unless you suspect that this service is using too many resources, such as CPU time.
- **Cisco Trace Collection Servlet:** The Cisco Trace Collection Servlet, along with the Cisco Trace Collection Service, supports trace collection and allows users to view traces by using the Unified RTMT client. If you stop this service on a server, you cannot collect or view traces on that server.
- **Cisco Trace Collection Service:** The Cisco Trace Collection Service, along with the Cisco Trace Collection Servlet, supports trace collection and allows users to view traces by using the Unified RTMT client. If you stop this service on a server, you cannot collect or view traces on that server.
- **Cisco Log Partition Monitoring Tool:** This service which starts up automatically after the installation, monitors the disk usage of the log partition on a server.
- **Cisco SOAP-Real-Time Service APIs:** The Cisco SOAP-Real-Time Service APIs, which start automatically after the installation, allow Unified RTMT to collect real-time information for devices and CTI applications.
- **Cisco SOAP-Performance Monitoring APIs:** This service, which starts up automatically after the installation, allows Unified RTMT to use performance monitoring counters for various applications through SOAP APIs.
- **Cisco RTMT Reporter servlet:** This service, which starts up automatically after the installation, allows you to publish reports for Unified RTMT.

Nonconfigurable Components

RTMTCollector, a component that is automatically installed with the application, logs preconfigured monitoring objects information while Alert Manager, also automatically installed, logs alert histories into log files. Each preconfigured object belongs to one of several categories: devices, services, nodes, call activities, and PPR. Each category uses a separate log file, and alert details are also logged in a separate file.

The system also records important perfmon object values in performance log files.



Tip Unified Communications Manager clusters only: Although they require no configuration tasks to run, RTMT Collector and Alert Manager support redundancy. If the primary collector or manager fails for any reason, the secondary collector and manager perform the tasks until primary support becomes available. RTMT Collector, Alert Manager, and RTMT Reporter run on the first node to minimize call-processing interruptions.

The locally written log files appear in the primary collector node at `cm/log/amc`. For Unified Communications Manager clusters, the log files can exist on more than one node in the cluster because the primary collector changes in failover and fallback scenarios.

You can display log files, except an alert log file, by using the Performance log viewer in Unified RTMT or by using the native Microsoft Performance viewer. You can view an alert log file by using any text editor.

To download log files to a local machine, you can use the collect files option in Trace and Log Central in Unified RTMT.

Alternatively, from the CLI, you can use the file list command to display a list of files and the file get command to download files by SFTP. For more information about using CLI commands, see the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*.

Log files exist in CSV format. New log files are created every day at 00:00 hours on the local system. For Unified Communications Manager clusters, new logs for devices, services, nodes, and calls are created when the time zone changes, when a new node is added to the cluster, or during failover/fallback scenarios. The first column of all these logs comprises the time zone information and the number of minutes from the Greenwich Meridian Time (GMT). RTMT Reporter uses these log files as a data source to generate daily summary reports. The report, which is based on the default monitoring objects, is generated every 24 hours for the following information:

- Call Activity Status: Number of calls attempted and number of calls completed for each Unified Communications Manager, each gateway, trunk, and overall cluster (if applicable). Number of channels available, in-service for each gateway.
- Device Status: Number of registered phones, gateways, and trunks per each node and overall cluster (if applicable).
- Server Status: percentage CPU load, percentage memory that is used, percentage disk space that is used per node.
- Service Status: (Unified Communications Manager and Cisco Business Edition) For each CTI Manager, number of opened devices and lines. For each TFTP server, number attempted and failed requests.
- Alert Status: Number of alerts per node. For Unified Communications Manager clusters, number of alerts per severity level for the cluster, including the top 10 alerts in the cluster.
- Performance Protection Report: Trend analysis information about default monitoring objects that allows you to track overall system health. The report includes information for the last 7 days for each node.



Tip The Unified RTMT reports appear in English only.

The following service parameters apply to Unified RTMT report generation: RTMT Reporter Designated node, RTMT Report Generation Time, and RTMT Report Deletion Age. For information about these parameters, go to the service parameter Help for your configuration:

Unified Communications Manager	Choose Cisco Serviceability Reporter in the Service Parameter window in Unified Communications Manager Administration and click the ? button.
Cisco Business Edition 5000	Choose Cisco Serviceability Reporter in the Service Parameter window in Unified Communications Manager IM and Presence Administration and click the ? button.
Cisco Unity Connection	On the Service Parameters window, in the Service drop-down list box, click a service and click Help > This Page .

For more information about the Serviceability reports, see the “Serviceability Reports” chapter in the *Cisco Unified Serviceability Administration Guide*.

Uninstall Unified RTMT



Note Unified RTMT saves user preferences and the module jar files (the cache) locally on the client machine. When you uninstall Unified RTMT, you choose whether to delete or save the cache.



Note When you uninstall Unified RTMT on a Windows 8.1 machine, the following User Account Control popup message appears: “An unidentified program wants to access your computer.” Click **Allow** to continue working with Unified RTMT.

Procedure

- Step 1** Close any active sessions of Unified RTMT.
- Step 2** To uninstall Unified RTMT, perform one of the following actions:
- a) For a Windows client, choose **Start > Settings > Control Panel > Add/Remove Programs**
 - b) For a Red Hat Linux installation with KDE or GNOME client, choose **Start > Accessories > Uninstall Real-time Monitoring tool** from the task bar.
- Step 3** Finish uninstalling the plug-in.
-



CHAPTER 3

System Performance Monitoring

- [Predefined System Objects, on page 29](#)
- [Voice and Video Monitoring, on page 30](#)
- [Intercompany Media Services, on page 58](#)
- [IM and Presence Monitoring, on page 61](#)
- [Cisco Unity Connection Monitoring, on page 66](#)

Predefined System Objects

Unified RTMT displays information about predefined system objects in the monitoring pane.



Tip The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate for the Alert Manager and Collector (AMC) service parameter changes, the polling rate in the precanned window also updates. In addition, the local time of the RTMT client application (not the back-end server) time provides the basis for the time stamp in each chart.

For information about service parameters, see the administration online help.



Tip To zoom in on the monitor of a predefined object, click and drag the left mouse button over the area of the chart in which you are interested. Release the left mouse button when you have the selected area. RTMT updates the monitored view. To zoom out and reset the monitor to the initial default view, press the **R** key.

The following table provides information about the predefined objects that RTMT monitors.

Table 3: System Categories

Category	Description
System Summary	Displays information about Virtual Memory usage, CPU usage, Common Partition Usage, and the alert history log. To display information about predefined system objects, choose System > System Summary .

Category	Description
Server	<ul style="list-style-type: none"> • CPU and Memory: Displays information about CPU usage and Virtual memory usage for the server. To display information about CPU and Virtual memory usage, choose System > Server > CPU and Memory. To monitor CPU and memory usage for specific server, choose the server from the host drop-down list box. • Process: Displays information about the processes that are running on the server. To display information about processes running on the system, choose System > Server > Process. To monitor process usage for specific server, choose the server from the Host drop-down list box. • Disk Usage: Displays information about disk usage on the server. To display information about disk usage on the system, choose System > Server > Disk Usage. To monitor disk usage for specific server, choose the server from the host drop-down list box. • Critical Services: Displays the name of the critical service, the status (whether the service is up, down, activated, stopped by the administrator, starting, stopping, or in an unknown state), and the elapsed time during which the services existed in a particular state for the server or for a particular server in a cluster (if applicable). To display information about critical services, choose System > Server > Critical Services, then click the applicable tab: <ul style="list-style-type: none"> • To display system critical services, click the System tab. • To display Unified Communications Manager critical services, click the Voice/Video tab. • To display Cisco Unity Connection critical services, click the Cisco Unity Connection tab. • To monitor critical services for specific server on the tab, choose the server from the host drop-down list box and click the critical services tab in which you are interested. <p>If the critical service status indicates that the administrator stopped the service, the administrator performed a task that intentionally stopped the service; for example, the service stopped because the administrator backed up or restored Unified Communications Manager; performed an upgrade; or stopped the service in Cisco Unified Serviceability or the CLI.</p> <p>Note If the critical service status displays as unknown state, the system cannot determine the state of the service.</p>

Voice and Video Monitoring

Predefined Cisco Unified Communications Manager Objects

Unified RTMT displays information about predefined Unified Communications Manager objects in the monitoring pane when you select Communications Manager in the quick launch channel. The tool monitors the predefined objects on all servers in an cluster, if applicable.



Tip The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate for the AMC (Alert Manager and Collector) service parameter changes, the polling rate in the precanned window also updates. In addition, the local time of the Unified RTMT client application and not the backend server time, provides the basis for the time stamp in each chart.

For more information about service parameters, see the *Cisco Unified Communications Manager Administration Guide* or *Cisco Unity Connection System Administration Guide*.



Tip To zoom in on the monitor of a predefined object, click and drag the left mouse button over the area of the chart in which you are interested. Release the left mouse button when you have the selected area. Unified RTMT updates the monitored view. To zoom out and reset the monitor to the initial default view, press the **R** key.

The following table provides information about the predefined object that Unified RTMT monitors.

Table 4: Cisco Unified Communications Manager Categories

Category	Description
CallManager Summary	<p>Displays registered phones, calls in progress, and active MGCP ports and channels.</p> <p>To display information about predefined Unified Communications Manager objects, choose CallManager > CallManager Summary.</p>

Category	Description
Call Process	

Category	Description
	<ul style="list-style-type: none"> <li data-bbox="997 289 1523 552"> <p>• Call Activity: Displays the call activity on Unified Communications Manager, including calls completed, calls attempted, calls in progress, and logical partition total failures. This includes all servers in the cluster, if applicable.</p> <p>To display information about call activities, choose CallManager > Call Process > Call Activity.</p> <li data-bbox="997 579 1523 873"> <p>• Gateway Activity: Displays gateway activity on Unified Communications Manager, including active ports, ports in service, and calls completed. This includes all servers in the cluster, if applicable.</p> <p>To display information about gateway activities, choose CallManager > Call Process > Gateway Activity. Select the type of gateway interface from the Gateway Type drop-down list.</p> <li data-bbox="997 900 1523 1163"> <p>• Trunk Activity: Displays the trunk activity on Unified Communications Manager, including calls in progress and calls completed. This includes all servers in the cluster, if applicable.</p> <p>To display information about trunk activities, choose CallManager > Call Process > Trunk Activity. Select the trunk type in the Trunk Type drop-down list.</p> <li data-bbox="997 1190 1523 1419"> <p>• SDL Queue: Displays SDL queue information, including number of signals in queue and number of processed signals.</p> <p>To display information about the SDL Queue, choose CallManager > Call Process > SDL Queue. Select the type from the SDL Queue Type drop-down list.</p> <li data-bbox="997 1446 1523 1740"> <p>• SIP Activity: Displays SIP activity on Unified Communications Manager, including summary requests, summary responses, summary of failure responses in, summary of failure responses out, retry requests out, and retry responses out. This includes all servers in the cluster, if applicable.</p> <p>To display information about SIP activities, choose CallManager > Call Process > SIP Activity.</p> <li data-bbox="997 1768 1523 1852"> <p>• Session Trace: Displays all SIP message activity: specifically, the incoming and outgoing calls and sessions that pass through the . Provides</p>

Category	Description
	<p>associated call flow diagram for each SIP transaction.</p> <p>To display information about Session Trace, choose CallManager > Call Process > Session Trace.</p>
Device	<p>Device Summary displays information about the Unified Communications Manager server, including the number of registered phone devices, registered gateway devices, and registered media resource devices. This includes all servers in the cluster, if applicable.</p> <p>Device Search displays cluster name and device types in a tree hierarchy and allows you to query for information about phones and devices.</p> <p>Phone Summary displays information about the Unified Communications Manager server, including the number of registered phones, registered SIP phones, registered SCCP phones, partially registered phones, and the number of failed registration attempts. This includes all servers in the cluster, if applicable.</p> <p>To display information about the number of registered phones, gateways, and media resource devices on Unified Communications Manager, choose CallManager > Device > Device Summary.</p> <p>Tip To monitor other devices, you must perform additional configuration steps.</p>

Category	Description
Service	<ul style="list-style-type: none"> • Cisco TFTP: Displays Cisco TFTP status on the Unified Communications Manager server, including total TFTP requests, total TFTP requests found, and total TFTP requests aborted. This includes all servers in the cluster, if applicable. To display information about the Cisco TFTP service, choose CallManager > Service > Cisco TFTP. • Heartbeat: Displays heartbeat information for the Unified Communications Manager, Cisco TFTP service. To display the heartbeat status of Unified Communications Manager servers, Cisco TFTP servers, choose CallManager > Service > Heartbeat. • Database Summary: Provides connection information for the server, such as the change notification requests that are queued in the database, change notification requests that are queued in memory, the total number of active client connections, the number of devices that are queued for a device reset, the number of replicates that have been created, and the status of the replication. To display information about the database, choose CallManager > Service > Database Summary.
CTI Manager	<p>Displays information about the devices and applications that interfaces with the CTI Manager.</p> <p>To display information about CTI Applications, choose CallManager > CTI > CTI Manager.</p> <p>To monitor specific CTI types, you must perform additional configuration steps. See topics related to monitoring CTI applications, devices, and lines.</p> <p>You cannot choose CTI Manager by using the menu bar. To monitor the number of open devices, lines, and CTI connections in a single window on Unified Communications Manager, see topics related to device monitoring.</p>

Category	Description
Intercompany Media Services	<ul style="list-style-type: none"> • Routing: Displays the total number of Cisco Intercompany Media Engine routes maintained by Unified Communications Manager. To display information about call activities, choose CallManager > Intercompany Media Services > Routing. • Call Activities: Displays the Cisco Intercompany Media Engine call activity, including the number of calls that were accepted, busy, no answer, and failed. To display information about call activities, choose CallManager > Intercompany Media Services > Call Activities.

Cisco Unified Communications Manager Summary View

In a single monitoring pane, Unified RTMT allows you to monitor information about a Unified Communications Manager server or about all servers in a cluster (if applicable). In the CallManager Summary window, you can view information about the following predefined objects:

- Registered Phones
- Calls in Progress
- Active Gateway, Ports, and Channels

Call-Processing Activity Monitoring

The Call Process monitoring category monitors the following items:

- **Call Activity:** You can monitor the number of attempted calls, completed calls, in-progress calls, and logical partition total failures for a particular server or for an entire cluster (if applicable).
- **Gateway Activity:** You can monitor gateway activity for each gateway type. Gateway activity monitoring includes the number of active ports, the number of ports in service, and the number of calls that were completed for each gateway type for a particular server or for an entire cluster (if applicable).
- **Trunk Activity:** The system monitors trunk activity by trunk type for a particular server or for an entire cluster (if applicable). Trunk activity monitoring includes the number of calls in progress and the number of calls that were completed for a particular trunk type.
- **SDL Queue:** SDL queue monitoring monitors the number of signals in the SDL queue and the number of signals that were processed for a particular signal distribution layer (SDL) queue type. The SDL queue types comprise high, normal, low, and lowest queue. You can monitor the SDL queue for a particular server or for an entire cluster (if applicable).

- **SIP Activity:** The system displays a summary of SIP requests, SIP responses, total number of failed incoming responses (4xx, 5xx, and 6xx), total number of failed outgoing responses (4xx, 5xx, and 6xx), number of retry requests, and number of retry responses.
- **Session Trace:** You can search or trace the calls based on the following criteria: Calling Number/URI, Called Number/URI, Start Time, and Duration. RTMT downloads the Call Log file(s) that include the Start Time and Duration, search for the matching calls, list the matching call records, and provide the Call Flow Diagram.

The following table provides information about the call processing objects that RTMT monitors, the alert, thresholds, and defaults. For information about call activity daily reports, see the *Cisco Unified Serviceability Administration Guide*.

Table 5: Call Processing Category

Monitored Objects (displayed)	Alert/Threshold/Default
CallsAttempted, CallsCompleted, CallsInProgress, and Logical Partition Failures Total for each server and cluster (if applicable).	—
CallsAttempted, CallsCompleted, and CallsInProgress of each type of MGCP FXS/FXO/PRI/T1CAS/H.323 gateway, as well as SIP and H.323 Trunks for each server and cluster (if applicable).	—
Channel/Port Status of each MGCP FXS/FXO/PRI/T1CAS gateway.	—
SDL Queue activity on each server.	—
MGCP FXS Gateway: Number of In-Service and Active ports for each server and cluster (if applicable).	Route-List exhausted
MGCP FXO Gateway: Number of In-Service and Active ports for each server and cluster (if applicable).	Route-List exhausted
MGCP PRI Gateway: Number of In-Service and Active channels for each server and cluster (if applicable).	<ul style="list-style-type: none"> • D-Channel out of service • Route List exhausted
MGCP T1CAS Gateway: Number of In-Service and Active ports for each server and cluster (if applicable).	Route List exhausted

Call-Processing Logs

The system accumulates call-processing data in the memory whenever Unified RTMT calls the LogCall API. Every 5 minutes, Unified RTMT logs the data into the file as a single record and cleans the memory.

The system logs data every 5 minutes for the following counters on the basis of the following calculation:

- **cmCallsAttempted:** Cumulative (difference between last collected value and the first collected value in last 5 minutes)

- cmCallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- cmCallsInProgress: Average of all the values that were collected in last 5 minutes
- gwMGCP_FXS_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwMGCP_FXO_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwMGCP_PRI_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwMGCP_T1_CAS_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwH323_CallsAttempted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwH323_CallsInProgress: Average of all the values that were collected in last 5 minutes
- gwH323_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- trunkH323_CallsAttempted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- trunkH323_CallsInProgress: Average of all the values collected in last 5 minutes
- trunkH323_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- trunkSIP_CallsAttempted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- trunkSIP_CallsInProgress: Average of all the values that were collected in last 5 minutes
- trunkSIP_CallsCompleted: Cumulative (difference between last collected value and the first collected value in last 5 minutes)
- gwMGCP_FXS_PortsInService: Average of all the values that were collected in last 5 minutes
- gwMGCP_FXO_PortsInService: Average of all the values that were collected in last 5 minutes
- gwMGCP_PRI_SpansInService: Average of all the values that were collected in last 5 minutes
- gwMGCP_T1_CAS_SpansInService: Average of all the values that were collected in last 5 minutes
- gwMGCP_FXS_ActivePorts: Average of all the values that were collected in last 5 minutes
- gwMGCP_FXO_ActivePorts: Average of all the values that were collected in last 5 minutes
- gwMGCP_PRI_ActiveChannels: Average of all the values that were collected in last 5 minutes
- gwMGCP_T1_CAS_ActiveChannels: Average of all the values that were collected in last 5 minutes

The AMC service logs the call data in windows Performance tool-compatible CSV format. The header of the log comprises the time zone information and a set of columns with the previously listed counters for the server. These sets of columns repeat for every server in a cluster, if applicable.

The following filename format of the Call Log applies: CallLog_MM_DD_YYYY_hh_mm.csv.

The first line of each log file comprises the header.

Perform Session Trace

Unified Communications Manager captures and logs all SIP message activities, which comprise the incoming and outgoing calls or sessions that pass through it. Unified Communications Manager stores the messages on a per-transaction basis in a new Call Log file, which can be downloaded through RTMT for postprocessing activity.

RTMT users can search or trace the calls based on the following criteria:

- Calling Number/URI
- Called Number/URI
- Start Time
- Duration

RTMT downloads the Call Log file that includes the Start Time and Duration. The tool searches for the matching calls, lists the matching call records, and provides the SIP message Call Flow Diagram.

You can also save the call logs on your local system. Based on the saved call logs, RTMT can search for the matching calls, list the matching records, and provide SIP Message Call Flow Diagrams.

Before you begin

Perform the following task:

- Use the enterprise parameter Enable Call Trace Log to enable or disable Call Tracing. For more information about configuring enterprise parameters, see the *Cisco Unified Communications Manager Administration Guide*.
-
- The default value for maximum number of Call Trace log files specifies 2000 and the default value for maximum Call Trace log file size specifies 2MB.

Monitor Real-Time Data

Follow this procedure to monitor real-time data using RTMT.



Note You can search calls based on the following criteria: Calling Number/URI, Called Number/URI, Start Time, and Duration. The search applies to the entire Unified Communications Manager cluster, not just the local node. If any node fails to collect the trace files, the system displays an error message in the bottom panel and pops up the message prompt to the user.



Note In Calling Number/URI, Called Number/URI, you can use wildcard character "*" to match any number of characters. For example, a search for 123* fetches numbers like 123, 1234, or 123456.

If you want to search for numbers with a "*" in them, use "*". For example, to search for a Called Number like 12*45, enter 12*45 in the search box.

Procedure

Step 1 To display information about Session Trace, from the RTMT menus, choose **Voice/Video > Call Process > Session Trace Log View > Real Time Data**.

The Real Time Data screen appears.

Step 2 Enter the search criteria and Click **Run**.

Click **Yes** to ignore the error and generate the table, based on the input.

If matching calls are found, the Matching Call pane displays Start Time, Calling DN, Original Called DN, Final Called DN, Calling Device Name, Called Device Name, and Termination Cause Code.

Note The Called Party Trace feature adds the Calling Device Name and Called Device Name fields.

- Calling and Called device names will not be available for failed calls such as calls made to unreachable destinations.
- The Termination Cause Code helps to identify the failed calls, and provides the reason for the failure of the calls. The Termination Cause Code is displayed in parenthesis followed by description.
- If the call is in progress or if the call trace logging is turned off after the call, the Termination Cause Code column remains blank.

After the call records are displayed in the Matching Calls pane, you can trace calls.

Note If cause code description is missing or if you want more information about the Termination Cause Codes, refer the CDR cause codes in *Cisco Unified Call Details Records Administration Guide*.

Monitor Session Trace Data From Local Disk

Follow this procedure to monitor session trace data from the logs that are saved on your local disk:

Procedure

Step 1 From the RTMT menus, choose **Voice/Video > Call Process > Session Trace Log View > Open from Local Disk**.

The Open from Local Disk screen appears.

- Step 2** In the **File Location** field, specify the directory where the call log files are saved on your local disk. You can click **Browse** to specify the directory path.
- Step 3** Check the **Enable Time Based Search** check box to view call records for a specific duration. If you check this check box, you can specify the duration in **Duration** field. If you do not check this check box, you will not be able to specify the duration. In such cases, all the calls from the specified Start Time that are present in the saved log files will be displayed.
- Step 4** Enter the search criteria and click **Run**.

Note In Calling Number/URI, Called Number/URI, you can use the wildcard character '*' to match any number of characters. For example, a search for 123* fetches numbers like 123, 1234, 123456.

If you want to search for numbers with a '*' in them, use '*'. For example, to search for a Called Number like 12*45, enter 12*45 in the search box.

If matching calls are found, the Matching Call pane displays Start Time, Calling DN, Original Called DN, Final Called DN, Calling Device Name, Called Device Name, and Termination Cause Code.

Note The Called Party Trace feature adds the Calling Device Name and Called Device Name fields.

- Calling and Called device names will not be available for failed calls such as calls made to unreachable destinations.
- The Termination Cause Code helps to identify the failed calls, and provides the reason for the failure of the calls. The Termination Cause Code is displayed in parentheses followed by description.
- If the call is in progress or if the call trace logging is turned off after the call, the Termination Cause Code column remains blank.

Note If cause code description is missing or if you want more information about the Termination Cause Codes, see the CDR cause codes in *Cisco Unified Call Details Records Administration Guide*.

Trace Calls

Follow this procedure to trace call records displayed as per the specified search criteria.



Note Use this procedure along with “Monitor real-time data” and “Monitor session trace data from local disk.”

Procedure

- Step 1** Select a call (a row) to trace.
- By default, the **Include SIP Message** check box is selected to view the associated SIP protocol messages or call transactions.
- Step 2** To generate the SIP Message Call Flow Diagram, click **Trace Call**. If you want to stop the generation of the session information, click **Cancel** on the progress window.
- The **Analyze Call Diagram** window displays the corresponding SIP messages in the Call Flow Diagram.
- Step 3** Click the tabs that you want to view. The following tabs are available:

- a) Call Flow Diagram: Displays the corresponding SIP messages in the Call Flow Diagram.
- b) Log File: Displays the entire log file.
- c) SIP Message: Appears only when the **Include SIP Message** check box is checked. Displays the actual SIP message that is logged into the SDI log file.

Step 4

Move your mouse over the SIP messages in the Call Flow Diagram. The following table lists the details that are displayed:

Field	Description
Sender	Displays the IP address of the originating call.
GUID	Displays the SIP call ID.
Message Label	Displays the message type for the corresponding SIP message onto which you move your mouse; for example, 200 OK, or 180 Ringing.
Receiver	Displays the IP address of the destination call.
MAC_ADDRESS	Displays the name of the device.
Message Tag	Displays the sequence number to match the actual messages in the SDI Trace file.
MSG_TYPE	Displays the type of message.
Correlation ID	Displays the Correlation ID.
Timestamp	Displays the server time at which the call operation (call setup/split/join/release) happens.

Detailed SIP Message: Appears only when the Include SIP Message check box is checked. Displays the actual SIP message that is logged into the SDL log file.

Message in Log File: Displays the log file which contains the message.

To view the SIP messages that get logged into the SDL log file, perform the following actions:

- Check the **Enable SIP Call Processing Trace** check box in the Trace Configuration window of Cisco Unified Serviceability (**Trace > Configuration**). See *Cisco Unified Serviceability Administration Guide* for more information.
- Set the trace level to any one of the following: State Transition, Significant, Arbitrary or Detailed.

Note If you are monitoring the session trace data from the logs stored on your local disk, the detailed SIP message will be available only if the SDL/SDI logs are present in the parent directory of the call logs.

Step 5

Click **Save**.

If you are monitoring real-time data, the Call Flow Diagram is saved as index.html in the specified folder along with the SDL files which contain the SIP messages. You can email the files to the Technical Assistance Center (TAC). For more information on monitoring real-time data, see “Monitor real-time data.” The SIP

messages in the saved Call Flow Diagram appear as hyperlinks. When you click a SIP message, the detailed SIP message along with the following details is displayed in a new window.

Field	Description
Sender	Displays the IP address of the originating call.
GUID	Displays the SIP call ID.
Message Label	Displays the message type for the corresponding SIP message onto which you move your mouse; for example, 200 OK, or 180 Ringing.
Receiver	Displays the IP address of the destination call.
MAC_ADDRESS	Displays the name of the device.
Message Tag	Displays the sequence number to match the actual messages in the SDI Trace file.
MSG_TYPE	Displays the type of message.
Correlation ID	Displays the Correlation ID.
Timestamp	Displays the server time at which the call operation (call setup/split/join/release) happens.

If you open logs for Unified Communications Manager 8.5(1) or 8.6(1) using Open from Local Disk option and save the ladder diagram, the SIP messages, the SDI log files that contain the SIP messages and SDL Log files for a duration of from 5 minutes before the start of the call to 5 minutes after the start of the call will be saved. If you save logs from Unified Communications Manager 9.0(1) or later, the SDL log files that contain the call details are saved along with index.html and the SIP messages. For more information about monitoring the session trace data from the logs saved to your local disk, see “Monitor session trace data from local disk.”

Note If the files are zipped, extract the zipped files to a local folder and open them to view the images.

You can perform the following actions:

- a) To view the online help, click **Help**.
- b) To exit the Analyze Call Diagram screen, click **Close**.
- c) To navigate to the previous page, click **Previous Messages**.
- d) To navigate to the next page, click **Next Messages**.

Note **Previous Messages** or **Next Messages** is enabled only when the message size exceeds a threshold.

The Session Manager logs the call data in new log files. These new log files are located in the following folder:
/var/log/active/cm/trace/ccm/calllogs/.

The Call Log name has the following filename pattern: calllogs_dddxxxxxx.txt.gz.

Detailed SIP messages are logged into SDI traces.

The Call Logs include the following message types:

- Call Control: Writes call information at call setup, split, join, and release.

```
Timestamp|MessageType (CC)|Operation (SETUP/SPLI/JOIN/RELEASE)|CI for one leg (aCI)|CI
for other leg (bCI)|calling DN|Orig Called DN|Final Called DN
```

- **Device Layer:** Writes metadata information that relates to message from or to the device.

```
Timestamp|MessageType (SIPL/SIPT)|My leg CI|Protocol(tcp/ucp)|Direction (IN/OUT)|local
ip|local port|device name|device ip|device port|Correlation id|Message Tag|SIP Call
ID|SIP method
```

The following limitations apply when the Call Flow Diagram is generated:

- Search does not show incomplete calls.

Example:

When the user picks up the handset and hangs up without dialing the complete DN, it will not be listed in the search results.

- The Call Flow Diagram does not show some SIP messages in the following scenarios:
 - Conference calls involving more than three parties.
 - A call leg is used to invoke a feature alone.

Example:

Phone B and Phone C are in the same pickup group.

- User A calls Phone B.
- User C lifts up the Phone C handset.
- User C presses the PickUp softkey to pickup the call.

SIP messages exchanged in Step b are not displayed in the Call Flow Diagram

In these cases, a RELEASE message is logged in the call logs without a corresponding SETUP message.

Services Monitoring

The Service monitoring category monitors the activities of Cisco TFTP requests, database activities, and heartbeat of the server or of different servers in a cluster (if applicable).

The Cisco TFTP service builds and serves files that are consistent with the Trivial File Transfer Protocol, which is a simplified version of the File Transfer Protocol (FTP). Cisco TFTP builds configuration files and serves embedded component executables, ringer files, and device configuration files. You can view the total Cisco TFTP requests, requests not found, and requests that were aborted.

Unified RTMT monitors the heartbeat of Unified Communications Manager and Cisco TFTP services for the server or for different servers in a cluster (if applicable). The heartbeat acts as an indicator of the life of whatever it is monitoring. When the heartbeat is lost, a blinking icon appears in the lower right corner of the RTMT window. To find when the heartbeat loss was detected, click the blinking icon. An email can notify you of the heartbeat loss, if you configure the system to do so.

The database summary provides connection information for the server or for each server in a cluster (if applicable), such as the change notification requests that are queued in the database, change notification

requests that are queued in memory, the total number of active client connections, the number of devices that are queued for a device reset, replicates created, and replication status.

For information about daily reports for CTI and Cisco TFTP usage statistics, see the *Cisco Unified Serviceability Administration Guide*.

The following table provides information about the service objects that RTMT monitors, the alert, thresholds, and defaults.

Table 6: Services Category

Monitored Objects (Displayed)	Alert/Threshold/Default
Number of open devices, lines, CTI connections, and active Unified Communications Manager links for each CTI Manager.	N/A
TotalTftpRequests and TotalTftpRequestsAborted for each Cisco TFTP server.	N/A
Connection and replication status for each Directory server.	<ul style="list-style-type: none"> • Connection failed. • Replication failed.
Heartbeat rate for Cisco CallManager, Cisco TFTP services.	<ul style="list-style-type: none"> • Unified Communications Manager heartbeat rate specifies <0.x. Default specifies 0.5. • Cisco TFTP heartbeat rate specifies <0.x. Default specifies 0.5.

Service Logs

The service data accumulates in the memory whenever RTMT calls the LogService API. Every five minutes, RTMT logs the data into the file as a single record and cleans the memory.

The system logs data every five minutes for the following counters, based on the following calculation:

- `ctiOpenDevices`: Average of all the values that were collected in last five minutes
- `ctiLines`: Average of all the values that were collected in last five minutes
- `ctiConnections`: Average of all the values that were collected in last five minutes
- `ctiActiveCMLinks`: Average of all the values that were collected in last five minutes
- `tftpRequests`: Cumulative (difference between last collected value and the first collected value in last five minutes)
- `tftpAbortedRequests`: Cumulative (difference between last collected value and the first collected value in last five minutes)

The AMC service logs the service data in csv format. The header of the log comprises the time zone information and a set of columns with the counters that were previously listed for a server. These sets of columns repeat for every server in a cluster, if applicable.

The following filename format of the Service Log applies: `ServiceLog_MM_DD_YYYY_hh_mm.csv`.

The first line of each log comprises the header.

Device Logs

The device data accumulates in the memory whenever RTMT calls the LogDevice API. Every five minutes, RTMT logs the data into the file as a single record and cleans the memory.

The data is logged every five minutes for the following counters based on the following calculation:

- gatewayDevicesFXS: Average of all the values that were collected in last 5 minutes
- gatewayDevicesFXO: Average of all the values that were collected in last 5 minutes
- gatewayDevicesPRI: Average of all the values that were collected in last 5 minutes
- gatewayDevicesT1: Average of all the values that were collected in last 5 minutes
- gatewayDevicesH323: Average of all the values that were collected in last 5 minutes

The AMC service logs the device data in CSV format. The header of the log comprises the time zone information and a set of columns with the previously listed counters for a server. These sets of columns repeat for every server in a cluster, if applicable.

The following filename format of the Device Log applies: `DeviceLog_MM_DD_YYYY_hh_mm.csv`.

The first line of each log file comprises the header.

Device Monitoring

Device Monitoring

The Device monitoring category provides a summary of devices, device search capability, and a summary of phones.

For information about daily reports on registered devices, see the *Cisco Unified Serviceability Administration Guide*.

The following table provides information about the device objects that Unified RTMT monitors, the alert, thresholds, and defaults, and what kind of reports that Unified RTMT generates for those devices.

Table 7: Devices Category

Monitored Objects (Displayed)	Alert/Threshold/Default
Number of registered phones for each server or for all servers in a cluster (if applicable).	Total number of registered phones drops by X% in consecutive polls. Default specifies 10%.

Monitored Objects (Displayed)	Alert/Threshold/Default
Number of registered gateways on each server or for all servers in a cluster (if applicable).	For Unified Communications Manager: <ul style="list-style-type: none"> • (Warning) Clusterwide total number of registered gateways decreased in consecutive polls. • (Informational) Clusterwide total number of registered gateways increased in consecutive polls. For Cisco Business Edition 5000: <ul style="list-style-type: none"> • (Warning) Total number of registered gateways decreased in consecutive polls. • (Informational) Total number of registered gateways increased in consecutive polls.
Number of registered media devices on each server or for all servers in a cluster (if applicable).	For Unified Communications Manager: <ul style="list-style-type: none"> • (Warning) Clusterwide total number of registered media devices decreased in consecutive polls. • (Informational) Clusterwide total number of registered media devices increased in consecutive polls. • Media List exhausted. For Cisco Business Edition 5000: <ul style="list-style-type: none"> • (Warning) Total number of registered media devices decreased in consecutive polls. • (Informational) Total number of registered media devices increased in consecutive polls. • Media List exhausted.

The Device Search menu comprises the following items on which you can search: phones, gateway devices, H.323 devices, CTI devices, voice-messaging devices, media resources, hunt lists, and SIP trunks.

You can search on any device in the Unified Communications Manager system and choose the status of the devices, including registered, unregistered, rejected, any status, and devices that are only configured in the database. You can also search by any model, or a specific device model, and set up criteria that include several different attributes. Within the phone search, you can also search on the basis of phone protocol. You can also generate reports for your devices to troubleshoot them.



Note Currently, only 200 devices are displayed in the Device Search page for a single node in the cluster.

Unified RTMT queries Cisco RIS to find the matching device. Results display in a table with a row for each matched device, a column for each of the specified attributes, and a timestamp of the device that has been opened or closed and the application that controls the device media.

If you have Unified Communications Manager clusters and you search for a device by choosing the Any Status option, Unified RTMT does not display a snapshot of the matched device type, but rather it displays data for that device type from the Cisco RIS database for all specified Unified Communications Manager servers for a period of time. As a result, you may see multiple entries of a device with multiple statuses (for example, Registered or Unregistered) in Unified RTMT.

When you see multiple entries of a device, the current status of the device reflects the entry that has the latest timestamp. By configuring the Cisco RIS Unused Cisco CallManager Device Store Period service parameter for the Cisco RIS Data Collector service in Unified Communications Manager Administration, you can configure the period of time that the Cisco RIS database keeps information on unregistered or rejected device. See the *Cisco Unified Communications Manager Administration Guide* for more information about configuring service parameters.



Tip To find the matching item, Unified RTMT requires that you activate the Cisco RIS Data Collector service in the Service Activation window.

Results display in a table with a row for each matched device, a column for each of the specified attributes, and a timestamp of the device that has been opened or closed and the application that controls the device media.

The phone summary provides information about the number of registered phones, phones that are running SIP, phones that are running SCCP, partially registered phones, and the number of failed registration attempts.

Find Specific Devices to Monitor

Follow this procedure to monitor data for the following device types:

- Phones
- Gateway Devices
- H.323 Devices
- CTI Devices
- Voicemail Devices
- Media Resources
- Hunt List
- SIP Trunk

Procedure

Step 1

Perform one of the following tasks:

a) On the Quick Launch Channel, perform the following steps:

1. Click **CallManager**.
2. In the tree hierarchy, double-click **Device**.
3. Click the **Device Search** icon.

- b) Choose **CallManager > Device > Device Search > Open Device Search** and select the device type; for example, Phone, Gateway, Hunt List, and so on. A device selection window displays where you enter the search criteria.

The **Device Search** window displays the cluster names (if applicable) and tree hierarchy that lists all device types that you can monitor.

Tip After you display the Device Search or CTI Search panes, you can right-click a device type and choose **CCMAdmin** to go to Cisco Unified Communications Manager Administration.

- Step 2** To find all devices or to view a complete list of device models from which you can choose, right-click the cluster name and choose **Monitor**.
- Step 3** To monitor a specific device type, right-click or double-click the device type from the tree hierarchy.
- Note** If you right-click the device type, you must choose **Monitor** for the device selection window to display.
- Step 4** In the **Select device with status** window, click the radio button that applies.
- Step 5** In the drop-down list box next to the radio button that you clicked, choose **Any CallManager** or a specific Unified Communications Manager server for which you want the device information to display.
- Tip** In the remaining steps, you can choose the **<Back, Next>**, **Finish**, or **Cancel** buttons.
- Step 6** Click the **Next>** button.
- Step 7** In the Select Device with Download Status pane, click the radio button that applies, and click **Next**.
- Step 8** In the Search by device model pane, click the radio button that applies.
- Tip** If you chose **Device Model**, choose the device type for which you want the device information to display.
- Step 9** Click **Next**.
- Step 10** In the Search with name pane, click the radio button that applies and enter the appropriate information in the corresponding fields, if required.
- Note** If you enter the IPv6 address, the IP Subnet does not apply.
Cisco Business Edition 5000 does not support IPv6.
- Step 11** Click **Next**.
- Step 12** In the Monitor following attributes pane, check one or all of the search attributes.
- Note** If you check the Ipv6 Address check box, be aware that Cisco Business Edition 5000 does not support IPv6.
- Step 13** Click **Finish**.
- Note** Some devices may not provide information for all search criteria. For example, if you select to monitor a phone for active load, inactive load, download status, or download reason, the download status results display Unknown for phone models that cannot provide this information.
-

View Phone Information

You can view information about phones that display in the RTMT device monitoring pane. This section describes how to view phone information.

Procedure

- Step 1** Find and display the phone in the RTMT device monitoring pane.
- Step 2** Perform one of the following tasks:
- a) Right-click the phone for which you want information to display and choose **Open**.
 - b) Click the phone and choose **Device > Open**.
- The **Device Information** window appears.
- Step 3** In the Select Device with Status pane, click the radio button that applies.
- Step 4** In the drop-down list box next to the radio button that you clicked, choose **Any CallManager** or a specific Unified Communications Manager server for which you want the device information to display.
- Step 5** In the Search By Device Model pane, choose the phone protocol that you want to display.
- Step 6** Click the **Any Model or Device Model** radio button.
- If you click the **Device Model** radio button, choose a phone model that you want to display.
- Step 7** Click **Next**.
- Step 8** In the Search With Name pane, click the radio button that applies and enter the appropriate information in the corresponding fields.
- Step 9** In the Monitor following attributes pane, check one or all of the search attributes.
- Step 10** Click **Finish**.
- The **Device Information** window appears. For more information about the device, choose any field that appears in the left pane of the window.
-

View Device Properties

You can view the properties of devices that appear in the RTMT device monitoring pane. Follow this procedure to view device properties.

Procedure

- Step 1** Find and display the device in the RTMT device monitoring pane.
- Step 2** Perform one of the following tasks:
- Right-click the device for which you want property information and choose **Properties**.
 - Click the device for which you want property information and choose **Device > Properties**.
- Step 3** To display the device description information, click the **Description** tab.

Step 4 To display other device information, click the **Other Info** tab.

Set Up Polling Rate for Devices and Perfmon Counters

Unified Communications Manager polls counters, devices, and gateway ports to gather status information. In the RTMT monitoring pane, you configure the polling intervals for the performance monitoring counters and devices.



Note High-frequency polling rate may adversely affect Unified Communications Manager performance. The minimum polling rate for monitoring a performance counter in chart view is 5seconds; the minimum rate for monitoring a performance counter in table view is 1second. The default value for both is 10seconds.



Note The default value for devices is 10minutes.

Follow this procedure to update the polling rate:

Procedure

- Step 1** Display the device or performance monitoring counter in the RTMT monitoring pane.
 - Step 2** Click the device and choose **Edit > Polling Rate**.
 - Step 3** In the Polling Interval pane, specify the time that you want to use.
 - Step 4** Click **OK**.
-

CTI Application, Device, and Line Monitoring

The CTI category monitors CTI Manager activities and provides CTI search capability. With CTI Manager, you can monitor the number of open devices, lines, and CTI connections.

You can specify criteria for the CTI applications, devices, and lines that include CTI status, device name, application pattern, and attributes.



Tip To find the matching item, RTMT requires that you activate the Cisco RIS Data Collector service in the **Service Activation** window in Cisco Unified Serviceability.

Results display in a table with a row for each matched device, a column for each of the specified attributes, and a time stamp of the device that has been opened or closed and the application that controls the device media.

View CTI Manager Information

To display a chart of open devices, lines, and CTI connections for each server or for each server in a cluster (if applicable), click **CallManager** in the quick launch channel; double-click **CTI**, and then click the **CTI Manager** icon.

Find CTI Applications to Monitor

Perform the following procedure to find specific CTI applications to monitor:

Procedure

- Step 1** Perform one of the following tasks:
- On the Quick Launch Channel, perform the following steps:
 - a. Click **CallManager**.
 - b. In the tree hierarchy, double-click **CTI**.
 - c. Click the CTI Search icon.
 - Choose **CallManager > CTI > CTI Search > CTI Applications**. The selection window appears where you can enter the search criteria.
- Step 2** From the **CTI Manager** drop-down list box, choose the CTI Manager that you want to monitor.
- Step 3** From the **Applications Status** drop-down list box, choose the application status.
- Step 4** Click **Next**.
- Step 5** In the Application Pattern pane, click the radio button that applies.
- Step 6** Enter the information in the field for the radio button that you clicked; for example, if you clicked the **IP Subnet** radio button, enter the IP address and the subnet mask in the field.
- Note** If you enter the IPv6 address, the IP Subnet does not apply.
IPv6 support does not apply to Cisco Business Edition 5000.
- Step 7** Click **Next**.
- Step 8** In the **Monitor following attributes** window, check one or all of the check boxes for the attributes that you want to monitor.
- Step 9** Click **Finish**.
- The applications monitoring pane displays the information that you choose.
-

Find CTI Devices To Monitor

Follow this procedure to find specific CTI devices to monitor.

Procedure

- Step 1** Perform one of the following tasks:
- On the Quick Launch Channel, perform the following steps:
 - a. Click **CallManager**.
 - b. In the tree hierarchy, double-click **CTI**.
 - c. Click the CTI Search icon.
 - Choose **CallManager > CTI > CTI Search > CTI Devices**. The selection window appears where you can enter the search criteria.
- Tip** If you right-click the option, choose **Monitor**.
- Step 2** From the **CTI Manager** drop-down list box, choose the CTI Manager that you want to monitor.
- Step 3** From the **Devices Status** drop-down list box, choose the device status.
- Step 4** In the Devices pane, click the radio button that applies.
- Tip** If you chose **Device Name**, enter the device name in the field.
- Step 5** Click **Next**.
- Step 6** In the **Application Pattern** window, click the radio button that applies.
- Step 7** Enter the information in the field for the radio button that you clicked; for example, if you clicked **IP Subnet**, enter the IP address and subnet mask in the field.
- Note** If you enter the IPv6 address, the IP Subnet does not apply.
IPv6 support does not apply to Cisco Business Edition 5000.
- Step 8** Click **Next**.
- Step 9** In the **Monitor following attributes** window, check one or all check boxes for the attributes that you want to monitor.
- Step 10** Click **Finish**.
- The devices monitoring pane displays the information that you chose.
-

Find CTI Lines To Monitor

Follow this procedure to find specific CTI lines to monitor.

Procedure

- Step 1** Perform one of the following tasks:
- On the Quick Launch Channel, perform the following steps:
 - a. Click **CallManager**.

- b. In the tree hierarchy, double-click **CTI**.
- c. Click the CTI Search icon.

- Choose **CallManager > CTI > CTI Search > CTI Lines**. The selection window appears where you can enter the search criteria.

Tip If you right-click the option, choose **Monitor**.

Step 2 From the **CTI Manager & Status** drop-down list box, choose the CTI manager that you want to monitor.

Step 3 From the **Lines Status** drop-down list box, choose the status.

Step 4 In the Devices pane, click the radio button that applies.

Tip If you chose **Device Name**, enter the device name in the field.

Step 5 In the Lines pane, click the radio button that applies:

Note If you chose **Directory Number**, enter the directory number in the field.

Step 6 Click **Next**.

Step 7 In the Application Pattern pane, click the radio buttons apply:

Step 8 Enter the information in the field for the radio button that you clicked; for example, if you clicked **IP Subnet**, enter the IP address and subnet mask in the field.

Note If you enter the IPv6 address, the IP Subnet does not apply.

IPv6 support does not apply to Cisco Business Edition 5000.

Step 9 Click **Next**.

Step 10 In the **Monitor following attributes** window, check one or all check boxes for the attributes that you want to monitor.

Step 11 Click **Finish**.

The lines monitoring pane displays the information that you choose.

View Application Information

You can view the application information for selected devices such as the Cisco Unified IP Phone, CTI port, and CTI route point. Follow this procedure to view application information.

Procedure

Step 1 Find and display the devices in the RTMT monitoring pane.

Step 2 Perform one of the following tasks:

- Right-click the device for which you want application information; for example, CTI; then, choose **App Info**.
- Click the device for which you want application information and choose **Device > App Info**.

The Application Information window displays the CTI manager server name, application ID, user ID, application IP address, application status, app time stamp, device time stamp, device name, and CTI device open status.

Step 3 To view updated information, click **Refresh**. To close the window, click **OK**.

Access Learned Pattern and SAF Forwarder Reports for Call Control Discovery

Learned Pattern reports and Service Advertisement Framework (SAF) forwarder reports support the Call Control Discovery feature. When you configure the call control discovery feature, Unified Communications Manager advertises itself and its hosted DN patterns to other remote call-control entities that use the SAF network. Likewise, these remote call-control entities advertise their hosted DN patterns, which Unified Communications Manager can learn and insert in digit analysis. For more information about the call control discovery feature, see “Call Control Discovery” in the *Cisco Unified Communications Manager Features and Services Guide*.



Note The learned pattern may be repeated in the report because the learned pattern may be coming from a different source; for example, it may be coming from a different IP address.

Learned Pattern reports include such information as learned pattern name, time stamp, and reachability status for the pattern. See the following table.

Table 8: Data From Learned Pattern Report

Column	Description
Pattern	Displays the name of the learned pattern from the remote call-control entity.
TimeStamp	Displays the date and time that the local Unified Communications Manager marked the pattern as a learned pattern.
Status	Indicates whether the learned pattern was reachable or unreachable
Protocol	Displays the protocol for the SAF-enabled trunk that was used for the outgoing call to the learned pattern; if the remote call-control entity has QSIG tunneling configured for the SAF-enabled trunk, the data indicates that QSIG tunneling was used; for example, EMCA is listed along with H.323 in this column.
AgentID	Displays the name of the remote call-control entity that advertised the learned pattern
IP Address	Displays the IP address for the call control entity that advertised the learned pattern; Displays the port number that the call-control entity uses to listen for the call.

Column	Description
ToDID	Displays the PSTN failover configuration for the learned pattern.
CUCMNodeId	Displays the ID from the local Unified Communications Manager node.

SAF Forwarder reports display information such as authentication status and registration status of SAF forwarders. See the following table.

Table 9: Data From SAF Forwarder Report

Column	Description
Name	Displays the name of the SAF forwarder that you configured in the SAF Forwarder Configuration window in Cisco Unified Communications Manager Administration.
Description	Displays the description for the SAF forwarder that you configured in the SAF Forwarder Configuration window in Cisco Unified Communications Manager Administration. If None displays, you did not enter a description for the SAF forwarder.
IP Address	Displays the IP address for the SAF forwarder, as configured in the SAF Forwarder Configuration window in Cisco Unified Communications Manager Administration.
Port	Indicates the port number that Unified Communications Manager uses to connect to the SAF forwarder; by default, Unified Communications Manager uses 5050.
Type	Indicates whether the SAF forwarder is classified as the primary or backup SAF forwarder.
Connection Status	Indicates whether Unified Communications Manager can connect to the SAF forwarder.
Authentication Type	Indicates that Unified Communications Manager used digest authentication to connect to the SAF forwarder.
Registration Status	Indicates whether the Unified Communications Manager is registered to the SAF forwarder.
Time Last Registered	Displays the date and time when the Unified Communications Manager last registered with the SAF forwarder.

Column	Description
No of Registered Applications	Displays the total number of CCD advertising and requesting services that are registered to the SAF forwarder.
No of Connection Re-Attempts	Displays the number of times that the call-control entity, in this case, the Unified Communications Manager, has attempted to connect to the SAF forwarder.

RTMT allows you to search based on different criteria; for example, if you specify a search for the remote call-control entity, all the learned patterns display for the remote call-control entity.

To access the Learned Patterns or SAF Forwarder reports in RTMT, perform the following procedure.

Procedure

-
- Step 1** To access the report, perform one of the following actions:
- For Learned Patterns: From the RTMT menus, choose **CallManager > Report > Learned Pattern**. Or, Click the **CallManager** tab; then, click **Learned Pattern**.
 - For SAF Forwarders: From the RTMT menus, choose **CallManager > Report > SAF Forwarders**. Or, click the **CallManager** tab; then, click **SAF Forwarders**.
- Step 2** Choose the node from the **Select a Node** drop-down list box.
- For learned pattern reports, if the Cisco CallManager Service is running but the CCD requesting service is not running on that node, a message displays that the CCD Report Service is not working after you choose the node. If the CCD requesting service is not active on the node that you choose, the report displays as empty.
- Step 3** Review the data in the report.
- See the Data from Learned Pattern Report table and the Data from SAF Forwarder Report table for descriptions of the items that were reported.
- Step 4** After the data appears, if you want to filter the results based on specific criteria, click the **Filter** button; specific the criteria that you want to search, click **Apply** and then **OK**.
- Step 5** To display the most current results, click **Refresh**.
- Step 6** If you want to search on a specific string in the data, click the **Find** button, enter the string, then, click **Find Next**.
- Step 7** If you want to save the results, click **Save**, and choose either **XML** or **Text**, depending on how you want to save the results. Browse to the location where you want to save the data, name the file that you want to save; then, click **Save**.
-

Access Called Party Trace Report

Called Party Trace allows you to configure a directory number or list of directory numbers that you want to trace. You can request on-demand tracing of calls using the Session Trace Tool.

The Called Party Trace feature provides information on the calling party number in addition to the called party number within a node. You can use the information from each node to trace a call back to the originator.



Note You must be an authorized administrator to access the directory number logs. To grant authorization to a specific role using MLA, the “Called Party Tracing” resource must have read permission enabled for the role.

To access the Called Party Trace report in the Real-Time Monitoring Tool, follow these steps:

Procedure

Step 1 From the RTMT menu, choose **CallManager > Callprocess > Called Party Trace**. Or, Click the **CallManager** tab; then, click **Called Party Trace**.

Step 2 Select the start time of the report using the drop-down box.

Note The start time cannot be older than five years from the current date.

Step 3 The report shows the following information:

- Start time
- Calling directory number
- Original called directory number
- Called directory number
- Calling device name
- Called device name

Note When 5 megabytes of trace file entries have been written to the log files being accessed by RTMT, the oldest log information is overwritten by new trace entries as they are recorded. The RTMT lists a maximum of 500 entries for any given search.

Intercompany Media Services

IME Service Monitoring

The IME Service category monitors the following items:

- **Network Activity:** Displays the activity on the Unified Communications Manager that relates to Cisco Intercompany Media Engine. The Network Activity object displays these charts:
 - **IME Distributed Cache Health:** Displays the health of the IME distributed cache based on the IMEDistributedCacheHealth counter for the IME Server performance object.

- **IME Distributed Node Count:** Displays an approximation of the number of nodes in the IME distributed cache, based on the value of the `IMEDistributedCacheNodeCount` counter for the IME Server performance object. Because each physical Cisco Intercompany Media Engine server contains multiple nodes, the number that displays in the chart does not indicate the number of physical Cisco Intercompany Media Engine servers that participate in the IME distributed cache.
- **Internet BW Received:** Displays the amount of bandwidth in Kbits/s that the Cisco IME service uses for incoming Internet traffic and represents the `InternetBandwidthRecv` counter for the IME Server performance object.
- **Internet BW Send:** Displays the amount in Kbits/s that the Cisco IME service uses for outgoing Internet traffic and represents the `InternetBandwidthSend` counter for the IME Server performance object.
- **IME Distributed Cache Stored Data Records:** Displays the number of IME Distributed Cache records that the Cisco Intercompany Media Engine server stores and represents the `IMEDistributedCacheStoredData` counter for the IME Server performance object.

To display information about network activity, choose **Cisco IME Service > Network Activity**.

- **Server Activity:** Allows you to monitor the activity on the Cisco Intercompany Media Engine server. The Server Activity object displays these charts:
 - **Number of Registered Clients:** Displays the current number of clients that connect to the Cisco IME service and represents the value of the `ClientsRegistered` counter for the IME Server performance object.
 - **IME Distributed Cache Quota:** Indicates the number of individual DIDs that can be written into the IME Distributed Cache, by Unified Communications Manager servers attached to this IME server. This number is determined by the overall configuration of the IME Distributed Cache, and the IME license installed on the IME server.
 - **IME Distributed Cache Quota Used:** Indicates the total number of unique DID numbers that have been configured, to be published through enrolled patterns for Intercompany Media Services, by Unified Communications Manager servers currently attached to this IME server.
 - **Terminating VCRs:** Indicates the total number of IME voice call records that are stored on the Cisco IME server for the terminating side of a call. These records can be used for validation of learned routes.
 - **Validations Pending:** Displays the number of pending validations on the Cisco IME service as well as the threshold for validations. This chart represents the `ValidationsPending` counter for the Cisco IME Server performance object.

To display information about server activity, choose **Cisco IME Service > Server Activity**.

IME System Performance Monitoring

The IME System Performance monitoring category provides the SDL Queue object that monitors the number of signals in the SDL queue and the number of signals that were processed for a particular signal distribution layer (SDL) queue type. The SDL queue types comprise high, normal, low, and lowest queue. You can monitor the SDL queue for a particular server or for an entire cluster (if applicable).

To display information about the SDL Queue, choose **Cisco IME Service > SDL Queue**. Select the type from the **SDL Queue Type** drop-down list box.

Monitor Intercompany Media Services



Tip The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate for the AMC (Alert Manager and Collector) service parameter changes, the polling rate in the precanned window also updates. In addition, the local time of the RTMT client application, not the back end server time, provides the basis for the time stamp in each chart.



Tip To zoom in on the monitor of a predefined object, click and drag the left mouse button over the area of the chart that interests you. Release the left mouse button when you have the selected area. RTMT updates the monitored view. To zoom out and reset the monitor to the initial default view, press the **R** key.

The Intercompany Media Services monitoring category monitors the following items:

- **Routing:** Displays the total number of Cisco Intercompany Media Engine routes that Unified Communications Manager maintains. This total includes the following routes:
 - Learned routes that represent the phone numbers that the Cisco Intercompany Media Engine client learned and that exist in the Unified Communications Manager routing tables
 - Unique domains of peer enterprises for which Cisco Intercompany Media Engine routes exist
 - Published routes that represent the number of direct inward dialing numbers (DIDs) that were published successfully to the IME distributed hash table across all Cisco Intercompany Media Engine services
 - Rejected routes that represent the number of learned routes that were rejected because the administrator blocked them.

These charts represent the following performance counters for the Cisco IME Client performance object: RoutesLearned, DomainsUnique, RoutesPublished, and RoutesRejected.

To display information about routing, choose **CallManager > Cisco IME Client > Routing**.

- **Call Activities:** Allows you to monitor the total number of Cisco Intercompany Media Engine calls. This total includes the following types of calls:
 - Calls that were attempted (including calls that were accepted, busy, no answer, and failed)
 - Calls that were received
 - Calls that were set up (that is, made by Unified Communications Manager and accepted by the remote party)
 - Calls that were accepted (that is, received by Unified Communications Manager and answered by the called party)
 - Calls that completed fallback to the PSTN

- Calls that did not successfully fall back to the PSTN.

These charts represent the following performance counters for the Cisco IME Client performance object: CallsAttempted, CallAccepted, CallsReceived, CallsSetup, IMESetupsFailed, and FallbackCallsFailed.

To display information on call activities, choose **CallManager > Cisco IME Client > Call Activities**.

IM and Presence Monitoring

IM and Presence and Cisco Jabber summary monitoring

The Real-Time Monitoring Tool provides a set of important performance counters that assist you in monitoring the overall performance of the IM and Presence service and Cisco Jabber. The IM and Presence and Cisco Jabber summaries in RTMT allow you to monitor important common information in a single monitoring pane.

To display information on important performance counters that reflect the overall performance of IM and Presence and Cisco Jabber, select **IM and Presence > IM and Presence Summary** or **IM and Presence > Cisco Jabber Summary**.

Under IM and Presence Summary, review the following information:

- PE Active JSM Sessions
- XCP JSM IM Sessions
- Total IMs Handled
- Current XMPP Clients Connected
- Total Ad hoc Chat Rooms
- Total Persistent Chat Rooms

Under Cisco Jabber Summary, review the following information:

- Client Soap interface
- SIP Client Registered Users
- SIP Client Registered User Failures
- SIP Client IM Messages

Cisco XCP counters

Number of connected XMPP clients

Cisco XCP CM—CmConnectedSockets

View the current number of XMPP clients connected to the Cisco XCP Connection Manager on an individual IM and Presence server. This number should rise and fall based on the usage patterns of your deployment. Further investigation may be required if this number is higher than expected for your user base.

Number of connected CAXL clients

Cisco XCP Web CM—WebConnectedSockets

View the current number of CAXL web clients connected to the Cisco XCP Web Connection Manager on an individual IM and Presence server. This number should rise and fall based on the usage patterns of your deployment. Further investigation may be required if this number is higher than expected for your user base.

Number of active outbound SIP subscriptions

Cisco XCP SIP S2S—SIPS2SSubscriptionsOut

View the current number of active outgoing SIP Subscriptions being maintained by the Cisco XCP SIP Federation Connection Manager service on the IM and Presence server. Monitor this counter if IM and Presence server is configured for SIP Interdomain Federation or SIP Intradomain Federation.



Note The total combined count of SIPS2SSubscriptionsOut and SIPS2SSubscriptionsIn must not rise above 260,000 on any single IM and Presence server.

Number of active inbound SIP subscriptions

Cisco XCP SIP S2S—SIPS2SSubscriptionsIn

View the current number of active inbound SIP Subscriptions being maintained by the Cisco XCP SIP Federation Connection Manager service on the IM and Presence server. Monitor this counter if IM and Presence server is configured for SIP Interdomain Federation or SIP Intradomain Federation.



Note The total combined count of SIPS2SSubscriptionsOut and SIPS2SSubscriptionsIn must not rise above 260,000 on any single IM and Presence server.

Number of IM sessions

Cisco XCP JSM—JsmIMSessions

This counter gives the total number of IM sessions on the IM and Presence node across all users. The Presence Engine (PE), which provides presence composition services and rich, always-on, network presence, creates an IM session on behalf of all users at PE start-up time. This is necessary so that network presence events such as Unified Communications Manager Telephony Presence and Exchange Calendar notifications are reflected in a user's presence even if that user is not logged in to any IM clients.

Every licensed user on a IM and Presence node has one IM Session for Presence Engine rich presence composition in addition to one IM Session for any logged in clients.

Example

There are 100 licensed users on the IM and Presence node as follows:

- 50 users are not logged in
- 40 users are logged in on one IM client
- 10 users are logged in on two IM clients

This gives a total of 160 IM Sessions comprised of:

- 100 x 1 for rich Presence Engine sessions
- 40 x 1 for users logged in on a single client
- 10 x 2 for users logged in on two clients

Total IM Packets

Cisco XCP JSM—JsmTotalMessagePackets

This counter gives the total number of IM packets handled by the IM and Presence node across all users.

Note that if user Alice sends an IM to user Bob, and both users are assigned to the same IM and Presence node, then this IM packet will be counted twice. This is because the XCP Router and Jabber Session Manager treat the two users separately. For example, Alice's privacy rules will be applied to the IM packet before it is delivered to Bob, and then Bob's privacy rules will be applied to the IM packet before it is delivered to Bob's client. Whenever IM and Presence handles an IM packet it is counted once for the originator and once for the terminator.

If Alice and Bob are assigned to different IM and Presence nodes and Alice sends an IM packet to Bob, then the IM will be counted once on Alice's node and once on Bob's node.

IMs in last 60 seconds

Cisco XCP JSM—JsmMsgsInLastSlice

This counter gives the total number of IM packets handled by the IM and Presence node across all users in the past 60 seconds. This counter is reset to 0 every 60 seconds. The same rules for counting IM packets apply as for JsmTotalMessagePackets. Monitoring of this counter will help identify the busy IM hours in your organization.

Per user and per session counters

Cisco XCP JSM Session Counters

These per session counters only exist for the duration of an IM session or user login. One set of these counters exists for each Presence Engine network presence session, and one set of these counters exists for each client login session. In the example given above for the IMSessions counters, there are 160 different sets of Cisco XCP JSM Session Counters. When a user logs out, or when the Presence Engine is stopped, the associated Cisco XCP JSM Session Counters instance is deleted.

You can use the Cisco XCP JSM Session counters to get a snapshot of all users currently logged in. These counters can be accessed from the CLI using the following command:

```
admin: show perf list instances "Cisco XCP JSM Session Counters"
```

Every user assigned to an IM and Presence node that is logged into the system will have a set of JSM session counters for their current logged in client session and also their Presence Engine network session. On an IM and Presence node with 5000 users logged in this would result in a minimum of 10,000 sets of JSM Session counters. Updating these counters with new values as they change would place the system under stress. To combat this, JSM Session counter values are cached locally by the system and only updated to RTMT every 30 minutes.

IM packets sent per session

Cisco XCP JSM Session Counters—JsmSessionMessagesIn

This counts the total number of IM packets sent by the user from his IM client or session. Note that the terminology JsmSessionMessagesIn is used as from the perspective of the IM and Presence server, the IM packet sent by the client is an inbound IM packet to IM and Presence.

IM packets received per session

Cisco XCP JSM Session Counters—JsmSessionMessagesOut

This counts the total number of IM packets sent to the user on his IM client or session. Note that the terminology SessionMessagesOut is used as from the perspective of the IM and Presence server, the IM packet is sent to the client and is an outbound IM packet from IM and Presence.



Note JsmTotalMessagePackets, JsmMsgsInLastSlice, JsmSessionMessagesIn and JsmSessionMessagesOut each represent instant message packets being sent to IM and Presence and are not exact figures of Instant Messages on the system. The amount of IM packets sent to IM and Presence per IM can vary depending on the client in use.

Total text conferencing rooms

Cisco XCP TC—TcTotalRooms

This counter represents the total number of Text Conferencing rooms hosted on the node. This includes both ad hoc rooms and persistent chat rooms.

Total adhoc group chat rooms

Cisco XCP TC—TcAdHocRooms

This counter represents the total number of AdHoc chat rooms currently hosted on the node. Note that AdHoc chat rooms are automatically terminated when all users leave the room, so this counter should rise and fall in value regularly.

Total persistent chat rooms

Cisco XCP TC—TcPersistentRooms

This counter represents the total number of persistent chat rooms hosted on the node. Persistent chat rooms must be explicitly terminated by the room owner. You can monitor this counter to identify if the total number of persistent chat rooms is very large and also to help identify if some persistent chat rooms are not being used regularly anymore.

Per-chat room counters

Cisco XCP TC Room Counters

These pre-chat room counters exist only for the lifetime of a chat room. For ad hoc chat rooms, these counter instances are deleted when the Ad Hoc chat room is terminated. For persistent chat rooms, the counter instances are also deleted when the persistent chat room is terminated, however persistent chat rooms are long-lived, so they should rarely be terminated.

You can use these per-chat room counters to monitor the usage and participants in persistent (and ad hoc) chat rooms over their lifetime and can help identify persistent chat rooms that are no longer being used frequently.

You can use the Cisco XCP TC Room Counters to get a snapshot of all rooms that are currently hosted on the node. These counters can be accessed from the CLI using the following command:

```
admin:show perf list instances "Cisco XCP TC Room Counters"
```

IM packets received per room

Cisco XCP TC Room Counters—TCRoomMsgPacketsRecv

This counter represents the number of IM packets received per room.

Number of occupants per room

Cisco XCP TC Room Counters—TCRoomNumOccupants

This counter gives the current number of occupants of the chat room. Monitor this counter for Persistent Chat rooms to get an indication of the usage trend for the chat room.

It is possible to have a maximum of 16,500 Text Conferencing rooms on an IM and Presence node. Each of these rooms will have its own set of Per-Chat Room counters. Similar to JSM Session counters, updating these with new values as they change would place the system under stress. To combat this, Per-Chat Room counter values are cached locally by the system and only updated to RTMT every 30 minutes.

SIP proxy counters

Number of idle SIP proxy worker processes

SIP Proxy—NumIdleSipdWorkers

View the current number of idle, or free, SIP worker processes on the IM and Presence SIP Proxy. This counter gives a good indication of the load being applied to the SIP Proxy on each IM and Presence server. Monitor this counter if IM and Presence server is configured for SIP Interdomain Federation or SIP Intradomain Federation.

The number of idle processes can drop to zero on occasion and is not a cause for concern. However, if the number of idle processes are consistently below 5 processes, then it is an indication that the IM and Presence Server is being heavily loaded and requires further investigation

Cisco Unity Connection Monitoring

Port Monitor

The Port Monitor lets you monitor the activity of each Cisco Unity Connection voice messaging port in real time. This information can help you determine whether they system has too many or too few ports.

The Port Monitor provides information about each Cisco Unity Connection voice messaging port in real time. This information can help you determine the activity of each port and whether the system has too many or too few ports. The Port Monitor displays the information for each port as described in the following table.

Table 10: Fields and Descriptions in the Port Monitor

Field	Description
Port Name	The display name of the port in Cisco Unity Connection Administration.
Caller	For incoming calls, the phone number of the caller.
Called	For incoming calls, the phone number that was dialed.
Reason	If applicable, the reason why the call was redirected.
Redir	The extension that redirected the call. If the call was redirected by more than one extension, this field shows the extension prior to the last extension.
Last Redir	The last extension that redirected the call.
Application Status	The name of the conversation that Cisco Unity Connection is playing for the caller. When the port is not handling a call, the status displays Idle.

Field	Description
Display Status	The action that the conversation is currently performing. When the port is not handling a call, the status displays Idle.
Conversation Status	Specific details about the action that the conversation is performing. When the port is not handling a call, the status displays Idle.
Port Ext	The extension of the port.
Connected To	For Unified Communications Manager SCCP integrations, the IP address and port of the Unified Communications Manager server to which the ports are registered.



Note Depending on the information that the phone system integration provided and the status of the call, some fields may remain blank.

Start Cisco Unity Connection Port Monitor Polling

Perform the following steps to use the Port Monitor.



Note Setting a low polling rate may impact system performance.

Procedure

- Step 1** In the Real Time Monitoring Tool, access Unity Connection and click **Port Monitor**. The **Port Monitor** window appears.
- Step 2** In the **Node** drop-down box, choose a Cisco Unity Connection server.
- Step 3** In the Polling Rate field, accept the default or enter the number of seconds between updates in the data on the **Port Monitor** tab; then, click **Set Polling Rate**.
- Step 4** Click **Start Polling**. The **Port Monitor** window displays the status of all voice messaging ports on Cisco Unity Connection.



CHAPTER 4

Cisco Unified Analysis Manager

- [Cisco Unified Analysis Manager Preferences, on page 69](#)
- [Cisco Unified Analysis Manager Limitations, on page 72](#)
- [Cisco Unified Analysis Manager Setup, on page 73](#)
- [Cisco Unified Analysis Manager Tools, on page 74](#)
- [Cisco Unified Analysis Manager Troubleshooting, on page 90](#)

Cisco Unified Analysis Manager Preferences

Use the Unified Analysis Manager dropdown menu to set preferences for:

FTP Server Setup

This function allows you to configure a FTP Server which you can then use to export information to. These servers can be Cisco TAC FTP servers. This information can include things such as logs, trace files, and system call trace information.

By default, the Cisco TAC FTP server will be pre-populated. You can modify this configuration for the default FTP server.

The FTP Server option allows you to manage the configured servers. You can perform the following operations:

- Add a new FTP server
- Edit an existing FTP server
- Delete FTP servers
- Test the connection of an FTP server

Cisco TAC has two FTP servers you can configure for exporting files:

- <ftp-rtt.cisco.com>
- <ftp-sj.cisco.com>



Note On both servers, files should be uploaded to the **/incoming** directory.

Access FTP Server Options

The following procedure explains how to access the FTP Server Options:

Procedure

- Step 1** From the Unified Analysis Manager drop-down menu, select **AnalysisManager > Preferences**. The **Preferences** window displays. Click **FTP Server**.
 - Step 2** The **FTP Servers** screen displays with a list of configured servers and buttons to **Add**, **Edit**, or **Delete** a server. The **Test Connection** button allows you to test connectivity to a server.
 - Step 3** Use the buttons to select the option you want.
-

Add or Edit FTP Server

Follow this procedure to add an FTP Server or edit an existing configuration:

Procedure

- Step 1** From the Unified Analysis Manager drop-down menu, select **AnalysisManager > Preferences**. The Preferences window appears. Click **FTP Server**.
 - Step 2** The **FTP Servers** screen displays with a list of configured servers and buttons to **Add**, **Edit**, or **Delete** a server. The **Test Connection** button allows you to test connectivity to a server.
 - Step 3** Click the **Add** button to add a server or the **Edit** button to edit an existing configuration. The **Add FTP Server** screen appears.
 - Step 4** In the **Name/IP Address** field, enter the name or the IP address of the FTP server you are adding.
 - Step 5** In the **Protocol** field, select either the FTP or SFTP protocol, depending on the type of server you are connecting to. Use SFTP if you are connecting to a Cisco TAC server.
 - Step 6** In the **User Name** and **Password** fields, enter the username and password that gives you access to the server.
 - Step 7** In the **Port** field, enter the port number on the server that you will be using.
 - Step 8** In the **Destination Directory** field, enter the path for the directory to which you will be exporting files. If you are adding a Cisco TAC server, use the `/incoming` directory.
 - Step 9** Click the **OK** button to add the server. You can use the **Cancel** button to end the operation without adding the FTP server.
-

Set Up Mail Server

This option allows you to configure a mail server for the purpose of notifying a set of user configured recipients on the status of Unified Analysis Manager operations such as trace and log collections and file transfers.

You must configure at least one mail server in order to be able to send a notification.



-
- Note**
- You can configure a maximum of two mail servers.
 - You can only use mail servers configured with this option for Unified Analysis Manager notifications. For RTMT notifications, you must configure a separate mail server.
-

Add or Edit Mail Server

The following procedure explains how to add a Mail Server or edit an existing configuration:

Procedure

- Step 1** From the Unified Analysis Manager drop-down menu, select **AnalysisManager > Preferences**. The **Preferences** window displays. Click **Mail Server**.
- Step 2** The **Mail Servers** screen appears with a list of configured servers and buttons to **Add**, **Edit**, or **Delete** a server. The **Test Connection** button allows you to test connectivity to a server. The bottom part of the screen shows the recipients listed for each server and buttons to **Add**, **Edit**, or **Delete** a recipient.
- Step 3** Click the **Add** button to add a server or the **Edit** button to edit an existing configuration. On clicking the **Add** button, the **Add Mail Server** screen appears.
- Step 4** In the **Name/IP Address** field, enter the name or the IP address of the Mail server you are adding.
- Step 5** In the **Port No.** field, enter the port number on the server that you will be using.
- Step 6** In the **Sender UserID** field, enter the sender user ID that you need to notify.
- Note** **Name/IP Address**, **Port No.**, and **Sender UserID** are mandatory fields.
- Step 7** Click the **OK** button to add the server. You can use the **Clear** button to clear the field, or the **Cancel** button to end the operation without adding the Mail server.
- Step 8** To add or edit a recipient, go back to the Mail Server screen and Click the **Add** button to add a recipient or the **Edit** button to edit an existing configuration. The **Add Mail Server** screen appears.
- Step 9** In the **Email address** field, enter the name or the email address of the recipient you are adding.
- Step 10** Click the **OK** button to add the recipient. You can use the **Cancel** button to end the operation without adding the recipient.
-

Set Trace Collection Directory

Follow this procedure to use the Trace Collection option under Preferences to set a directory for trace logs:

Procedure

- Step 1** From the Unified Analysis Manager drop-down menu, select **AnalysisManager > Preferences**. The **Preferences** window appears. Click **Trace Collection**.

- Step 2** The **Trace Collection** screen appears. Enter the directory you want to use for traces logs in the **Download Directory** box, or use the **Browse** button to locate the directory. Optionally, you can click the **Default** button to select the default directory.
- Step 3** Click **Save**.
-

Cisco Unified Analysis Manager Limitations

Please consider the following limitations when you use the Unified Analysis Manager.

- The maximum number of call records that the CallSearch Report can display is 500.
- The maximum number of call records that the Call Track Report can display is 100.
- Since there is no globally unique callID to use, Unified Analysis Manager uses link-by-link approach to trace the call. If any record for a call is missing in one of the products in the call path, the link will be broken for the rest of the chain and the tracking will not be complete.
- Call records are not stored in the database orderly based on any particular column. When running Call Search Report, the number of returned records is limited to 500. The 500 records that are retrieved may not be the earliest (based on originating time, connection time, or disconnect time) in the specified time range. To make sure all of the call records within the specified time range are retrieved, you need to shorten the time range until the returned number of records is less than 500.
- The Unified Analysis Manager option is not displayed when the Unified RTMT is connected to a Cisco Unity Connection or IM and Presence node, because these products do not have a Call Record database.
When you use the Unified RTMT to connect to a Unified Communications Manager or a Cisco Business Edition 5000 server, you can add nodes to include Cisco Unity Connection and IM and Presence servers in the Unified Analysis Manager.
- Call Tracking does not support tracking of SIP Unified Outbound Option calls from Unified CCE and Unified IME to Cisco IOS gateways.
- Call Tracking does not support direct call tracking of call paths using a GED-125 protocol from Unified CCE to Unified CVP.
- Unified Communications Manager needs to be in the call path for tracking calls from Unified Communications Manager.
- Call tracking only supports single branch tracking from Unified Communications Manager.
- No Call Detail Records (CDR) are generated for calls on the MGCP gateway, because the gateway does not implement call control and Q.931 is tunneled to the Unified Communications Manager for signaling. The CDR is available only on the Unified Communications Manager.
- With ACS servers, Unified Analysis Manager is used only for call tracing, and then used only if you want to include gateway records and information in the tracing data. If you do not have an ACS server or a supported hardware/software version of the ACS server, most of Unified Analysis Manager functions in your deployment will continue to work; however, your gateway information will not be included in your call traces.

Cisco Unified Analysis Manager Setup

The **Administration** option on the Unified Analysis Manager menu allows you to import device and group configurations from a .csv file to the Unified Analysis Manager tool.

Import Device and Group Settings

Follow this procedure to import device and group configuration from a .csv file into the Unified Analysis Manager.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Administration > Import**.
- Step 2** Select the .csv configuration file that you want to import.
- Step 3** Click the **Import** button.
- The selected file appears.
-

Scheduled Trace and Log Collection Job Status Display

This function allows you to display status of scheduled trace setting and log collection jobs. Jobs can be scheduled using the Unified Analysis Manager Tools. Once a device is added to a group, you can schedule trace setting and log collections jobs on the device.

A scheduled job is linked to the machine it is configured on, and the job cannot be run on a different machine. If the machine on which a job was scheduled is not usable for any reason, the old job can be cloned and saved as a new job with new parameters to be run on the new machine.

Jobs running on a device can have one of the following states:

- **Scheduled:** A job is scheduled within Unified Analysis Manager; however it has not started
- **Running:** A job that is currently either setting traces or collecting logs
- **Completed:** A job that is done
- **Pending:** A job that has completed one run of collecting logs and is waiting to start the next run.
- **Aborted:** A job that has stopped abnormally due to an unexpected error
- **Canceled:** A job that has stopped due to a cancel operation by the user.

The Job Status screen gives a system view of all the jobs in Unified Analysis Manager. For jobs that have multiple runs, the status and time of the last run is also shown in this page.

The following operations can be performed on a job:

- **View Details:** Use this option to get more detailed view of the job.

- **Cancel:** Use this option to cancel a job. The Cancel operation can only be done on the machine that the job is running or scheduled on. This option cannot be used for jobs that are in the Completed/Aborted/Canceled state.
- **Clone:** Use this option to select any job and save it as a new job. The job being cloned from can be in any state. This option allows you to change any attribute of the job before saving. Cloning a job does not impact the attributes of the job being cloned.

Upload and Transfer Files to FTP Server

This option allows you to transfer files to a configured FTP server and send an email to interested parties. You can use this option to transfer some files to another machine so they can be viewed by others.

This screen allows you to specify the files and folders to be transferred as well as any annotations to accompany those files.

Follow this procedure to transfer files to an FTP server:

Procedure

-
- Step 1** From the Unified Analysis Manager menu, select **Administration > Upload Files**.
The Upload Files screen appears.
 - Step 2** In the **Case ID** field, enter the number that Cisco TAC has assigned to the case.
 - Step 3** Use the drop-down list box in the **Send to Server** field to select the FTP server you are sending the file to.
 - Step 4** Use the **Notes** box to provide any additional information about the file.
 - Step 5** Use the **Send Email Notifications** check box if you want to add the email addresses to send a notification that the file is uploaded. To add multiple email addresses, add the mail ids separated by comma. The mail addresses can be only the <username> or it can be of the format `username@domain.com`.
 - Step 6** In the bottom section of the screen, in the **Files to upload** box, select the files you want to transfer. Use the **Add** or **Remove** buttons to select or deselect files from the system. The files selected will be zipped by default and then uploaded. The name of the zipped file will be of the format `<case id>_uploadedfile.zip`.
 - Step 7** Click the **OK** button to transfer the file.
-

Cisco Unified Analysis Manager Tools

This chapter provides information about the Unified Analysis Manager, which provides a set of tools that allows you to perform management tasks for specific devices and groups of devices.

Analyze Call Path Tool

The Analyze Call Path tool allows you to trace a call between multiple Cisco Unified Communications products. In order to trace a call using the Analyze Call Path tool, a node must be defined in Unified Analysis Manager and the node must belong to a group.



Note All nodes that you define are assigned to the AllNodes group by default. Use the Node Groups function if you want to assign the node to a different group. See the topics related to the Analyze Call Path setup for more information on configuring a Call Record Repository before using the Analyze Call Path function.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Tools > Analyze Call Path**.
The **Analyze Call Path** Information window appears.
- Step 2** Click the **Continue** button. The **Search Criteria** window appears.
- Step 3** Enter the number where the call originated in the **Calling Number** field. The default is an asterisk (*) which is a wildcard that will trace all numbers for the node.
- Step 4** Enter the number where the call terminated in the **Called Number** field. The default is an asterisk (*) which is a wildcard that will trace all numbers for the node.
- Step 5** Use the **Termination Cause** drop-down list box to select the reason for the call termination; either Abandoned, Dropped, Failed or all three.
- Step 6** Use the **Start Time** field to enter the start time for the trace.
- Step 7** Use the **Duration** field to indicate the length of the time period you want to trace.
- Step 8** Use the **Time Zone** drop-down list box to select the time zone where you are tracing calls.
- Step 9** Use the **Filter Nodes by Group** drop-down list box to select the group of nodes that you want to trace.
- Step 10** Use the **and Node Type** drop-down list box to select specific types of nodes that you want to trace.
When you have selected the Group and Node, information displays for each node. You can then use the check box for each node listed to select or deselect the node.
- Note** The limit for the number of nodes that you can select at a time is 20.
- Step 11** Click the **Run** button to begin the trace. The trace results display on the bottom of the window. If you selected multiple nodes, a tab is displayed for each node. Click the tab to display information for that node.
- Step 12** When the call record information appears, you can click the **View Full Path** button to see the complete call path. You can click the **View Record Details** button to see the information about the call. Use the **Save Results** button to save the reports.
-

Analyze Call Path Setup Considerations



Caution The Analyze Call Path Tool might not work correctly if your computer is set to a language other than English.

When using the Analyze Call Path tool, there are configuration considerations for each product that the Unified Analysis Manager manages.

The Analyze Call Path tool does not include information for Cisco Unity Connection and IM and Presence servers.

Cisco Unified Communications Manager

The following information applies when configuring the Analyze Call Path for Unified Communications Manager:

- Version Support—Unified Analysis Manager supports Release 8.0(1) and above for Unified Communications Manager.
- Call Record Repository—Use the first node (publisher) as the Call Record Repository with the HTTPS protocol and the default port 8443.
- User Group and Access Permissions—Users should belong to a user group whose role contains read and update permissions required to access Call Records for the following resources:
 - SOAP Call Record APIs
 - SOAP Control Center APIs
 - SOAP Diagnostic Portal Database Service
 - SOAP Log Collection API
 - SOAP Performance Informations APIs
 - SOAP Realtime Informations and Control Center APIs



Note New resources “SOAP Diagnostic Portal Database Service” and “SOAP Call Record APIs” added on an upgrade should not have the read and update permissions by default due to security reasons for existing users. Users need to create or copy the role to custom resources and update the required permissions for above mentioned resources as needed. See the *Cisco Unified Communications Manager Administration Guide* for additional details.

- Configuring NTP—Each product installed in the solution should be configured to point to same set of external NTP clock sources. NTP is required to be configured on all nodes that involve calls for SCT features. For Unified Communications Manager, use the **utils ntp config** CLI command to configure NTP.
- Enable Call Record Logging—In Cisco Unified Communications Manager Administration, go to the Service Parameter Configuration window, and choose the **Cisco CallManager Service**. Enable the **CDR Enabled Flag** and the **CDR Log Calls with Zero Duration Flag** parameters. Restart the **Cisco CallManager** service for change-notification to take effect immediately. Repeat this procedure for all nodes in the Unified Communications Manager cluster.



Note You can verify that flags are set as desired at <https://<HOSTNAME:PORT>/ccmadmin/vendorConfigHelp.do>

- CDR CAR Loader—Ensure your CDR Analysis and Reporting (CAR) Loader is set to **Continuous Loading 24/7**. To verify this:
 - Go to the Cisco Unified Serviceability and select **Tools > CDR Analysis and Reporting (CAR)** page. The CAR page opens in a new browser.
 - Go to **System > Scheduler > CDR Load page**.
 - Verify if Loader is not disabled and that **Continuous Loading 24/7** is enabled. This allows CDR records that are generated from Unified Communications Manager nodes to be loaded into the CAR database as soon as they arrive to Unified Communications Manager first node (publisher).
 If call records are not found on the Unified Communications Manager, it is possible that the CAR Loader failed or is having a delay loading the latest CDR records. If this occurs, go to the CAR **System > Database > Manual Purge** page and click the **Table Information** button. Check for the oldest and latest CDR records that are available in the CAR database. If records are not set to the latest date, go to **System > Log Screens > Event Log** and select **CDR Load** to check its recent run status to see if there were any Unsuccessful runs. If CDR Load failure is found, collect CAR Scheduler traces to provide to Cisco Support for troubleshooting.
- Raw Call Record Details—For information about Raw Call Record details help for Unified Communications Manager, see the *Cisco Unified Communications Manager Call Detail Records Administration Guide*.

Cisco Unified Contact Center Express

The following information applies when configuring the Analyze Call Path for Unified CCX:

- Version Support—Unified Analysis Manager supports Unified CCX version 8.0(1) and later.
- Call Record Repository—The Call Record Repository used for Unified CCX is either (or both in the case of a High Availability system) of the Unified CCX nodes. The database is active on both nodes and the data is replicated. The JDBC user is **uccxsct** and the password is the encrypted version of the TFTP password. The password is typically set by the Unified CCX administrator.
- Default user for adding Unified CCX Call Record Repository—The Informix user for adding (and connecting to) Unified CCX Call Record Repository is: **uccxsct**. You can reset the default install time password for above user in the Unified CCX Application **Administration > Tools > Password Management** page. Typically, the Unified CCX administrator will reset to the desired password and pass it on to the Unified Analysis Manager administrator.
- User Group and Access Permissions—Unified CCX does not require any additional user group and access permission to access Call Records. The access permissions of the uccxsct user is set by Unified CCX install for read access to specific tables. No external settings are required.
- Configuring NTP—To configure NTP for Unified CCX, go to **OS Administration > Settings > NTP Server**.
- Enable Call Record Logging—Unified CCX always generates Call Records by default, so no configuration is required to enable logging of Call Records.

Cisco Unified Intelligent Contact Management Enterprise/Cisco Unified Contact Center Enterprise

The following information applies when configuring the Analyze Call Path for Cisco Unified Intelligent Contact Management Enterprise (Unified ICME) and Unified CCE:

- **Version Support**—Unified Analysis Manager supports Release 8.0(1) and above for Unified ICME and Unified CCE.
- **Call Record Repository**—The Call Record Repository used for Unified ICME is either AW-HDS-DDS or HDS-DDS. The server used for Unified CCE is HDS/AW Database (port 1433).
- **User Group and Access Permissions**—For Release 8.0(1), the recommended user group and access permissions that are required to access Call records are the Windows only Authentication for SQL Server. This is done by using the **User List** tool from the Configuration Manager and creating a user with the right access privileges.
- **Configuring NTP**—Configuration for Time Synchronization of Unified CCE servers is based on Microsoft Windows Time Services. When setting up the Unified CCE router component, retain the default settings of the “Disable ICM Time Synchronization” box as checked. With the recommended default setting, the time synchronization for Unified CCE servers is provided by the Windows Time Service, which automatically synchronizes the computer's internal clock across the network. The time source for this synchronization varies, depending on whether the computer is in an Active Directory domain or a workgroup. For additional information on setting up Windows Time Service, refer to the Microsoft Windows Time Service Technical Reference documentation at:
[http://technet.microsoft.com/en-us/library/cc773061\(ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc773061(ws.10).aspx).
- **Enable Call Record Logging**—To check that Call Record logging is enabled, first be sure that the Unified Analysis Manager service on Unified CCE is enabled. Using the web setup, you need to install the AW-HDS-DDS or HDS-DDS servers with Administration and Data Server roles. Once you install these roles using the web setup, the call records are available by default.
- **Raw Call Record Details**—To find help for the Raw Call Record details, refer to the Schema Help which you can access from the Unified CCE Administration Tool group on either the AW-HDS-DDS or HDS-DDS server. You can also refer to the United CCE Database Schema Handbook for a specific release at
http://www.cisco.com/en/US/products/sw/custcosw/ps1844/tsd_products_support_series_home.html.



Note If you are using RTMT to monitor Cisco Unified Contact Center Enterprise, you must open the following file and change the value for ReadTimeout to 360:
`<RTMT_INSTALLATION_FOLDER_PATH>/conf/rtmt.xml`. If you don't change the value, RTMT will not be able to collect OPC logs because RTMT's default timeout value is greater than the time it takes to collect OPC logs.

Cisco Unified Customer Voice Portal

The following information applies when configuring the Analyze Call Path for Unified CVP:

- **Version Support**—United Analysis Manager supports Unified CVP Release 8.0(1) and above.
- **Call Record Repository**—Unified CVP uses the Unified CVP Reporting Server for the Call Record Repository.
- **User Group and Access Permissions**—Unified CVP uses Unified CVP OAMP to set user group and access permissions required to access Call Records:
 - All users trying to access Unified CVP records from the Unified CVP database need to be created through Unified CVP OAMP.

- Unified CVP Reporting users need to be granted the Unified CVP Reporting role in Unified CVP OAMP.
- User passwords may expire if security hardening is installed on the Unified CVP Reporting Server. SNMP monitor displays alerts when this happens.
- Configuring NTP—Configuration for Time Synchronization of the Unified CVP servers is based on Microsoft Windows Time Services. For additional information on setting up Windows Time Service, refer to the Microsoft Windows Time Service Technical Reference documentation at [http://technet.microsoft.com/en-us/library/cc773061\(ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc773061(ws.10).aspx).
- Enable Call Record Logging—To ensure that Call Record logging is enabled, do the following:
 - Unified CVP Reporting Server is not installed nor configured by default. Customers and Partners will have to install a Unified CVP Reporting Server to use the Analyze Call Path tool with Unified CVP.
 - Unified CVP Database schema needs to be laid down by the Unified CVP_database_config.bat file. This file needs to be run by the user after Unified CVP Reporting Server installation is completed.
 - Once a Unified CVP Reporting Server is installed, it needs to be configured through Unified CVP OAMP and a Unified CVP Call Server needs to be associated with the Unified CVP Reporting Server.
 - Follow the Unified CVP CAG and RPT guidelines for configuring the Unified CVP Reporting Server, Unified CVP VXML Server, and Unified CVP Call Servers.
 - Unified CVP data retention is 30 days, by default. You can customize this value through Unified CVP OAMP. Unless you back up the database, data will be purged at the end of data retention day. Backed up Unified CVP data is not accessible unless it is imported back into the database.
 - Unified CVP VXML Server filters need to be configured on Unified CVP OAMP. Refer to the Unified CVP OAMP guide for configuring these filters.
- Raw Call Record Details—For information relating to Raw Call Record details, refer to the *Unified CVP Reporting Guide for version 7.0(2)*.

Cisco Access Control Server and Cisco IOS Gateway

The following information applies when configuring the Analyze Call Path for Cisco Access Control (ACS) Servers and Cisco IOS Gateways:

- Version Support—Unified Analysis Manager supports ACS Release 5.1.
- Call Record Repository—To assign a Call Record Repository, one of the acs servers can be configured as a “collector” node.
- User Group and Access Permissions—To set user group and access permissions, after the ACS server is installed, in ssh/telnet access, enter **acsadmin** as the username and **default** as the password, You will be prompted to change the password.
- Configuring NTP—To configure an NTP server on an ACS server, use cli: **ntp server <NTP server IP/host>**.
- Enable Web View—Execute the CLI command **acs config-web-interface view enable** to enable web view. It is disabled by default.

- Cisco IOS gateways as ACS network devices or AAA clients—You need to configure ACS network device to have the correct Radius secret, which is the same secret as the one on the IOS gateway.
 - From acsadmin, access **Network Devices Group** > **Network Devices** and AAA clients to add the Cisco IOS gateway as the ACS network device or AAA client.
- For IOS configurations:
 - Use the CLI to configure NTP server: **ntp server** <NTP server IP/host>
 - Configure Cisco IOS gateway as a Radius client of the ACS server. Sample CLIs are below:

```

aaa new-model!
!
aaa group server radius acs
server 172.27.25.110 auth-port 1812 acct-port 1813
!
aaa authentication login h323 group acs
aaa authorization exec h323 group acs
aaa accounting connection h323 start-stop group acs
aaa session-id common
gw-accounting aaa
radius-server host 172.27.25.110 auth-port 1812 acct-port 1813
radius-server key cisco
radius-server vsa send accounting
radius-server vsa send authentication

```

- Be sure you have local login access to your Cisco IOS gateways.
- Enable Call Record Logging—To check that Call Records logging is enabled:
 - aaa accounting connection h323 start-stop group acs
 - aaa session-id common
 - gw-accounting aaa
 - radius-server host 172.27.25.110 auth-port 1812 acct-port 1813
 - radius-server key cisco
 - radius-server vsa send accounting

Nodes

Node Management

Once configured, a supported node is added to the Unified Analysis Manager database and will appear on the supported Unified Analysis Manager node list. You can identify a Unified Analysis Manager node in one of three ways:

- Importing node and group configuration from a configuration file.
- Manually entering node and group information with the Unified Analysis Manager screens.

- Discovering Unified Analysis Manager nodes from a seed node. A seed node is one that can return information about all the nodes within a deployment. Once discovered, the nodes can then be added to the node inventory. This option saves you from manually entering details of these nodes.

For Unified Communications Manager, the first node (publisher) is the seed node. For Cisco Unified Customer Voice Portal (Unified CVP), the Cisco Unified CVP OAMP server is the seed node.

This option allows you to perform Add/Edit/Delete and Discover operations on nodes. All configured Unified Analysis Manager nodes (manually entered, imported from a file, or discovered) will be displayed in the list of nodes.

You can use the Nodes option to perform the following functions:

- Add—The Add button allows you to manually enter a new node.
- Edit—The Edit button allows you to edit a node that has already been configured.
- Delete—The Delete button allows you to delete one or more nodes.
- Discover—You can use the Discover option, which applies only to a seed node. Use the Discover button to send a query to the seed node, which then returns information about all the nodes within that deployment that the seed node is aware of. Once discovered, the nodes are automatically added to the node inventory.
- Test Connectivity—The Test Connectivity button allows you to test connectivity to the node using the configured access information.

Display Node Summary

The Node summary screen displays all of the nodes currently configured with the Unified Analysis Manager application. Use the following procedure to access the Node summary screen.

Procedure

-
- Step 1** From the Unified Analysis Manager menu, select **Inventory > Nodes**.
- Step 2** The **Node** summary screen displays with a list of configured nodes and buttons to **Add**, **Edit**, **Delete**, **Discover**. The **Test Connection** button allows you to test connectivity to a node. Nodes are listed by **Name** and **Product Type**.
-

Add or Edit a Node

The following procedure explains how to add a node or edit an existing configuration:

Procedure

-
- Step 1** From the Unified Analysis Manager menu, select **Inventory > Nodes**.
The **Nodes** window appears.
- Step 2** Click the **Add** button to add a node or select a node from the list and click the **Edit** button to edit an existing configuration. The **Add** or **Edit Node** screen appears.

Note Fields on this screen that are marked with an asterisk (*) are required fields.

- Step 3** Use the **Product Type** drop-down list box to select a product.
- Step 4** In the **IP/Host Name** field, enter the hostname or the IP address of the node you are adding or editing.
- Step 5** In the **Transport Protocol** field, select the protocol you want to use. Options for this field depend on the **Product Type** you selected.
- Step 6** In the **Port Number** field, enter the port number on the node that you will be using.
- Step 7** In the **User Name** and **Password** fields, enter the username and password that gives you access to the node. Reenter the password in the **Confirm Password** field.
- Step 8** In the **Description** field, you can optionally provide a brief description of the node you are adding.
- Step 9** In the **Associated Call Record Repositories** and **Associated Trace File Repositories** fields, use the drop down list to select the respective servers you want to use for the node.
- Step 10** Use the **Associated Group** check boxes if you want to add the node to an existing group.
- Step 11** If you have a NAT or Terminal Server configuration, use the **Advanced** button to display the **Add Node-Advanced** screen. Enter the appropriate information in the **Alternate IP/Hostname** and **Alternate Port** fields.
- Step 12** Click the **Save** button to add the node. You can use the **Cancel** button to end the operation without adding the node.

Group Management

Within Unified Analysis Manager, you can create groups and add nodes to these groups. Once the nodes are added to a group, the user can perform a set of functions (for example, Trace Collection and Trace Setting) at a group level. A single node can belong to multiple groups. Nested groups will not be supported. Copying a group will not be supported.



Note The **AllNodes** group is added by default when a node is added in Unified Analysis Manager. Any nodes added to Unified Analysis Manager are part of the AllNodes group by default. The AllNodes group cannot be edited or deleted.



Note The number of groups you can have is limited to 20 and the number of nodes in a group (with the exception of the AllNodes group) is 20.

You can use the Group option to perform the following functions:

- **Add**—Use the Add button to create a group. Once a Group is created, you can add nodes to the group.
- **Edit**—Use the Edit button to select and edit group information. The Edit function also allows you add or delete the node members of the group. You can change which nodes belong to a group by adding or deleting nodes from that group.
- **Delete**—Use the Delete button to delete a Group. This function deletes that group from the Unified Analysis Manager. However, this function does not delete the individual nodes in the group from the Unified Analysis Manager. Nodes must be deleted individually using the Edit button.

Add or Edit Group

The following procedure explains how to add a group or edit an existing configuration:

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Inventory > Node Groups**.
 - Step 2** The **Groups** window displays. Click the **Add** button to add a group or select a group from the list and click the **Edit** button to edit an existing configuration. The **Add or Edit Group** screen displays.
 - Step 3** Use the **Group Name** field to enter the name of the group.
 - Step 4** Use the **Group Description** field to enter a brief description of the group.
 - Step 5** The **Select Nodes** section contains a list of each configured node. To add a node to the group, highlight the node in the list and click the **Add** button.
 - Step 6** When you have finished selecting nodes for the group, click the **Add** button to add the group or the **Update** button if you are editing the group content. You can use the **Cancel** button to end the operation without adding or editing the group.
-

Trace File Repository Management

This option allows you to perform Add/Edit/Delete operations on trace file repositories for the Unified Analysis Manager. Managed nodes typically use the trace file repository to off load its trace and log files. The Unified Analysis Manager can then connect to the trace file repository to collect logs and traces.

You can use the Trace File Repository option to perform the following functions:

- Add—The Add button allows you to manually enter a new server.
- Edit —The Edit button allows you to edit a server that has already been configured.
- Delete—The Delete button allows you to delete one or more servers.
- Test Connectivity—The Test Connectivity button allows you to test connectivity to a server using the configured access information.

Add or Edit Trace File Repository

The following procedure explains how to add a Trace File Repository or edit an existing configuration:

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Inventory > Trace File Repositories**.
- Step 2** The **Trace File Repositories** window displays with a list of configured servers. Click the **Add** button to add a new server or highlight a server on the list and click the **Edit** button to edit an existing configuration.
- Step 3** In the **IP/Host Name** field, enter the hostname or the IP address of the server you are adding.
- Step 4** In the **Transport Protocol** field, use the drop-down list to select the protocol you want to use, either SFTP or FTP.
- Step 5** In the **Port Number** field, enter the port number on the server that you will be using.

- Step 6** In the **User Name** and **Password** fields, enter the username and password that gives you access to the server. Reenter the password in the **Confirm Password** field.
- Step 7** In the **Description** field, you can optionally provide a brief description of the server you are adding.
- Step 8** In the **Associated Nodes** field, use the check boxes to select the nodes that will have access to the server.
- Step 9** If you have a NAT or Terminal Server configuration, use the **Advanced** button to display the **Add Trace File Repository-Advanced** screen. Enter the appropriate information in the **Alternate IP/Hostname** and **Alternate Port** fields.
- Step 10** Click the **Add** button to add the server or **Edit** to update the configuration. You can use the **Cancel** button to end the operation without adding the server.
-

Call Record Repository Management

This option allows you to perform Add/Edit/Delete operations on call record repositories for the Unified Analysis Manager. Managed nodes typically see the Call Record Repository to store the call data in a database. The Unified Analysis Manager can then connect to the Call Record Repository to obtain detailed call data.

You can use the Call Record Repository option to perform the following functions:

- Add: Allows you to manually enter a new server.
- Edit: Allows you to edit a server that has already been configured.
- Delete: Allows you to delete one or more servers.
- Test Connectivity: Allows you to test connectivity to a server using the configured access information.

Add or Edit Call Record Repository

Follow this procedure to add a call record repository or edit an existing configuration:

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Inventory > Call Record Repositories**.
- Step 2** The **Call Record Repositories** window appears with a list of configured servers. Click the **Add** button to add a new server or highlight a server on the list and click the **Edit** button to edit an existing configuration.
- Step 3** Use the **Repository Type** drop down list to select the product type for the node that will be accessing the server.
- Step 4** In the **Hostname** field, enter the name of the server you are adding.
- Step 5** In the **JDBC Port** field, enter the port number on the server that you will be using.
- Step 6** In the **JDBC User Name** and **JDBC Password** fields, enter the username and password that gives you access to the server. Re-enter the password in the **Confirm Password** field.
- Step 7** In the **Description** field, you can optionally provide a brief description of the node you are adding.
- Step 8** Use the **Nodes Available for Association** to select the nodes that will have access to the server.
- Step 9** If you have a NAT or Terminal Server configuration, use the **Advanced** button to display the **Add Call Record Repository-Advanced** screen. Enter the appropriate information in the **Alternate Hostname** and **Alternate Port** fields.

- Step 10** Click the **Add** button to add the server or **Edit** to update the configuration. You can use the **Cancel** button to end the operation without adding the server.
-

Define Trace Templates

If you have large number of nodes in a group, the Unified Analysis Manager provides templates as a shortcut for selecting components to change trace levels. You can also use templates to establish the new trace levels for nodes. You can also use template for collecting logs and trace files.

You can use the Templates option to perform the following functions:

- **Add**—The Add button allows you to create a new template. When adding a template you should note that you are doing so for node types and not actual nodes. For a given node type, there is a known fixed set of components and services.
- **Edit**—The Edit button allows you to edit an existing template.
- **Clone**—The Clone button allows you to save an existing template as a new template without replacing the original one.
- **Delete**—The Delete button allows you to delete a template.
- **Import**—Use the Import button to import predefined templates from a flat file.
- **Export**—Use the Export button to export a template to a flat file.

Add or Edit Template

The following procedure explains how to add a template or edit an existing configuration:



Note Unified Analysis Manager has default templates which cannot be edited or deleted.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Inventory > Templates**.
- Step 2** The **Templates** window displays. Click the **Add** button to add a template or select a template from the list and click the **Edit** button to edit an existing configuration. The **Add** or **Edit Template** screen displays.
- Step 3** Use the **Name** field to enter the name of the template.
- Step 4** Use the **Description** field to enter a brief description of the group.
- Step 5** The **Product Types** section contains a list of products supported by the Unified Analysis Manager. When you select a product from this list, the associated components display in the **Component Name** field.
- Step 6** For each component displayed, you can apply a trace level by using the drop down list in the **Trace Level** field.
- Note** Not all components are available for setting trace levels with this screen.
- Step 7** You can indicate if you want to collect trace logs for the component by checking the box in the **Collect** field.

- Step 8** Click the **Add** button to add the template or **Edit** to update the configuration. You can use the **Cancel** button to end the operation without adding the server.

Call Definitions

The following table defines the types of call termination.

Table 11: Call Definitions

Call Type	Call Termination Explanation
Failed call	The call is not connected for any reason other than user hang-up before the connection is completed.
Abandoned call	The call is not connected because the user hangs up after initiating the call.
Dropped call	The call is disconnected after connection for any reason other than user hanging up.

The following table lists the products that support the failed, abandoned, and dropped calls.

Table 12: Product Support for Call Types

Call Type	Unified Communications Manager/Cisco Business Edition	Unified CCE	Unified CVP	Unified CCX
Failed Call	Supported	Supported	Supported	Supported
Abandoned call	Supported	Supported	Not Supported	Supported
Dropped Called	Supported	Supported	Not Supported	Supported

Trace Collection

Unified Analysis Manager allows you to collect log and trace files from services of supported devices. There are three ways you can collect logs and trace files:

- **Collect Traces Now**— Collect Traces Now option allows you to collect trace files based on a selection of services on a device or group of devices for any period of time that has occurred in the past.
- **Schedule Trace Collection**— Schedule Trace Collection option allows you to collect trace files based on a selection of services on a device or group of devices for any period of time in the future.
- **Schedule Trace Settings and Collections**—Schedule Trace Settings and Collection option allows you to collect trace files from the present into the future and also specify the trace levels to be used during the scheduled time.

Collect Traces Now

The Collect Traces Now option allows you to collect trace files based on a selection of services on a device or group of devices for any period of time that has occurred in the past.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Tools > Collect Traces Now**.
The **Collect Traces Now** window displays.
 - Step 2** Select either the Group to display a list of supported groups or the Node for a list of supported devices. Select the groups or devices that you want to collect traces for.
 - Step 3** Use the **Select the template** to dropdown list to select the template containing the trace levels you want to use. Alternately, you can click the **Customize** button if you want to customize new trace levels for the group or device.
 - Step 4** Use the **Start Time** and **End Time** fields to select the collection time period.
 - Step 5** Use the **Referenced Time Zone** field to select the time zone for the collection time period.
 - Step 6** You can optionally click the **View Summary** button to view the Collection Summary window. This window contain a list of the components associated with the node.
 - Step 7** Click the **OK** button to start the trace. When the trace is completed, the window displays a Status Summary and Status Details for the trace. The Status Details provide the path to the directory to which the log was sent.
-

Schedule Trace Collection

Use the Schedule Trace Collection option if you want to collect trace files for any period of time from the present into the future.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Tools > Schedule Trace Collection**.
The **Schedule Trace Collection** window appears.
- Step 2** Select either the Group to display a list of supported groups or the Node for a list of supported devices. Select the groups or devices that you want to collect traces for.
- Step 3** Use the **Select the template to** dropdown list to select the template containing the trace levels you want to use. Alternately, you can click the **Customize** button if you want to collect traces for specific components.
- Step 4** Use the **Start Time** and **End Time** fields to select the collection time period.
- Step 5** Use the **Referenced Time Zone** field to select the time zone for the collection time period.
- Step 6** Use the **Collect Traces Every** dropdown field to indicate the frequency of the collection.
- Step 7** Optionally, you can choose to have an email notification sent regarding the trace collection. To do that, click the **Send Email Notification to** check box and enter the email address in the text box.
- Step 8** You can optionally click the **View Summary** button to view the **Collection Summary** window. This window contains a list of the components associated with the node.

- Step 9** Click the **OK** button to start the trace. When the trace is scheduled, the window displays a Status Summary and Status Details for the trace. When the trace is completed, a report is written to your log file and, if email information was provided, a system-generated email is sent.
-

Schedule Trace Settings and Collection

Use the Schedule Trace Settings and Collection option if you want to collect trace files for any period of time from the present into the future and, in addition, also specify the trace levels to be used during the scheduled time. If you change trace settings with this option, trace levels are restored to their default settings after the collection period is over.

Procedure

- Step 1** From the Unified Analysis Manager menu, select **Tools > Schedule Trace Collection**.
The **Schedule Trace Collection** window appears.
- Step 2** Select either the Group to display a list of supported groups or Node, for a list of supported devices. Select the groups or devices that you want to collect traces for.
- Step 3** Use the **Select the template to** drop-down list to select the template containing the trace levels you want to use. Alternately, you can click the **Customize** button if you want to customize new trace levels for the group or device. This option also allows you to collect traces for specific components.
- Step 4** Use the **Start Time** and **End Time** fields to select the collection time period.
- Step 5** Use the **Referenced Time Zone** field to select the time zone for the collection time period.
- Step 6** Use the **Collect Traces Every** drop-down field to indicate the frequency of the collection.
- Step 7** Optionally, you can choose to have an email notification sent regarding the trace collection. To do that, click the **Send Email Notification to** check box and enter the email address in the text box.
- Step 8** You can optionally click the **View Summary** button to view the **Collection Summary** window. This window contains a list of the components associated with the node.
- Step 9** Click the **OK** button to start the trace. When the trace is scheduled, the window displays a Status Summary and Status Details for the trace. When the trace is completed, a report is written to your log file and, if email information was provided, a system-generated email is sent.
-

Set Trace Levels

Use the Set Trace Level option to assign trace levels for a group of devices or individual devices. You can assign trace levels using a template or you can customize trace levels. Trace levels can be set for the following Cisco Unified Communications components:

- Unified Communications Manager: Allows setting trace levels for Unified Communications Manager and Common Trace Components.
- IM and Presence: Allows setting trace levels for Unified Presence and Common Trace Components.
- Cisco Unity Connection: Allows setting trace level for Cisco Unity Connection and Common Trace Components.
- Cisco Unified Contact Center Express: Allows setting trace level only for Common Trace Components.

The following table describes the general trace level settings for the Cisco Unified Communications components that are managed by Unified Analysis Manager.

Table 13: Unified Analysis Manager Trace Level Settings

Trace Level	Guidelines	Expected Volume of Traces
Default	This level should include all traces generated in abnormal paths. This level is intended for coding error traces and error s traces that normally should not occur.	Minimum Traces expected
Warning	This level should include traces for system-level operations. This should include all traces generated by “State Transitions” within components.	Medium Volume of Traces Expected when component is used
Informational	This should include traces that can be used in the lab for debugging difficult problems of the component.	High Volume of Traces Expected when component is used
Debug	This level should include detailed debug information or high volume of messages which are primarily used for debugging.	Very High Volume of Traces Expected when component is used

Procedure

-
- Step 1** From the Unified Analysis Manager menu, select **Tools > Set Trace Level**.
The **Set Trace Level** window appears.
- Step 2** Select either the Group to display a list of supported groups or the Node for a list of supported devices. Select the groups or devices that you want to collect traces for.
- Step 3** From the **Select the template** drop-down list box, select the template containing the trace levels that you want to use. Alternately, you can click the **Customize** button if you want to customize trace levels for the group or device. If you choose the **Customize** option, the Design Preview dialog displays with a list of supported devices. Choose the device you want and use the **Selected Components** fields to set the trace levels.
- Step 4** Click **View Changes** to see any changes made to traces levels for the node. Click **OK** to set the level and exit the screen.
-

View Configuration

Use the View Configuration option to view configuration information related to a node. You can collect the version and configuration information and view it in a browser or save the results.

Procedure

-
- Step 1** From the Unified Analysis Manager menu, select **Tools > View Configuration**.
The **View Configuration** window appears and displays a list of nodes.

Step 2 Select a node and click the **Next** button to display the **Selected Components** screen. This screen lists the Version, Platform, License and other category configuration information for the product.

Step 3 Click **Finish** to collect the configuration information.

The summary window appears. Users can view the collected information in a browser or save the collected configuration information using the **Save As** button.

Cisco Unified Analysis Manager Troubleshooting

The following table provides a list of errors that you may see when testing Unified Analysis Manager connectivity to a node and the suggested action for correcting the errors.

Table 14: Test Connectivity Errors and Corrective Actions

No.	Error Code	Message	Corrective Action
1	NOT_AUTHORIZED_CODE	Username or password is not correct	Enter the correct username and password.
2	MISSING_SERVICE_CODE	Missing Service	The requested web service was not found. Check to see if the web service is down on the target application.
3	SERVER_BUSY_CODE	Server is busy	Check to see if there are any other ongoing jobs running on the server. If so, wait until the job is done. If not, wait a few minutes and try again.
4	INVALID_PORT_CODE	Invalid Port	The specified port may be syntactically incorrect or may be out of range.
5	CONNECTION_FAILED_CODE	Not connected to the specified node	Verify that you have entered the correct address for this node. If the address is correct, then verify that the node is up and that it is reachable.
6	NOT_SUPPORTED_CODE	Not supported	This version of the specified product is not supported for this release. Upgrade this product to a supported version.

No.	Error Code	Message	Corrective Action
7	CERTIFICATE_HANDLING_ERROR_CODE	SSL handshake failed. The client and server could not negotiate desired level of security	Verify that you have accepted the certificate that was sent to the client from the server.
8	GENERAL_CONNECTION_ERROR_CODE	An internal error has occurred	Save the recent Unified Analysis Manager log files and contact Unified Analysis Manager support for help.



CHAPTER 5

Profiles and Categories

- [Profiles, on page 93](#)
- [Categories, on page 94](#)

Profiles

This section describes about how to add, restore, and delete the configuration profile.

Add Configuration Profile

With RTMT, you can customize your monitoring window by monitoring different performance counters and then create your own configuration profiles. You can restore these monitoring windows in a single step rather than opening each window again.

You can switch between different profiles during the same RTMT session or use the configuration profile in subsequent RTMT sessions.

Follow this procedure to create a profile.

Procedure

Step 1 Choose **File > Profile**.

The Preferences dialog box appears.

Step 2 Click **Save**.

The Save Current Configuration dialog box appears.

Step 3 In the Configuration name field, enter a name for this particular configuration profile.

Step 4 In the Configuration description field, enter a description of this particular configuration profile.

Note Profiles apply to all nodes within a cluster, but you cannot save and apply the profile to a different cluster.

The system creates the new configuration profile.

Restore Configuration Profile

Perform the following procedure to restore a profile that you configured:

Procedure

- Step 1** Choose **File > Profile**.
The Preferences dialog box appears.
- Step 2** Click the profile that you want to restore.
- Step 3** Click **Restore**.
All windows with precanned settings or performance monitoring counters for the restored configuration open.
-

Delete Configuration Profile

Perform the following procedure to delete a profile that you configured:

Procedure

- Step 1** Choose **File > Profile**.
The Preferences dialog box appears.
- Step 2** Click the profile that you want to delete.
- Step 3** Click **Delete**.
- Step 4** Click **Close**.
-

Categories

Add Category

Follow this procedure to add a category.

Procedure

- Step 1** Go to the applicable window for your configuration:

Unified Communications Manager	Display Performance Monitoring under the system tab or Devices/CTIs in the Search window under the Communications Manager tab.
---------------------------------------	--

Cisco Business Edition 5000	Display Performance Monitoring under the system tab or Devices/CTIs in the Search window under the Communications Manager tab.
Cisco Unity Connection	Choose System > Performance > Open Performance Monitoring .

- Step 2** Choose **Edit > Add New Category**.
- Step 3** Enter the name of the category; click **OK**.
- The category tab appears at the bottom of the window.
-

Rename Category

To rename a category, perform the following procedure:

Procedure

- Step 1** Perform one of the following tasks:
- Right-click the category tab that you want to rename and choose **Rename Category**.
 - Click the category tab that you want to rename and choose **Edit > Rename Category**.
- Step 2** Enter the new name and click **OK**.
- The renamed category displays at the bottom of the window.
-

Delete Category

To delete a category, perform one of the following tasks:

- Right-click the category tab that you want to delete and choose **Remove Category**.
- Click the category tab that you want to delete and choose **Edit > Remove Category**.

■ Delete Category



CHAPTER 6

Performance Counters

- [Counters, on page 97](#)
- [Local Perfmon Counter Data Logging, on page 100](#)
- [Log files on Perfmon Log Viewer and Microsoft Performance Tool, on page 103](#)
- [Troubleshooting, on page 106](#)

Counters

Add Counter Using Performance Queries

You can use queries to select and display perfmon counters. You can organize the perfmon counters to display a set of feature-based counters and save it in a category. After you save your Unified RTMT profile, you can quickly access the counters in which you are interested.

Unified RTMT displays perfmon counters in chart or table format. The chart format displays the perfmon counter information by using line charts. For each category tab that you create, you can display up to six charts in the Perfmon Monitoring pane with up to three counters in one chart. After you create a category, you cannot change the display from a chart format to a table format, or vice-versa.



Tip You can display up to three counters in one chart in the Perfmon Monitoring pane. To add another counter in a chart, click the counter and drag it to the Perfmon Monitoring pane. Repeat, to add up to three counters.

By default, Unified RTMT displays perfmon counters in a chart format. You can also choose to display the perfmon counters in a table format. To display the perfmon counters in a table format, check the **Present Data in Table View** check-box when you create a new category.

Procedure

- Step 1** Choose **System > Performance > Open Performance Monitoring**.
- Step 2** Click the name of the server where you want to add a counter to monitor.
- The tree hierarchy expands and displays all the perfmon objects.

- Step 3** To monitor a counter in a table format, continue to step 4. To monitor a counter in a chart format, skip to step 9.
- Step 4** Choose **Edit > New Category**.
- Step 5** In the Enter Name field, enter a name for the tab.
- Step 6** To display the perfmon counters in table format, check the **Present Data in Table View** check-box.
- Step 7** Click **OK**.
- A new tab with the name that you entered appears at the bottom of the pane.
- Step 8** Perform one of the following actions to select one or more counters with one or more instances for monitoring in table format (skip the remaining step in this procedure):
- Double-click a single counter and select a single instance from the dialog box, and then click **Add**.
 - Double-click a single counter and select multiple instances from the dialog box, and then, click **Add**.
- Tip** To display the counter in a chart format after you display it in a table format, right-click the category tab and choose **Remove Category**. The counter displays in a chart format.
- Step 9** To monitor a counter in a chart format, perform the following tasks:
- a) Click the file icon next to the object name that lists the counters that you want to monitor.
A list of counters appears.
 - b) To display the counter information, either right-click the counter and click **Counter Monitoring**, double-click the counter, or drag and drop the counter into the Perfmon Monitoring pane.
The counter chart appears in the Perfmon Monitoring pane.

Remove Counter From Performance Monitoring Pane

You can remove a counter chart (table entry) with the Remove the Chart or Table Entry menu item in the Perfmon menu in the menu bar.

You can remove counters from the RTMT Perfmon Monitoring pane when you no longer need them. Follow this procedure to remove a counter from the pane.

Procedure

Perform one of the following tasks:

- Right-click the counter that you want to remove and choose **Remove**.
 - Click the counter that you want to remove and choose **Perfmon > Remove Chart/Table Entry**.
-

Add Counter Instance

Follow this procedure to add a counter instance.

Procedure

- Step 1** Find and display the performance monitoring counter.
- Step 2** Click the performance monitoring counter in the performance monitoring tree hierarchy and choose **System > Performance > Counter Instances**.
- Step 3** In the **Select Instance** window, click the instance, and then click **Add**.
The counter appears.
-

Set Up Counter Alert Notification

Follow this procedure to configure alert notification for a counter.



- Tip** To remove the alert for the counter, right-click the counter and choose Remove Alert. The option appears gray after you remove the alert.
-

Procedure

- Step 1** Find and display the performance counter.
- Step 2** From the counter chart or table, right-click the counter for which you want to configure the alert notification, and choose **Set Alert/Properties**.
- Step 3** Check the **Enable Alert** check box.
- Step 4** In the **Severity** drop-down list box, choose the severity level at which you want to be notified.
- Step 5** In the Description pane, enter a description of the alert and click **Next**.
- Step 6** Configure the settings in the Threshold, Value Calculated As, Duration, Frequency, and Schedule panes. After you enter the settings in the window, click **Next** to proceed to the next panes.
- Step 7** To configure the system to send an e-mail message for the alert, check the **Enable Email** check box.
- Step 8** To trigger an alert action that is already configured, choose the alert action that you want from the **Trigger Alert Action** drop-down list box.
- Step 9** To configure a new alert action for the alert, click **Configure**.
- Note** Whenever the specified alert is triggered, the system sends the alert action.
The **Alert Action** dialog box appears.
- Step 10** To add a new alert action, click **Add**.
The Action Configuration dialog box appears.
- Step 11** In the Name field, enter a name for the alert action.
- Step 12** In the Description field, enter a description for the alert action.
- Step 13** Click **Add** to add a new e-mail recipient for the alert action.
The Input dialog box appears.

- Step 14** Enter either the e-mail or e-page address of the recipient that you want to receive the alert action notification and click **OK**.
- Step 15** In the User-defined email text box, enter the text that you want to display in the e-mail message and click **Activate**.
-

Display Counter Description

The following shows how to obtain a description of the counter:

Procedure

- Step 1** Perform one of the following tasks:
- In the Perfmon tree hierarchy, right-click the counter for which you want property information and choose **Counter Description**.
 - In the RTMT Performance Monitoring pane, click the counter and choose **System > Performance > Counter Description** from the menu bar.

Tip You can display the counter description and configure data-sampling parameters.

The **Counter Property** window displays the description of the counter. The description includes the host address, the object to which the counter belongs, the counter name, and a brief overview of what the counter does.

- Step 2** To close the **Counter Property** window, click **OK**.
-

Local Perfmon Counter Data Logging

RTMT allows you to choose different perfmon counters to log locally. You can then view the data from the perfmon CSV log by using the performance log viewer.

Start Perfmon Counter Logging

To start logging perfmon counter data into a CSV log file, perform the following procedure:

Procedure

- Step 1** Find and display the performance monitoring counters.
- Step 2** If you are displaying perfmon counters in the chart format, right-click the graph for which you want data sample information and choose **Start Counter(s) Logging**.

The **Counter Logging Configuration** dialog box appears.

Step 3 If you want to log all counters in a screen (both chart and table view format), you can right-click the category name tab at the bottom of the window and choose **Start Counter(s) Logging**.

The **Counter Logging Configuration** dialog box appears.

Step 4 Configure the maximum file size and maximum number of files parameter.

Step 5 In the **Logger File Name** field, enter a filename and click **OK**.

RTMT saves the CSV log files in the log folder in the .jrtmt directory under the user home directory. For example, in Windows, the path specifies `D:\Documents and Settings\userA\.jrtmt\log`, or in Linux, the path specifies `/users/home/.jrtmt/log`.

To limit the number and size of the files, configure the maximum file size and maximum number of files parameter in the trace output setting for the specific service in the **Trace Configuration** window of Cisco Unified Serviceability. See *Cisco Unified Serviceability Administration Guide*.

Note If you have already started logging perfmon counters and you want to change the maximum file size and maximum number of files, you must first stop the counters before you reconfigure the maximum file size and number of files parameters. After resetting the parameters, you can then restart logging perfmon counters.

Stop Perfmon Counter Logging

To stop logging perfmon counter data, perform the following procedure:

Procedure

Step 1 Find and display the performance monitoring counters.

Step 2 If you are displaying perfmon counters in the chart format, right-click the graph for which counter logging is started and choose **Stop Counter(s) Logging**. If you want to stop logging of all counters in a screen (both chart and table view format), you can right-click the category name tab at the bottom of the window and choose **Stop Counter(s) Logging**.

Configure Data Sample

The **Counter Property** window contains the option to configure data samples for a counter. The perfmon counters that display in the RTMT Perfmon Monitoring pane contain green dots that represent samples of data over time. You can configure the number of data samples to collect and the number of data points to show in the chart. After the data sample is configured, view the information by using the **View All Data/View Current Data** menu option.

Follow this procedure to configure the number of data samples to collect for a counter.

Procedure

Step 1 Find and display the counter.

Step 2 Click the counter for which you want data sample information and choose **System > Performance > Monitoring Properties**.

The **Counter Property** window displays the description of the counter, as well as the tab for configuring data samples. The description includes the host address, the object to which the counter belongs, the counter name, and a brief overview of what the counter does.

Step 3 To configure the number of data samples for the counter, click the **Data Sample** tab.

Step 4 From the **No. of data samples** drop-down list box, choose the number of samples (between 100 and 1000). The default specifies 100.

Step 5 From the **No. of data points shown on chart** drop-down list box, choose the number of data points to display on the chart (between 10 and 50). The default specifies 20.

Step 6 Click one of the following parameters:

- **Absolute:** Because some counter values are accumulative, choose Absolute to display the data at its current status.
- **Delta:** Choose Delta to display the difference between the current counter value and the previous counter value.
- **Delta Percentage:** Choose Delta Percentage to display the counter performance changes in percentage.

Step 7 To close the **Counter Property** window and return to the RTMT Perfmon Monitoring pane, click **OK**.

View Counter Data

Follow this procedure to view the data that is collected for a performance counter.

Procedure

Step 1 In the RTMT Perfmon Monitoring pane, right-click the counter chart for the counter for which you want to view data samples.

Step 2 Choose **View All Data**.

The counter chart displays all data that has been sampled. The green dots display close together.

Step 3 Right-click the counter that currently appears.

Step 4 Choose **View Current**.

The counter chart displays the last configured data samples that were collected.

Log files on Perfmon Log Viewer and Microsoft Performance Tool

The performance log viewer displays a chart with the data from the selected counters. The bottom pane displays the selected counters, a color legend for those counters, display option, mean value, minimum value, and the maximum value.

The following table describes the functions of different buttons that are available on the Performance Log Viewer.

Table 15: Performance Log Viewer

Button	Function
Select Counters	Allows you to add counters that you want to display in the performance log viewer. If you do not want to display a counter, uncheck the Display column next to the counter.
Reset View	Resets the performance log viewer to the initial default view.
Save Downloaded File	Allows you to save the log file to your local computer.

View Log Files on Perfmon Log Viewer

The Performance Log Viewer displays data for counters from perfmon CSV log files in a graphical format. You can use the performance log viewer to display data from the local perfmon logs that you collected, or you can display the data from the Real-time Information Server Data Collection (RISDC) perfmon logs.

Before you begin

The local perfmon logs consist of data from counters that you select and store locally on your computer.

Procedure

-
- Step 1** Select **System > Performance > Open Performance Log Viewer**.
- Step 2** Select the type of perfmon logs that you want to view:
- For RisDC Perfmon Logs, perform the following steps:
 - a. Select RisDC Perfmon Logs in the Select Perfmon Log Location section.
 - b. Select a node from the list box.
 - c. Select **Open**.
 - d. Select the file and select **Open File**.
 - e. Check the counters that you want to display.

- f. Select **OK**.
- For locally stored data, perform the following actions:
 - a. Select **Local Perfmon Logs**.
 - b. Select **Open**.
 - c. Browse to the file directory.
 - d. Select the file that you are interested in viewing or enter the filename in the filename field.
 - e. Select **Open**.
 - f. Check the counters that you want to display.
 - g. Select **OK**.

Step 3 Select the counters that you want to display.

Step 4 Select **OK**.

Zoom In and Out in Performance Log Viewer

The Performance Log viewer includes a zoom feature that allows you to zoom in on and out on an area in the chart.

Procedure

Step 1 Perform one of the following actions:

- a) On the Quick Launch Channel:
 - Select **System**.
 - In the tree hierarchy, double-select **Performance to display the performance icons**.
 - Select the **Performance** icon.
- b) Select **System > Performance > Open Performance Monitoring**.

Step 2 Select the name of the server where the counter is located.

The tree hierarchy expands and displays all the perfmon objects for the node.

Step 3 Double-select the performance counter you want to monitor.

Step 4 Perform one of the following actions:

If you want to:	Action
Zoom in on an area in the chart	<ul style="list-style-type: none"> • Select and drag the left mouse button over the area of the chart in which you are interested. • Release the left mouse button when you have the selected area.

If you want to:	Action
Reset the chart to the initial default view	Perform one of the following actions: <ul style="list-style-type: none"> • Select Reset View. • Right-mouse select the chart and select Reset.

View Perfmon Log Files with Microsoft Performance Tool



Note The method for accessing **Performance** may vary depending on the version of windows you install on your computer.

Procedure

- Step 1** Select **Start > Settings > Control Panel > Administrative Tools > Performance**.
- Step 2** Perform the following actions in the application window:
- Select the right mouse button.
 - Select **Properties**.
- Step 3** Select the Source tab in the System Monitor Properties dialog box.
- Step 4** Browse to the directory where you downloaded the perfmon log file and select the perfmon csv file. The log file includes the following naming convention:
PerfMon_<node>_<month>_<day>_<year>_<hour>_<minute>.csv; for example,
PerfMon_172.19.240.80_06_15_2005_11_25.csv.
- Step 5** Select **Apply**.
- Step 6** Select **Time Range**. To specify the time range in the perfmon log file that you want to view, drag the bar to the appropriate starting and ending times.
- Step 7** To open the Add Counters dialog box, select the Data tab and select **Add**.
- Step 8** Select the perfmon object from the Performance Object drop-down list box. If an object has multiple instances, you may select **All instances** or select only the instances that you are interested in viewing.
- Step 9** You can select **All Counters** or select only the counters that you are interested in viewing.
- Step 10** Select **Add** to add the selected counters.
- Step 11** Select **Close when you finish selecting counters**.

Troubleshooting

Perfmon Data Log Troubleshooting

The troubleshooting perfmon data logging feature assists Cisco TAC in identifying system problems. When you enable troubleshooting perfmon data logging, you initiate the collection of a set of system and operating system performance statistics on the selected node. The statistics that are collected include comprehensive information that you can use for system diagnosis.

The system automatically enables troubleshooting perfmon data logging to collect statistics from a set of perfmon counters that provides comprehensive information about the system state. When you enable Troubleshooting Perfmon Data Logging, Cisco estimates that the system experiences a less than five percent increase in CPU utilization and an insignificant increase in the amount of memory that is being used, and it writes approximately 50 MB of information to the log files daily.

You can perform the following administrative tasks with the troubleshooting perfmon data logging feature:

- Enable and disable the trace filter for Troubleshooting perfmon data logging.
- Monitor a set of predefined System and performance objects and counters on each server.
- Log the monitored performance data in CSV file format on the server in the active log partition in the `var/log/active/cm/log/ris/csv` directory. The log file uses the following naming convention: `PerfMon_<node>_<month>_<day>_<year>_<hour>_<minute>.csv`; for example, `PerfMon_172.19.240.80_06_15_2005_11_25.csv`. Specify the polling rate. This rate specifies the rate at which performance data is gathered and logged. You can configure the polling rate down to 5 seconds. Default polling rate equals 15 seconds.
- View the log file in graphical format by using the Microsoft Windows performance tool or by using the Performance Log viewer in the Real-Time Monitoring Tool.
- Specify the maximum number of log files that will be stored on disk. Log files exceeding this limit are purged automatically by removal of the oldest log file. The default specifies 50 files.
- Specify the rollover criteria of the log file based on the maximum size of the file in megabytes. The default value specifies 2 MB.
- Collect the Cisco RIS Data Collector PerfMonLog log file by using the Trace & Log Central feature of the Real-Time Monitoring Tool or Command Line Interface.

The troubleshooting perfmon data-logging feature collects information from the following counters within the following perfmon objects.



Note Cisco Unity Connection counters are not logged to the troubleshooting perfmon data log.

- Database Change Notification Server Object:
 - Clients
 - CNProcessed
 - QueueDelay

- QueuedRequestsInDB
- QueuedRequestsInMemory
- Database Local DSN Object:
 - CcmDbSpace_Used
 - CcmtempDbSpace_Used
 - CNDbSpace_Used
 - LocalDSN
 - RootDbSpace_Used
 - SharedMemory_Free
 - SharedMemory_Used
- Enterprise Replication DBSpace Monitors Object:
 - ERDbSpace_Used
 - ERSBDbSpace_Used
- IP Object:
 - In Receives
 - In HdrErrors
 - In UnknownProtos
 - In Discards
 - In Delivers
 - Out Requests
 - Out Discards
 - Reasm Reqds
 - Reasm Oks
 - Reasm Fails
 - Frag OKs
 - Frag Fails
 - Frag Creates
 - InOut Requests
- Memory Object:
 - % Page Usage
 - % VM Used

- % Mem Used
- Buffers Kbytes
- Cached Kbytes
- Free Kbytes
- Free Swap Kbytes
- HighFree
- HighTotal
- Low Total
- Low Free
- Page Faults Per Sec
- Page Major Faults Per Sec
- Pages
- Pages Input
- Pages Input Per Sec
- Pages Output
- Pages Output Per Sec
- SlabCache
- SwapCached
- Shared Kbytes
- Total Kbytes
- Total Swap Kbytes
- Total VM Kbytes
- Used Kbytes
- Used Swap Kbytes
- Used VM Kbytes
- Network Interface Object:
 - Rx Bytes
 - Rx Packets
 - Rx Errors
 - Rx Dropped
 - Rx Multicast
 - Tx Bytes

- Tx Packets
- Tx Errors
- Tx Dropped
- Total Bytes
- Total Packets
- Tx QueueLen

- Number of Replicates Created and State of Replication Object:
 - Replicate_State

- Partition Object:
 - % CPU Time
 - %Used
 - Await Read Time
 - Await Time
 - Await Write Time
 - Queue Length
 - Read Bytes Per Sec
 - Total Mbytes
 - Used Mbytes
 - Write Bytes Per Sec

- Process Object:
 - % Memory Usage
 - Data Stack Size
 - Nice
 - PID
 - STime
 - % CPU Time
 - Page Fault Count
 - Process Status
 - Shared Memory Size
 - VmData
 - VmRSS

- VmSize
- Thread Count
- Total CPU Time Used

- Processor Object:
 - Irq Percentage
 - Softirq Percentage
 - IOwait Percentage
 - User Percentage
 - Nice Percentage
 - System Percentage
 - Idle Percentage
 - %CPU Time

- System Object:
 - Allocated FDs
 - Freed FDs
 - Being Used FDs
 - Max FDs
 - Total Processes
 - Total Threads
 - Total CPU Time

- TCP Object:
 - Active Opens
 - Passive Opens
 - Attempt Fails
 - Estab Resets
 - Curr Estab
 - In Segs
 - Out Segs
 - Retrans Segs
 - InOut Segs

- Thread Object (Troubleshooting Perfmon Data Logger only logs Unified Communications Manager threads):
 - %CPU Time
- Cisco CallManager Object:
 - CallManagerHeartBeat
 - CallsActive
 - CallsAttempted
 - CallsCompleted
 - InitializationState
 - RegisteredHardwarePhones
 - RegisteredMGCPGateway
 - RegisteredOtherStationDevices
- Cisco SIP Stack Object:
 - CCBsAllocated
 - SCBsAllocated
 - SIPHandlerSDLQueueSignalsPresent
- Cisco CallManager System Performance Object:
 - AverageExpectedDelay
 - CallsRejectedDueToThrottling
 - CodeRedEntryExit
 - CodeYellowEntryExit
 - QueueSignalsPresent 1-High
 - QueueSignalsPresent 2-Normal
 - QueueSignalsPresent 3-Low
 - QueueSignalsPresent 4-Lowest
 - QueueSignalsProcessed 1-High
 - QueueSignalsProcessed 2-Normal
 - QueueSignalsProcessed 3-Low
 - QueueSignalsProcessed 4-Lowest
 - QueueSignalsProcessed Total
 - SkinnyDevicesThrottled
 - ThrottlingSampleActivity

- TotalCodeYellowEntry
- Cisco TFTP Server Object:
 - BuildAbortCount
 - BuildCount
 - BuildDeviceCount
 - BuildDialruleCount
 - BuildDuration
 - BuildSignCount
 - BuildSoftkeyCount
 - BuildUnitCount
 - ChangeNotifications
 - DeviceChangeNotifications
 - DialruleChangeNotifications
 - EncryptCount
 - GKFoundCount
 - GKNotFoundCount
 - HeartBeat
 - HttpConnectRequests
 - HttpRequests
 - HttpRequestsAborted
 - HttpRequestsNotFound
 - HttpRequestsOverflow
 - HttpRequestsProcessed
 - HttpServedFromDisk
 - LDFoundCount
 - LDNotFoundCount
 - MaxServingCount
 - Requests
 - RequestsAborted
 - RequestsInProgress
 - RequestsNotFound
 - RequestsOverflow

- RequestsProcessed
- SegmentsAcknowledged
- SegmentsFromDisk
- SegmentsSent
- SEPFFoundCount
- SEPNotFoundCount
- SIPFoundCount
- SIPNotFoundCount
- SoftkeyChangeNotifications
- UnitChangeNotifications

Troubleshoot Perfmon Data Logging

Follow this procedure to collect information from counters within the perfmon objects with the perfmon data-logging feature.

Before you begin

- Be aware that RISDC perfmon logging is also known as Troubleshooting Perfmon Data logging. When you enable RISDC perfmon logging, the server collects performance data that are used to troubleshoot problems.
- When you enable RIS Data Collector (RISDC) perfmon logs, Unified Communications Manager and the IM and Presence Service collect information for the system in logs that are written on the server.
- You can enable or disable RISDC perfmon logs in the administrative interface by selecting **System** > **Service Parameter** and selecting the Cisco RIS Data Collector Service from the Service list box. By default, RISDC perfmon logging is enabled.

Procedure

-
- Step 1** Select **System** > **Service Parameters** the administration interface.
 - Step 2** Select the server from the Server list box.
 - Step 3** Select the Cisco RIS Data Collector from the Service drop-down list box.
 - Step 4** Enter the appropriate settings as described in the following table.

Table 16: Troubleshooting Perfmon Data-Logging Parameters

Field	Description
Enable Logging	From the drop-down list box, select True to enable or False to disable troubleshooting perfmon data logging. The default value specifies False.

Field	Description
Polling Rate	Enter the polling rate interval (in seconds). You can enter a value from 5 (minimum) to 300 (maximum). The default value specifies 15.
Maximum No. of Files	<p>Enter the maximum number of Troubleshooting Perfmon Data Logging files that you want to store on disk. You can enter a value from 1 (minimum) up to 100 (maximum). The default value specifies 50.</p> <p>Consider your storage capacity in configuring the Maximum No. of Files and Maximum File Size Parameters. We recommend that you do not exceed a value of 100 MB when you multiply the Maximum Number of Files value by the Maximum File Size value.</p> <p>When the number of files exceeds the maximum number of files that you specified in this field, the system deletes log files with the oldest time stamp.</p> <p>Caution If you do not save the log files on another computer before you change this parameter, you risk losing the log files.</p>
Maximum File Size (MB)	<p>Enter the maximum file size (in megabytes) that you want to store in a perfmon log file before a new file is started. You can enter a value from 1 (minimum) to 500 (maximum). The default value specifies 2 MB.</p> <p>Consider your storage capacity in configuring the Maximum No. of Files and Maximum File Size Parameters. We recommend that you do not exceed a value of 100 MB when you multiply the Maximum Number of Files value by the Maximum File Size value.</p>

Step 5 Select **Save**.

Note You can collect the log files for Cisco RIS Data Collector service on the server by using RTMT to download the log files. If you want to download the log files by using the CLI, refer to *Cisco Unified Communications Operating System Administration Guide*. After you collect the log files, you can view the log file by using the Performance Log Viewer in RTMT or by using the Microsoft Windows performance tool.



CHAPTER 7

Alerts

- [Alert Central Displays, on page 115](#)
- [Alert Action Setup, on page 121](#)
- [Set up alerts for core dump and collect relevant logs, on page 126](#)

Alert Central Displays

Unified RTMT displays both preconfigured alerts and custom alerts in Alert Central. Unified RTMT organizes the alerts under the applicable tabs: System, CallManager, Cisco Unity Connection, and Custom.

You can enable or disable preconfigured and custom alerts in Alert Central; however, you cannot delete preconfigured alerts.

System Alerts

The following list comprises the preconfigured system alerts:

- AuthenticationFailed
- CiscoDRFFailure
- CoreDumpFileFound
- CpuPegging
- CriticalAuditEventGenerated
- CriticalServiceDown
- HardwareFailure
- LogFileSearchStringFound
- LogPartitionHighWaterMarkExceeded
- LogPartitionLowWaterMarkExceeded
- LowActivePartitionAvailableDiskSpace
- LowAvailableVirtualMemory
- LowInactivePartitionAvailableDiskSpace

- LowSwapPartitionAvailableDiskSpace
- ServerDown (Applies to Unified Communications Manager clusters)
- SparePartitionHighWaterMarkExceeded
- SparePartitionLowWaterMarkExceeded
- SyslogSeverityMatchFound
- SyslogStringMatchFound
- SystemVersionMismatched
- TotalProcessesAndThreadsExceededThreshold



Note Because none of the audit events is alert worthy, the CriticalAuditEventGenerated alert cannot be triggered.

Related Topics

[System Alerts](#), on page 333

Automatic Trace Download Activation

Some preconfigured alerts allow you to initiate a trace download based on the occurrence of an event. You can automatically capture traces when a particular event occurs by checking the **Enable Trace Download** check box in Set Alert/Properties for the following alerts:

- CriticalServiceDown: CriticalServiceDown alert is generated when any service is down. CriticalServiceDown alert monitors only those services that are listed in RTMT Critical Services.



Note The Unified RTMT backend service checks status (by default) every 30 seconds. If service goes down and comes back up within that period, CriticalServiceDown alert may not be generated.

- CodeYellow: This alarm indicates that Unified Communications Manager initiated call throttling due to unacceptably high delay in handling calls.
- CoreDumpFileFound: CoreDumpFileFound alert is generated when the Unified RTMT backend service detects a new Core Dump file.



Note You can configure both CriticalServiceDown and CoreDumpFileFound alerts to download corresponding trace files for troubleshooting purposes. This setup helps preserve trace files at the time of crash.



Caution Trace Download may affect services on the node. A high number of downloads adversely impacts the quality of services on the node.

Voice and Video Alerts

The following list comprises the preconfigured Voice and Video alerts:

- BeginThrottlingCallListBLFSubscriptions
- CallAttemptBlockedByPolicy
- CallProcessingNodeCpuPegging
- CARIDSEngineCritical
- CARIDSEngineFailure
- CARSchedulerJobFailed
- CDRAgentSendFileFailed
- CDRFileDeliveryFailed
- CDRHighWaterMarkExceeded
- CDRMaximumDiskSpaceExceeded
- CodeYellow
- DDRBlockPrevention
- DDRDown
- EMCCFailedInLocalCluster
- EMCCFailedInRemoteCluster
- ExcessiveVoiceQualityReports
- ILSHubClusterUnreachable
- ILSPwdAuthenticationFailed
- ILSTLSAuthenticationFailed
- IMEDistributedCacheInactive
- IMEOverQuota
- IMEQualityAlert
- IMEServiceStatus
- InsufficientFallbackIdentifiers
- InvalidCredentials
- LocationOutOfResource
- MaliciousCallTrace
- MediaListExhausted
- MgcDChannelOutOfService
- NumberOfRegisteredDevicesExceeded

- NumberOfRegisteredGatewaysDecreased
- NumberOfRegisteredGatewaysIncreased
- NumberOfRegisteredMediaDevicesDecreased
- NumberOfRegisteredMediaDevicesIncreased
- NumberOfRegisteredPhonesDropped
- RouteListExhausted
- RTMTSessionExceedsThreshold
- SDLLinkOutOfService
- TCPSetupToIMEFailed
- TLSConnectionToIMEFailed
- UserInputFailure

Related Topics

[Voice and Video Alerts](#), on page 349

IM and Presence Service Alerts

The following list comprises the preconfigured IM and Presence Service alerts:

- CTIGWModuleNotEnabled
- CTIGWProviderDown
- CTIGWUserNotLicenced
- CTIGWUserNotAuthorized
- CTIGWProviderFailedToOpen
- CTIGWQBFailedRequest
- CTIGWSystemError
- EspConfigAgentMemAllocError
- EspConfigAgentFileWriteError
- EspConfigAgentNetworkOutage
- EspConfigAgentNetworkRestored
- EspConfigAgentHighMemoryUtilization
- EspConfigAgentHighCPUUtilization
- EspConfigAgentLocalDBAccessError
- EspConfigAgentProxyDomainNotConfigured
- EspConfigAgentRemoteDBAccessError

- EspConfigAgentSharedMemoryStaticRouteError
- ESPConfigError
- ESPConfigNotFound
- ESPCreateLockFailed
- ESPLoginError
- ESPMallocFailure
- ESPNAPTRInvalidRecord
- ESPPassedParamInvalid
- ESPRegistryError
- ESPRoutingError
- ESPSharedMemCreateFailed
- ESPSharedMemSetPermFailed
- ESPSharedMemAllocFailed
- ESPSocketError
- ESPStopped
- ESPStatsLogFileOpenFailed
- ESPVirtualProxyError
- ESPWrongIPAddress
- ESPWrongHostName
- ICSACertificateCASignedTrustCertFound
- ICSACertificateFingerPrintMisMatch
- ICSACertificateValidationFailure
- InterclusterSyncAgentPeerDuplicate
- LegacyCUPCLogin
- NotInCucmServerListError
- PEAutoRecoveryFailed
- PEDatabaseError
- PEIDSQueryError
- PEIDSSubscribeError
- PEIDStoIMDBDatabaseSyncError
- PELoadHighWaterMark
- PEMemoryHighCondition

- PEPeerNodeFailure
- PESipSocketBindFailure
- PEStateDisabled
- PEStateLocked
- PEWebDAVInitializationFailure
- PWSSCBFindFailed
- PWSSCBInitFailed
- PWSAboveCPULimit
- PWSAboveSipSubscriptionLimit
- PWSRequestLimitReached
- SRMFailed
- SRMFailover
- SyncAgentAXLConnectionFailed
- UASCBFindFailed
- UASCBGetFailed
- XcpCmComponentConnectError
- XcpCmPauseSockets
- XcpCmStartupError
- XcpCmXmppdError
- XcpConfigMgrConfigurationFailure
- XcpConfigMgrHostNameResolutionFailed
- XcpConfigMgrJabberRestartRequired
- XcpConfigMgrR2RPasswordEncryptionFailed
- XcpConfigMgrR2RRequestTimedOut
- XcpDBConnectError
- XcpMdnsStartError
- XcpSIPFedCmComponentConnectError
- XcpSIPFedCmStartupError
- XcpSIPGWStackResourceError
- XcpThirdPartyComplianceConnectError
- XcpTxtConfComponentConfigError
- XcpTxtConfDBConnectError

- XcpTxtConfDBQueueSizeLimitError
- XcpTxtConfGearError
- XcpWebCmComponentConnectError
- XcpWebCmHttpdError
- XcpWebCmStartupError
- XcpXMPPFedCmComponentConnectError
- XcpXMPPFedCmStartupError

Related Topics

[IM and Presence Service Alerts](#), on page 383

Cisco Unity Connection Alerts

The following list comprises the preconfigured Cisco Unity Connection alerts. These alerts apply only to Cisco Unity Connection and Cisco Business Edition 5000.

- NoConnectionToPeer
- AutoFailoverSucceeded
- AutoFailoverFailed
- AutoFailbackSucceeded
- AutoFailbackFailed
- SbrFailed (Split Brain Resolution Failed)
- DiskConsumptionCloseToCapacityThreshold
- DiskConsumptionExceedsCapacityThreshold
- LicenseExpirationWarning
- LicenseExpired



Note The first six alerts apply only to Cisco Unity Connection cluster configurations. Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster configuration.

Related Topics

[Cisco Unity Connection Alerts](#), on page 409

Alert Action Setup

In RTMT, you can configure alert actions for every alert that is generated and have the alert action sent to e-mail recipients that you specify in the alert action list.

The following table provides a list of fields that you will use to configure alert actions. Users can configure all fields, unless otherwise marked.

Table 17: Alert Action Configuration

Field	Description	Comment
Alert Action ID	ID of alert action to take.	Specify descriptive name.
Mail Recipients	List of e-mail addresses. You can selectively enable or disable an individual e-mail in the list.	—

Access Alert Central and Set Up Alerts

By using the following procedure, you can perform tasks, such as access Alert Central, sort alert information, enable, disable, or remove an alert, clear an alert, or view alert details.

Procedure

Step 1

Perform one of the following tasks:

a) On the Quick Launch Channel, do the following:

1. Click **System**.
2. In the tree hierarchy, double-click **Tools**.
3. Click the Alert Central icon.

b) Choose **System > Tools > Alert > Alert Central**.

The **Alert Central monitoring** window displays and shows the alert status and alert history of the alerts that the system has generated.

Step 2

Perform one of the following tasks:

- a) Set alert properties.
- b) Suspend alerts.
- c) Configure e-mails for alert notification.
- d) Configure alert actions.
- e) Sort alert information in the Alert Status pane. Click the up/down arrow that displays in the column heading.

For example, click the up/down arrow that displays in the Enabled or In Safe Range column.

You can sort alert history information by clicking the up/down arrow in the columns in the Alert History pane. To see alert history that is out of view in the pane, use the scroll bar on the right side of the Alert History pane.

f) To enable, disable, or remove an alert, perform one of the following tasks:

- From the Alert Status window, right-click the alert and choose **Disable/Enable Alert** (option toggles) or **Remove Alert**, depending on what you want to accomplish.

- Highlight the alert in the Alert Status window and choose **System > Tools > Alert > Disable/Enable (or Remove) Alert**.

Tip You can remove only user-defined alerts from RTMT. The Remove Alert option appears grayed out when you choose a preconfigured alert.

- g) To clear either individual or collective alerts after they get resolved, perform one of the following tasks:
- After the **Alert Status** window displays, right-click the alert and choose **Clear Alert (or Clear All Alerts)**.
 - Highlight the alert in the Alert Status window and choose **System > Tools > Alert > Clear Alert (or Clear All Alerts)**.

After you clear an alert, it changes from red to black.

- h) To reset alerts to default configuration, perform one of the following tasks:
- After the Alert Status window displays, right-click the alert and choose **Reset Alert to Default Config**, to reset that alert to the default configuration.
 - Choose **System > Tools > Alert > Reset all Alerts to Default Config**, to reset all the alerts to the default configuration.
- i) To view alert details, perform one of the following tasks:
- After the **Alert Status** window displays, right-click the alert and choose **Alert Details**.
 - Highlight the alert in the **Alert Status** window and choose **System > Tools > Alert > Alert Details**.

Tip After you have finished viewing the alert details, click **OK**.

Set Alert Properties

Using the alert notification feature, the application notifies you of system problems. The following configuration setup is required to activate alert notifications for a system performance counter.

From the RTMT Perfmon Monitoring pane, you select the system perfmon counter and perform the following actions:

- Set up an e-mail or a message popup window for alert notification.
- Determine the threshold for the alert.
- Determine the frequency of the alert notification (for example, the alert occurs once or every hour).
- Determine the schedule for when the alert activates (for example, on a daily basis or at certain times of the day).



Tip To remove the alert for the counter, right-click the counter and choose Remove Alert. The option appears dim after you remove the alert.

Procedure

Step 1

Perform one of the following actions:

If you want to:	Action
Set alert properties for a performance counter	<ul style="list-style-type: none"> • Display the performance counter. • From the counter chart or table, right-select the counter for which you want to configure the alert notification, and select Set Alert/Properties. • Check the Enable Alert check box.
Set alert properties from Alert Central	<ul style="list-style-type: none"> • Access Alert Central. • Select the alert for which you want to set alert properties. <p>Perform one of the following actions:</p> <ul style="list-style-type: none"> • Right-select the alert and select Set Alert/Properties. • Select System > Tools > Alert > Set Alert/Properties. • Check the Enable Alert check box.

Step 2

Select the severity level at which you want to be notified in the Severity list check box.

Step 3

Enter a description of the alert in the Description pane.

Step 4

Select **Next**.

Step 5

Configure the settings in the Threshold, Value Calculated As, Duration, Frequency, and Schedule panes.

Table 18: Counter Alert Configuration Parameters

Setting	Description
Threshold Pane	
Trigger alert when following conditions met (Over, Under)	<p>Check and enter the value that applies:</p> <ul style="list-style-type: none"> • Over: Check to configure a maximum threshold that must be met before an alert notification is activated. In the Over value field, enter a value. For example, enter a value that equals the number of calls in progress. • Under: Check to configure a minimum threshold that must be met before an alert notification is activated. In the Under value field, enter a value. For example, enter a value that equals the number of calls in progress. <p>Tip Use these check boxes in conjunction with the Frequency and Schedule configuration parameters.</p>

Setting	Description
Value Calculated As Pane	
Absolute, Delta, Delta Percentage	<p>Select the radio button that applies:</p> <ul style="list-style-type: none"> • Absolute: Because some counter values are accumulative, select Absolute to display the data at its current status. • Delta: Select Delta to display the difference between the current counter value and the previous counter value. • Delta Percentage: Select Delta Percentage to display the counter performance changes in percentage.
Duration Pane	
Trigger alert only when value constantly...; Trigger alert immediately	<ul style="list-style-type: none"> • Trigger alert only when value constantly...: If you want the alert notification only when the value is constantly below or over threshold for a desired number of seconds, select this radio button and enter seconds after which you want the alert to be sent. • Trigger alert immediately: If you want the alert notification to be sent immediately, select this radio button.
Frequency Pane	
Trigger alert on every poll; trigger up to...	<p>Select the radio button that applies:</p> <ul style="list-style-type: none"> • Trigger alert on every poll: If you want the alert notification to activate on every poll when the threshold is met, select this radio button. • Trigger up to...: If you want the alert notification to activate at certain intervals, select this radio button and enter the number of alerts that you want sent and the number of minutes within which you want them sent.
Schedule Pane	

Setting	Description
24-hours daily; start/stop	<p>Select the radio button that applies:</p> <ul style="list-style-type: none"> • 24-hours daily: If you want the alert to be triggered 24 hours a day, select this radio button. • Start/Stop: If you want the alert notification activated within a specific time frame, select the radio button and enter a start time and a stop time. If checked, enter the start and stop times of the daily task. For example, you can configure the counter to be checked every day from 9:00 a.m. to 5:00 p.m. or from 9:00 p.m. to 9:00 a.m.

Suspend Alerts

You may want to temporarily suspend some or all alerts; you can suspend alerts on a particular node or on an entire cluster. For example, if you are upgrading your system to a newer release, suspend alerts until the upgrade completes, so that you do not receive e-mails and e-pages during the upgrade.

Follow this procedure to suspend alerts in Alert Central.

Procedure

Step 1 Choose **System > Tools > Alert > Suspend cluster/node Alerts**.

Note Per node suspend states do not apply to clusterwide alerts.

Step 2 Perform one of the following actions:

- To suspend all alerts in the cluster, click the **Cluster Wide** radio button and check the **Suspend all alerts** check box.
- To suspend alerts per server, click the **Per Server** radio button and check the **Suspend** check box of each server on which you want alerts to be suspended.

Step 3 Click **OK**.

Note To resume alerts, choose **Alert > Suspend cluster/node Alerts** and uncheck the suspend check boxes.

Set up alerts for core dump and collect relevant logs

Core dumps can be difficult to reproduce so it is particularly important to collect the log files associated with them when they occur and before they are over written.

Set up an e-mail alert for core dumps, so that you are immediately notified when one occurs to assist in troubleshooting its cause.

Enable Email Alert



Important Enable TLS mode, Enable Authentication mode, Username, and Password fields are introduced from Release 14SU2 onwards.

Procedure

- Step 1** Select **System > Tools > Alert > Alert Central**.
- Step 2** Right-click **CoreDumpFileFound** alert and select **Set Alert Properties**.
- Step 3** Follow the wizard prompts to set your preferred criteria:
- In the **Alert Properties: Email Notification** popup, make sure that **Enable Email** is checked and click **Configure** to set the default alert action, which will be to email an administrator.
 - Follow the prompts and **Add** a Recipient email address. When this alert is triggered, the default action is to email this address.
 - Click **Save**.
- Step 4** Set the default Email server:
- Select **System > Tools > Alert > Config Email Server**.
 - Enter the e-mail server and port information to send email alerts.
 - Enter the **Send User Id**.
 - Click **OK**.
-

Collect logs

Follow this procedure to collect logs after you receive an e-mail alert.

Procedure

- Step 1** Note which services initiated the alert, which are indicated by “Core” in the e-mail message.
- Step 2** Select **Tools > Trace & Log Central > Collect Files** and select the relevant logs for all impacted services.
- For example, if the service is Cisco Presence Engine, collect the Cisco Presence Engine, Cisco XCP router and Cisco XCP Connection Manager logs. Or, if the service is Cisco XCP Router, collect the Cisco XCP Router, and Cisco XCP Connection Manager and Cisco Presence Engine logs.
- Step 3** Generate the stack trace by running the following commands from the CLI:
- ```
utils core active list
utils core active analyze core filename
```

**Step 4** Select **Tools > Trace & Log Central > Collect Files** and select the **RIS Data Collector PerfMon Log**.

**Step 5** Select **Tools > SysLog Viewer** to collect the system logs.

- a) Select a node.
- b) Click **System Logs > messages** to view and save the messages.
- c) Click **Application Logs > CiscoSyslog** to view and save the log file.

**Step 6** Attach the collected files to your Cisco technical support case.

---



## CHAPTER 8

# Traces and Logs

---

- [Trace and Log Central, on page 129](#)
- [Log Viewers, on page 170](#)
- [Plugins, on page 173](#)

## Trace and Log Central



---

**Note** For Trace and Log Central to work, you must resolve DNS lookup for all nodes in the cluster on the client machine.

---

## Preparation

### Import Certificates

Follow this procedure to import the node certificates.

You can import the server authentication certificate that the certificate authority provides for the node or for each node in the cluster.

We recommend that you import the certificates before using the trace and log central option. If you do not import the certificates, the Trace and Log Central option displays a security certificate for the nodes each time that you sign in to Unified RTMT and access the Trace and Log Central option. You cannot change any data that displays for the certificate.

#### Procedure

---

- Step 1** To import the certificate, choose **Tools > Trace > Import Certificate**.
- A messages appears that states that the system imported the node certificates.
- Step 2** Click **OK**.
-

## Types of trace support

This section describes the types of trace support.

### Trace and Log Central disk IO and CPU throttling

Unified RTMT supports the throttling of critical Trace and Log Central operations and jobs, whether they are running on demand, scheduled, or automatic.

When you make a request for an on-demand operation when the node is running under high IO conditions, the system displays a warning that gives you the opportunity to cancel the operation. Be aware that the IO rate threshold values that control when the warning displays are configurable with the following service parameters (Cisco RIS Data Collector service):

- TLC Throttling CPU Goal
- TLC Throttling IOWait Goal

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

## View Trace and Log Central Options

Follow this procedure to view Trace and Log Central options in Unified RTMT.




---

**Note** From any option that displays in the tree hierarchy, you can specify the services and applications for which you want traces, specify the logs and servers that you want to use, schedule a collection time and date, configure the ability to download the files, configure zip files, and delete collected trace files.

---




---

**Note** For devices that support encryption, the SRTP keying material does not display in the trace file.

---

### Before you begin

Before you begin, import the security certificates.

### Procedure

---

**Step 1** Perform one of the following actions to access Trace and Log Central:

- a) Select **System** in the Quick Launch Channel.
- b) Select **System > Tools > Trace > Trace & Log Central**.
- c) Select the **Trace & Log Central** icon in the tree hierarchy.

**Step 2** Perform one of the following tasks after you display the Trace and Log Central options in the Real-Time Monitoring Tool:

- Collect traces for services, applications, and system logs on one or more servers in the cluster.

- Collect and download trace files that contain search criteria that you specify as well as save trace collection criteria for later use.
- Collect a crash dump file for one or more servers on your network.
- View the trace files that you have collected.
- View all of the trace files on the server.
- View the current trace file being written on the server for each application. You can perform a specified action when a search string appears in the trace file.

---

## Collect files

### Collect Trace Files

Use the Collect Files option in Trace and Log Central to collect traces for services, applications, and system logs on one or more nodes in the cluster. You specify date and time range for which you want to collect traces, the directory in which to download the trace files and whether to delete the collected files from the node.

Follow this procedure to collect traces using the trace and log central feature.



---

**Note** The services that you have not activated also appear, so you can collect traces for those services.

---

Use the Query Wizard if you want to collect trace files that contain search criteria that you specify or you want to use trace collection criteria that you saved for later use.

#### Before you begin

Perform one or more of the following actions:

- Configure the information that you want to include in the trace files for the various services from the Trace Configuration window in *Cisco Unified Serviceability*. For more information, see the *Cisco Unified Serviceability Administration Guide*.
- If you want alarms to be sent to a trace file, choose an SDI or SDL trace file as the alarm destination in the **Alarm Configuration** window in *Cisco Unified Serviceability*. For more information, see the *Cisco Unified Serviceability Administration Guide*.
- Configure the throttling of critical Trace and Log Central operations and jobs by setting the values of the TLC Throttling CPU Goal and TLC Throttling IOWait Goal service parameters (Cisco RIS Data Collector service). For more information on configuring service parameters, see the *Cisco Unified Communications Manager Administration Guide*.

#### Procedure

---

- Step 1** Open the Trace and Log Central options.
- Step 2** In the Trace & Log Central tree hierarchy, double-click **Collect Files**.

The Trace Collection wizard appears. The services that you have not activated also appear, so you can collect traces for those services.

**Note** Unified Communications Manager and Cisco Unity Connection clusters: If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not appear in the Trace and Log Central windows.

**Note** Unified Communications Manager and Cisco Unity Connection clusters: You can install some of the listed services/applications only on a particular node in the cluster. To collect traces for those services/applications, make sure that you collect traces from the node on which you have activated the service/application.

**Step 3** *Cisco Unity Connection* users go to Step 4. For Unified Communications Manager or Cisco Business Edition, perform one of the following actions in the **Select CCM Services/Application** tab:

a) To collect traces for all services and applications for all nodes in a cluster, check the **Select All Services on All Servers** check box and click **Next**.

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for all service and applications for your standalone node.

b) To collect traces for all services and applications on a particular node (or for particular system logs on the node for *Cisco Unity Connection*), check the check box next to the node and click **Next**.

c) To collect traces for particular services or applications on particular nodes, check the check boxes that apply and click **Next**.

d) To go to the next tab without collecting traces for services or applications, click **Next**.

Go to Step 4 for Cisco Business Edition or go to Step 5 for Unified Communications Manager.

**Step 4** In the **Select CUC Services/Application** tab, perform one of the following tasks:

a) To collect all system logs for the node, check the **Select All Services on all Servers** check box or check the check box next to the node and click **Next**.

b) To collect traces for particular system logs on the node, check the check boxes that apply and click **Next**.

c) To go to the next tab without collecting traces for system logs, click **Next**.

**Step 5** In the **Select System Services/Application** tab, perform one of the following tasks:

a) To collect all system logs for all nodes in a cluster, check the **Select All Services on all Servers** check box and click **Next**.

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for your standalone node.

b) To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.

c) To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.

d) To continue the trace collection wizard without collecting traces for system logs, click **Next**.

**Step 6** In the Collection Time pane, specify the time range for which you want to collect traces. Choose one of the following options:

**Note** During log collection for locales other than English, we recommend that you select the Server Time Zone instead of the Client or Laptop Time Zone in which the server is installed.

- a) **Absolute Range:** Specify the node time zone and the time range (start and end date and time) for which you want to collect traces.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the **Select Time Zone** drop-down list.

Trace and Log Central downloads the file with a time range that is based on your Selected Reference Server Time Zone field. If you have nodes in a cluster in a different time zone, TLC will adjust for the time change and get files for the same period of time. For example, if you specify files from 9:00 a.m. to 10:00 a.m. and you have a second node (node x) that is in a time zone that is one hour ahead, TLC will download files from 10:00 a.m. to 11:00 a.m. from node x.

To set the date range for which you want to collect traces, choose the drop-down list box in the From Date/Time and To Date/Time fields.

- b) **Relative Range:** Specify the time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect traces.

**Note** Unified RTMT returns logs of a different time stamp, than that configured through the wizard. This occurs specifically, when the specified time stamp is lesser than that of the existing log files.

Log files exist on the node for a specific service from 11/24/09, and you have given the time range from 11/23/09 5:50 to 11/23/09 7:50; Unified RTMT still returns the existing log files.

**Step 7** In the **Download File** option group list, specify the options that you want for downloading traces. From the **Select Partition** drop-down list, choose the partition that contains the logs for which you want to collect traces.

Cisco Unified Serviceability stores the logs for the version of application that you are logged in to in the active partition and stores the logs for the other version (if installed) in the inactive directory.

This means that when you upgrade from one version of Unified Communications Manager, Cisco Business Edition 5000, or Cisco Unity Connection that is running on an appliance node to another version, and you restart the node with the new version, Cisco Unified Serviceability moves the logs of the previous version to the inactive partition and stores logs for the newer version in the active partition. If you log back in to the older version, Cisco Unified Serviceability moves the logs for the newer version to the inactive partition and stores the logs for the older version in the active directory.

**Note** Cisco Unified Serviceability does not retain logs from Unified Communications Manager or Cisco Unity Connection versions that ran on the Windows platform.

**Step 8** To specify the directory in which you want to download the trace files, click the **Browse** button next to the Download File Directory field, navigate to the directory, and click **Open**. The default specifies `<rtmt_install_directory>\<server name or server IP address>\<download time>` where `<rtmt_install_directory>` specifies the directory where Unified RTMT is installed.

**Step 9** To create a zip file of the trace files that you collect, choose the **Zip File** radio button. To download the trace files without zipping the files, choose the **Do Not Zip Files** radio button.

**Step 10** To delete collected log files from the node, check the **Delete Collected Log Files from the server** check box.

**Step 11** Click **Finish** or, to abort the settings, click **Cancel**.

If you clicked Finish, the window shows the progress of the trace collection.

When the trace collection process is complete, the message “Completed downloading for node <Server name or IP address>” appears at the bottom of the window.

**Step 12** To view the trace files that you collected, you can use the Local Browse option of the trace collection feature.

**Note** You will see a message if the service parameter values are exceeded or if the system is in code yellow.

---

## Query Wizard

The Trace Collection Query Wizard allows you to collect and download trace files that contain search criteria that you specify as well as to save trace collection criteria for later use. To use the Trace Collection Query Wizard, perform the procedures to start a query and execute a query.

### Before You Begin

- Configure the information that you want to include in the trace files for the various services from the **Trace Configuration** window.
- If you want alarms to be sent to a trace file, select an SDI trace file as the alarm destination in the **Alarm Configuration** window.

### Start a Query

#### Procedure

---

- Step 1** Open Trace & Log Central.
- Step 2** Double-select **Query Wizard** in the tree hierarchy.
- Step 3** Perform one of the following actions:

| If you want to:                        | Action                                                                                                                                                                                                            | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Run a Saved Query                      | <ul style="list-style-type: none"> <li>• Select <b>Saved Query</b>.</li> <li>• Select <b>Browse</b> to navigate to the query that you want to use.</li> <li>• Select the query and select <b>Open</b>.</li> </ul> | <ul style="list-style-type: none"> <li>• If you chose a single node generic query, the node to which RTMT is connected displays with a checkmark next to <b>Browse</b>. You can run the query on additional nodes by placing a checkmark next to those servers.</li> <li>• If you chose an all node generic query, all nodes display with a checkmark next to <b>Browse</b>. You can uncheck any server for which you do not want to run the query.</li> <li>• If you chose a regular query, all of the nodes that you selected when you saved the query display with a checkmark. You can check or uncheck any of the servers in the list. If you select new servers, you must use the wizard to select the services for that node</li> </ul> |
| Create a query                         | Select <b>Create Query</b> .                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Run the query without any modification | <ul style="list-style-type: none"> <li>• Select <b>Run Query</b>.</li> <li>• Complete the steps in “Execute a schedule.”</li> </ul>                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Modify the query                       | Go to Step 4.                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Step 4** Select **Next**.

**Step 5** Perform one of the following actions:

- If you selected **Saved Query** and chose a query, the criteria that you specified for query appear. If necessary, modify the list of services and applications for which you want to collect traces.
- If you selected **Create Query**, you must select all services and applications for which you want to collect traces.

**Step 6** Select **Next**.

**Step 7** Perform one of the following actions:

| If you want to:                                                                  | Action                                                                                                                                                                      |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collect traces for system logs or all system logs for all servers in the cluster | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul> |

| If you want to:                                                                  | Action                                                                                                                              |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Collect traces for all services and applications for all servers in the cluster, | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul> |
| Collect traces for all services and applications on a particular server,         | <ul style="list-style-type: none"> <li>• Check the name of the server.</li> <li>• Select <b>Next</b>.</li> </ul>                    |

**Step 8** Perform one of the following actions to specify the time range for which you want to collect traces:

| If you want to:                                                      | Action                                                                                                                                                                                                                    |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collect all the traces on the server for the services that you chose | Select <b>All Available Traces</b> .                                                                                                                                                                                      |
| Collect all the traces within an absolute date and time range        | <ul style="list-style-type: none"> <li>• Select <b>Absolute Range</b>.</li> <li>• Specify the server time zone and the time range (start and end date and time) for which you want to collect traces.</li> </ul>          |
| Collect all the traces within a relative date and time range         | <ul style="list-style-type: none"> <li>• Select <b>Relative Range</b>.</li> <li>• Specify the time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect traces.</li> </ul> |

**Step 9** Enter the word or phrase in the Search String field to search by phrases or words that exist in the trace file. The tool searches for an exact match to the word or phrase that you enter.

### What to do next

Execute a query.

### Execute a Query

- If any node in the cluster is not available, a dialog box displays with a message that indicates which node is not available. The unavailable node does not display in the Trace & Log Central windows.
- You can install some listed services or applications only on a particular node in the cluster. To collect traces for those services or applications, make sure that you collect traces from the node on which you have activated the service or application.
- The services that you have not activated also display, so you can collect traces for those services.
- After you have downloaded the trace files, you can view them by using the Local Browse option of the trace and log central feature.
- An error message displays if the service parameter values are exceeded or if the system is in code yellow.

## Procedure

- Step 1** Select **Run Query** to execute the query.
- Step 2** Select **Save Query** to save the query and continue with the next step.
- Step 3** Select **OK** when the dialog box displays that indicates that the query execution completed.
- Step 4** Perform the following actions:

| If you want to:                                                                     | Action                                                                                                                                                                                               | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Create a query that you can run on nodes other than the one on which it was created | <ol style="list-style-type: none"> <li>a. Select <b>Generic Query</b>.</li> <li>b. Select either the <b>Single Node Query</b> or <b>All Node Query</b>.</li> <li>c. Select <b>Finish</b>.</li> </ol> | <ul style="list-style-type: none"> <li>• You can only create a generic query if the services that you chose exist on a single node. If you chose services on more than one node, a message displays. You can either save the query as a regular query or select services on a single node.</li> <li>• If you select the Single Node Query, the trace collection tool by default selects the node on which you created the query when you execute the query.</li> <li>• If you select the All Node Query option, the trace collection tool by default selects all of the servers in the cluster when you execute the query.</li> </ul> |
| Run the query on that node or cluster on which you created the query                | <ol style="list-style-type: none"> <li>a. Select <b>Regular Query</b>.</li> <li>b. Select <b>Finish</b>.</li> </ol>                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

- Step 5** Browse to the location to store the query, enter a name for the query in the File Name field.
- Step 6** Select **Save**.
- Step 7** Perform one of the following actions:

| If you want to:                                                  | Action                      |
|------------------------------------------------------------------|-----------------------------|
| Run the query that you have just saved                           | • Select <b>Run Query</b> . |
| Exit the query wizard without running the query that you created | Select <b>Cancel</b> .      |

- Step 8** Perform one of the following actions after the query execution completes:

| If you want to:                                                                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| View a file that you collected                                                                                 | Follow these steps to navigate the file: <ol style="list-style-type: none"> <li>a. Double-select <b>Query Results</b>.</li> <li>b. Double-select the &lt;node&gt; folder, where &lt;node&gt; equals the IP address or hostname for the node that you specified in the wizard.</li> <li>c. Double-select the folder that contains the file that you want to view.</li> <li>d. After you have located the file, double-select that file.</li> </ol> |
| Download the trace files and the result file that contains a list of the trace files that your query collected | <ol style="list-style-type: none"> <li>a. Select the files that you want to download.</li> <li>b. Select <b>Download</b>.</li> <li>c. Specify the criteria for the download.</li> <li>d. Select <b>Finish</b>.</li> </ol>                                                                                                                                                                                                                         |
| Specify the directory in which you want to download the trace files and the results file                       | <ol style="list-style-type: none"> <li>a. Select <b>Browse</b> next to the Download all files field.</li> <li>b. Navigate to the directory.</li> <li>c. Select <b>Open</b>.</li> </ol>                                                                                                                                                                                                                                                            |
| Create a zip file of the trace files that you collected                                                        | Select <b>Zip File</b> .                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Delete collected log files from the server                                                                     | Check <b>Delete Collected Log Files from Server</b> .                                                                                                                                                                                                                                                                                                                                                                                             |
| Save the query                                                                                                 | <ul style="list-style-type: none"> <li>• Select <b>Save Query</b>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                     |

## Schedule Trace Collection in Cisco Unified Communications Manager

You can use the Schedule Collection option of the trace and log central feature to schedule up to six concurrent trace collections and to download the trace files to a SFTP or FTP server on your network, run another saved query, or generate a syslog file. To change a scheduled collection after you have entered it in the system, you must delete the scheduled collection and add a new collection event.



**Note** You can schedule up ten trace collection jobs, but only six trace collection can be concurrent. That is, only six jobs can be in a running state at the same time.

### Before you begin



**Note** For large deployments, we recommend that you use a dedicated trace archive server and set up scheduled trace collections to this trace server.

Perform one or more of the following actions:

- Configure the information that you want to include in the trace files for the various services from the **Trace Configuration** window of Cisco Unified Serviceability. For more information, see the *Cisco Unified Serviceability Administration Guide*.
- If you want alarms to be sent to a trace file, choose an SDI or SDL trace file as the alarm destination in the **Alarm Configuration** window. For more information, see the *Cisco Unified Serviceability Administration Guide*.

## Procedure

---

**Step 1** Open the Trace and Log Central options.

**Step 2** In the Trace and Log Central tree hierarchy, double-click **Schedule Collection**.

The Schedule Collection wizard appears.

**Note** The services that you have not activated also appear, so you can collect traces for those services.

**Note** If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not appear in the Trace and Log Central windows.

**Note** You can install some listed services and applications on a particular node in the cluster. To collect traces for those services and applications, make sure that you collect traces from the node on which you have activated the service or application.

**Step 3** Perform one of the following actions in the **Select CCM Services/Application** tab:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for all service and applications for your standalone node.

- To collect traces for all services and applications for all nodes, check the **Select All Services on All Servers** check box and click **Next**.
- To collect traces for all services and applications on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular services or applications on particular nodes, check the check boxes that apply and click **Next**.
- To continue the schedule collection wizard without collecting traces for services or applications, click **Next**.

**Step 4** In the **Select System Services/Application** tab, perform one of the following actions:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for your standalone node.

- To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
- To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.

- To continue the schedule collection wizard without collecting traces for system logs, click **Next**.

- Step 5** Specify the node time zone and the time range for which you want to collect traces.
- The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the **Select Time Zone** drop-down list.
- Step 6** To specify the date and time that you want to start the trace collection, click the down arrow button next to the Schedule Start Date/Time field. In the **Date** tab, choose the appropriate date. In the **Time** tab, choose the appropriate time.
- Step 7** To specify the date and time that you want to end the trace collection, click the down arrow button next to the Schedule End Date/Time field. In the **Date** tab, choose the appropriate date. In the **Time** tab, choose the appropriate time.
- Note** The trace collection completes, even if the collection goes beyond the configured end time; however, the trace and log central feature deletes this collection from the schedule.
- Step 8** From the **Scheduler Frequency** drop-down list, choose how often you want to run the configured trace collection.
- Step 9** From the **Collect Files that are generated** in the last drop-down list, specify the time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect traces.
- Step 10** To search by phrases or words that exist in the trace file, enter the word or phrase in the **Search String** field. The tool searches for a match to the word or phrase that you enter and collects those files that match the search criteria. If you want to search for an exact match to the word or phrase that you entered, check the **Case Sensitive** check box.
- Step 11** To create a zip file of the trace files that you collect, check the **Zip File** check box.
- Step 12** To delete collected log files from the node, check the **Delete Collected Log Files from the Server** check box.
- Step 13** Choose one or more of the following actions:
- Download Files and go to Step 14.
  - Run Another Query and go to Step 15.
  - Generate Syslog. If you chose Generate Syslog, go to Step 16.
- Step 14** In the SFTP/FTP Server Parameters group box, enter the node credentials for the node where the trace and log central feature downloads the results and click **Test Connection**. Enter the fingerprint values, when asked. After the trace and log central feature verifies the successful connection to the SFTP or FTP server, click **OK**.
- Note** If the jobs were already scheduled before Cisco Prime Collaboration Deployment Migration, perform step 14 again for the jobs to be executed successfully. After this, click **Cancel** to avoid job creation in the Download Files window. If any of the nodes in a cluster is down, ensure that you perform step 14 and verify the SFTP connection after the node comes back up.
- The **Download Directory Path** field specifies the directory in which the trace and log central feature stores collected files. By default, the trace collection stores the files in the home directory of the user whose user ID you specify in the SFTP or FTP parameters fields: `/home/<user>/Trace`.
- You can choose **Localhost** download option when downloading traces. This option is available only for Cisco Intercompany Media Engine servers.
- If you download trace files to the local host directories on the Cisco Intercompany Media Engine server, you can offload the files to a remote SFTP server by using the **file get** CLI command.

**Note** FTP is not supported for Cisco Intercompany Media Engine. We recommend that you use SFTP server for scheduled trace collections.

**Step 15** If you chose the Run Another Query Option, click the **Browse** button to locate the query that you want to run, and click **OK**.

**Note** The trace and log central feature only executes the specified query if the first query generates results.

**Step 16** Click **Finish**.

A message indicates that the system added the scheduled trace successfully.

**Note** If the real-time monitoring tool cannot access the SFTP or FTP server, a message appears. Verify that you entered the correct IP address, username, and password.

**Step 17** Click **OK**.

**Step 18** To view a list of scheduled collections, click the **Job Status** icon in the Trace portion of the Quick Launch Channel.

**Tip** To delete a scheduled collection, choose the collection event and click **Delete**. A confirmation message appears. Click **OK**.

---

## Schedule Trace Collection in Cisco Unity Connection

You can use the Schedule Collection option of the trace and log central feature to schedule up to six concurrent trace collections and to download the trace files to a SFTP or FTP server on your network, run another saved query, or generate a syslog file. To change a scheduled collection after you have entered it in the system, you must delete the scheduled collection and add a new collection event. To schedule trace collection, perform the following procedure.



---

**Note** You can schedule up to ten trace collection jobs, but only six trace collection can be concurrent. That is, only six jobs can be in a running state at the same time.

---

### Before you begin

Perform one or more of the following actions:

- Configure the information that you want to include in the trace files for the various services from the **Trace Configuration** window of Cisco Unified Serviceability. For more information, see the *Cisco Unified Serviceability Administration Guide*.
- If you want alarms to be sent to a trace file, choose an SDI or SDL trace file as the alarm destination in the **Alarm Configuration** window. For more information, see the *Cisco Unified Serviceability Administration Guide*.

## Procedure

---

**Step 1** Open the Trace and Log Central options.

**Step 2** In the Trace & Log Central tree hierarchy, double-click **Schedule Collection**.

The Schedule Collection wizard appears.

**Note** The services that you have not activated also appear, so you can collect traces for those services.

**Note** Cisco Unity Connection: If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not appear in the Trace and Log Central windows.

**Note** Cisco Unity Connection: You can install some listed services and applications on a particular node in the cluster. To collect traces for those services and applications, make sure that you collect traces from the node on which you have activated the service or application.

**Step 3** In the **Select CUC Services/Application** tab, perform one of the following actions:

- To collect all system logs for the node, check the **Select All Services on all Servers** check box or check the check box next to the node and click **Next**.
- To collect traces for particular system logs on the node, check the check boxes that apply and click **Next**.
- To continue the schedule collection wizard without collecting traces for system logs, click **Next**.

**Step 4** In the **Select System Services/Application** tab, perform one of the following actions:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for your standalone node.

- To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
- To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.
- To continue the schedule collection wizard without collecting traces for system logs, click **Next**.

**Step 5** Specify the node time zone and the time range for which you want to collect traces.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the **Select Time Zone** drop-down list box.

**Step 6** To specify the date and time that you want to start the trace collection, click the down arrow button next to the Schedule Start Date/Time field. In the **Date** tab, choose the appropriate date. In the **Time** tab, choose the appropriate time.

**Step 7** To specify the date and time that you want to end the trace collection, click the down arrow button next to the Schedule End Date/Time field. In the **Date** tab, choose the appropriate date. In the **Time** tab, choose the appropriate time.

**Note** The trace collection completes, even if the collection goes beyond the configured end time; however, the trace and log central feature deletes this collection from the schedule.

- Step 8** From the **Scheduler Frequency** drop-down list box, choose how often you want to run the configured trace collection.
- Step 9** From the **Collect Files that are generated** in the last drop-down list boxes, specify the time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect traces.
- Step 10** To search by phrases or words that exist in the trace file, enter the word or phrase in the **Search String** field. The tool searches for a match to the word or phrase that you enter and collects those files that match the search criteria. If you want to search for an exact match to the word or phrase that you entered, check the **Case Sensitive** check box.
- Step 11** To create a zip file of the trace files that you collect, check the **Zip File** check box.
- Step 12** To delete collected log files from the node, check the **Delete Collected Log Files from the Server** check box.
- Step 13** Choose one or more of the following actions:
- Download Files. If you chose Download Files or Run Another Query, continue with Step 15.
  - Run Another Query.
  - Generate Syslog. If you chose Generate Syslog, go to Step 17.
- Step 14** In the SFTP/FTP Server Parameters group box, enter the node credentials for the node where the trace and log central feature downloads the results and click **Test Connection**. After the trace and log central feature verifies the connection to the SFTP or FTP server, click **OK**.
- The **Download Directory Path** field specifies the directory in which the trace and log central feature stores collected files. By default, the trace collection stores the files in the home directory of the user whose user ID you specify in the SFTP or FTP parameters fields: /home/<user>/Trace.
- You can choose **Localhost** download option when downloading traces. This option is available only for Cisco Intercompany Media Engine servers.
- If you download trace files to the local host directories on the Cisco Intercompany Media Engine server, you can offload the files to a remote SFTP server by using the **file get** CLI command.
- Note** FTP is not supported for Cisco Intercompany Media Engine. We recommend that you use SFTP server for scheduled trace collections.
- Step 15** If you chose the Run Another Query Option, click the **Browse** button to locate the query that you want to run, and click **OK**.
- Note** The trace and log central feature only executes the specified query if the first query generates results.
- Step 16** Click **Finish**.
- A message indicates that the system added the scheduled trace successfully.
- Note** If the real-time monitoring tool cannot access the SFTP or FTP server, a message appears. Verify that you entered the correct IP address, username, and password.
- Step 17** Click **OK**.
- Step 18** To view a list of scheduled collections, click the **Job Status** icon in the Trace portion of the Quick Launch Channel.

**Tip** To delete a scheduled collection, choose the collection event and click **Delete**. A confirmation message appears. Click **OK**.

## Start a schedule

### Before you begin

- Configure the information that you want to include in the trace files for the various services from the Trace Configuration window.
- If you want alarms to be sent to a trace file, select an SDI trace file as the alarm destination in the Alarm Configuration window.

### Procedure

**Step 1** Open Trace & Log Central.

**Step 2** Double-select **Schedule Collection** in the tree hierarchy.

**Step 3** Perform one of the following actions to collect trace on node logs:

| If you want to:                                                                             | Action                                                                                                                              |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Collect traces for all services and applications for all nodes in the cluster               | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul> |
| Collect traces for all services and applications on a particular node                       | <ul style="list-style-type: none"> <li>• Check the name of the node.</li> <li>• Select <b>Next</b>.</li> </ul>                      |
| Collect traces for particular services or applications on particular nodes                  | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> <li>• Select <b>Next</b>.</li> </ul>                     |
| Continue the trace collection wizard without collecting traces for services or applications | Select <b>Next</b> .                                                                                                                |

**Step 4** Perform one of the following actions to collect traces on system logs:

| If you want to:                                               | Action                                                                                                                                                                                                                            |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collect all system logs for all nodes in the cluster          | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul>                                                                                               |
| Collect traces for all system logs on a particular node       | <ul style="list-style-type: none"> <li>• Check the name of the node.</li> <li>• Select <b>Next</b>.</li> </ul>                                                                                                                    |
| Collect traces for particular system logs on particular nodes | <p>Check the traces that apply.</p> <p>For example, to collect CSA logs, check <b>Cisco Security Agent</b>. To access user logs that provide information about users that are signing in and out, check <b>Security Logs</b>.</p> |

| If you want to:                                                                | Action               |
|--------------------------------------------------------------------------------|----------------------|
| Continue the trace collection wizard without collecting traces for system logs | Select <b>Next</b> . |

**Step 5** Specify the node time zone and the time range for which you want to collect traces.

**Step 6** Perform the following actions to specify the date and time that you want to start the trace collection:

- a) Select the down arrow button next to the Schedule Start Date/Time field.
- b) From the Date tab, select the appropriate date.
- c) From the Time tab, select the appropriate time.

**Step 7** To specify the date and time that you want to end the trace collection, perform the following actions:

- a) Select the down arrow button next to the Schedule End Date/Time field.
- b) From the Date tab, select the appropriate date.
- c) From the Time tab, select the appropriate time.

#### Troubleshooting Tips

- The time zone of the client computer provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, display in the Select Time Zone drop-down list box.
- Trace collection completes, even if the collection goes beyond the configured end time; however, the Trace and Log Central feature deletes this collection from the schedule.

#### What to do next

[Execute a schedule, on page 145](#)

## Execute a schedule

### Procedure

- Step 1** Select how often you want to run the configured trace collection from the Scheduler Frequency list box.
- Step 2** Specify the time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect traces.
- Step 3** Enter the word or phrase in the **Search String** field to search by phrases or words that exist in the trace file. The tool searches for an exact match to the word or phrase that you enter and only collects those files that match the search criteria.
- Step 4** Check **Zip All Files** to create a zip file of the trace files that you collect.
- Step 5** Check **Delete Collected Log Files from the Server** to delete collected log files from the server.
- Step 6** Perform one or more of the following actions:
  - To download files:
    - a. Select **Download Files**.

- b. In the SFTP Server Parameters group box, enter the node credentials for the node where the trace and log central feature downloads the results.
- c. Select **Test Connection**.
- d. After the trace and log central feature verifies the connection to the SFTP server, select **OK**.
- To run another query:
  - a. Select **Run Another Query**.
  - b. Select **Browse** to locate the query that you want to run.
  - c. Select **OK**.
- To generate a Syslog, select **Generate Syslog**.

**Step 7** Select **Finish**.

Troubleshooting Tips

- If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node does not appear in the Trace & Log Central windows.
- If Unified RTMT cannot access the SFTP server, a message appears. Verify that you entered the correct IP address, username, and password.
- You can install some of the listed services/applications only on a particular node in the cluster. To collect traces for those services/applications, make sure that you collect traces from the node on which you have activated the service/application.
- The services that you have not activated also appear, so you can collect traces for those services.
- The trace collection completes, even if the collection goes beyond the configured end time; however, the trace and log central feature deletes this collection from the schedule.
- The **Download Directory Path** field specifies the directory in which the trace and log central feature stores collected files. By default, the trace collection stores the files in the home directory of the user whose user ID you specify in the SFTP parameters fields: */home/<user>/Trace*.
- The trace and log central feature only executes the specified query if the first query generates results.

---

## View Trace Collection Status

Follow this procedure to view the trace collection event status and to delete scheduled trace collections.

### Procedure

---

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Job Status**.

The **Job Status** window appears.

**Step 3** From the **Select a Node** drop-down list box, choose the server for which you want to view or delete trace collection events.

This list of scheduled trace collections appears.

Possible job types include the following:

- Scheduled Job
- OnDemand
- RealTimeFileMon
- RealTimeFileSearch

Possible statuses include the following:

- Pending
- Running
- Cancel
- Terminated

**Step 4** To delete a scheduled collection, choose the event that you want to delete and click **Delete**.

**Note** You can cancel jobs with a status of “Pending” or “Running” and a job type of “Schedule Task” or job type of “RealTimeFileSearch.”

---

## Real-Time Trace

The real-time trace option of the Trace and Log Central feature allows you to view the current trace file that is being written on the server for each application. If the system has begun writing a trace file, the real-time trace starts reading the file from the point where you began monitoring rather than at the beginning of the trace file. You cannot read the previous content.

The real-time trace provides the option to view real-time data and monitor user events.

### View Real-Time Data

The view real-time data option of the trace and log central feature allows you to view a trace file as the system writes data to that file. You can view real-time trace data in the generic log viewer for up to ten services, with a limit of three concurrent sessions on a single node. The log viewer refreshes every 5 seconds. As the traces are rolled into a new file, the generic log viewer appends the content in the viewer.



**Note** Depending on the frequency of the traces that a service writes, the View Real Time Data option may experience a delay before being able to display the data in the generic log viewer.

---

## Procedure

---

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Real Time Trace**.

**Note** Unified Communications Manager clusters and Cisco Unity Connection clusters only: If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not display in the Trace and Log Central windows.

**Step 3** Double-click **View Real Time Data**.

The View Real Time Data wizard appears.

**Step 4** From the **Nodes** drop-down list box, choose the node for which you want to view real-time data and click **Next**.

**Step 5** Choose the product, service, and the trace file type for which you want to view real-time data.

**Note** The services that you have not activated also display, so you can collect traces for those services.

**Note** The following message appears at the bottom of this window: *If trace compression is enabled, the data seen in this window can be bursty due to buffering of data.*

**Step 6** Click **Finish**. The real-time data for the chosen service displays in the generic log viewer.

**Step 7** Perform one of the following actions:

- Check the **Show New Data** check box to keep the cursor at the end of the window to display new traces as they appear.
- Uncheck the **Show New Data** check box if you do not want the cursor to move to the bottom of the window as new traces display.

**Step 8** Repeat this procedure to view data for additional services.

A message appears if you attempt to view data for too many services or too many services on a single node.

**Step 9** After you finish with viewing the real-time data, click **Close** on the generic log viewer.

**Tip** To search by phrases or words in the Log Viewer, enter the word or phrase in the Search String field. If you want to do a case-sensitive search for a word or phrase, check the **Match Case** check box.

---

## Monitor User Event

The monitor user event option of the trace and log central feature monitors real-time trace files and performs a specified action when a search string appears in the trace file. The system polls the trace file every 5 seconds. If the search string occurs more than once in one polling interval, the system performs the action only once.

### Before you begin

If you want to generate an alarm when the specified search string exists in a monitored trace file, enable the LogFileSearchStringFound alert.

## Procedure

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Real Time Trace**.

**Note** Unified Communications Manager clusters and Cisco Unity Connection clusters only: If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node does not display in the Trace and Log Central windows.

**Step 3** Double-click **Monitor User Event**.

The Monitor User Event wizard appears.

**Step 4** Perform one of the following actions:

| If you want to:                                         | Action                                                                                                                                                                                                                                                    |
|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| View the monitoring events that you have already set up | <ul style="list-style-type: none"> <li>Click <b>View Configured Events</b>.</li> <li>Select a node from the drop-down list box.</li> <li>Click <b>Finish</b>.</li> </ul> <p><b>Note</b> To delete an event, choose the event and click <b>Delete</b>.</p> |
| Configure new monitoring events                         | <ul style="list-style-type: none"> <li>Select <b>Create Events</b>.</li> <li>Select <b>Next</b>.</li> <li>Continue with Step 5.</li> </ul>                                                                                                                |

**Step 5** Choose the node that you want the system to monitor from the **Nodes** drop-down list box and click **Next**.

**Step 6** Choose the product, service, and the trace file type that you want the system to monitor and click **Next**.

**Note** The services that you have not activated also appear, so you can collect traces for those services.

**Step 7** In the **Search String** field, specify the phrases or words that you want the system to locate in the trace files. The tool searches for an exact match to the word or phrase that you enter.

**Step 8** Specify the node time zone and the time range (start and end date and time) for which you want the system to monitor trace files.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, display in the **Select Time Zone** drop-down list box.

Trace and Log Central downloads the files with a time range that is based on your Selected Reference Server Time Zone field. If you have nodes in a cluster in a different time zone, TLC adjusts for the time change and get files for the same period of time. For example, if you specify files from 9:00 a.m. to 10:00 a.m. and you have a second node (node x) that is in a time zone that is one hour ahead, TLC downloads files from 10:00 a.m. to 11:00 a.m. from node x.

To set the date range for which you want to monitor traces, choose the drop-down list box in the From Date/Time and To Date/Time fields.

**Step 9**

Choose one or more of the following actions that you want the system to perform when it encounters the search string that you specified in the Search String field:

| <b>If you want the system to:</b>                                        | <b>Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Generate an alarm when the system encounters the specified search string | <p>Check <b>Alert</b>.</p> <p><b>Note</b> For the system to generate the alarm, you must enable the enable the TraceCollectionToolEvent alert.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Log the errors in the application logs area in the SysLog Viewer         | <p>Check <b>Local Syslog</b>.</p> <p><b>Note</b> The system provides a description of the alarm and a recommended action. You can access the SysLog Viewer from Unified RTMT.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Store the syslog messages on a syslog node                               | <p>Check <b>Remote Syslog</b>.</p> <p>Enter the syslog node name in the <b>Server Name</b> field.</p> <p><b>Note</b> By default, audit events are not sent to the remote syslog node, unless the severity is lowered to Warning, Notice, or Informational.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Download the trace files that contain the specified search string        | <p>Check <b>Download File</b>.</p> <p>Enter the node credentials for the node where you want to download the trace files in the SFTP Server Parameters group box.</p> <p>Select <b>Test Connection</b>.</p> <p>Select <b>OK</b> after the Trace and Log Central feature verifies the connection to the SFTP server.</p> <p>The Download Directory Path field specifies the directory in which the trace and log central feature stores collected files. By default, the trace collection stores the files in the home directory of the user whose user ID you specify in the SFTP/FTP parameters fields: /home/&lt;user&gt;/Trace.</p> <p>You can choose <b>Localhost</b> download option when downloading traces. This option is available only for Cisco Intercompany Media Engine servers.</p> <p>If you download trace files to the local host directories on the Cisco Intercompany Media Engine server, you can offload the files to a remote SFTP server by using the <b>file get</b> CLI command.</p> <p><b>Note</b> FTP is not supported for Cisco Intercompany Media Engine. We recommend that you use SFTP server for scheduled trace collections.</p> |

The system polls the trace files every 5 seconds and performs the specified actions when it encounters the search string. If more than one occurrence of the search string occurs in a polling interval, the system performs the action only once.

The following message appears: If trace compression is enabled, there might be a delay in catching the event after it occurs, due to buffering of data.

**Step 10** Click **Finish**.

---

## Collect Crash Dump in Cisco Unified Communications Manager

Follow this procedure to collect a core dump of trace files.

### Procedure

---

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Collect Crash Dump**.

The Collect Crash Dump wizard appears.

**Note** The services that you have not activated also appear, so you can collect traces for those services.

**Note** If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not appear in the Trace and Log Central windows.

**Note** You can install some of the listed services or applications on a particular node in the cluster. To collect traces for those services or applications, make sure that you collect traces from the node on which you have activated the service or application.

**Step 3** Perform one of the following actions in the **Select CCM Services/Application** tab:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for all service and applications for your standalone node.

- To collect traces for all services and applications for all nodes, check the **Select All Services on All Servers** check box and click **Next**.
- To collect traces for all services and applications on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular services or applications on particular nodes, check the check boxes that apply and click **Next**.
- To continue the collect crash dump wizard without collecting traces for services or applications, click **Next**.

**Step 4** In the **Select System Services/Application** tab, perform one of the following actions:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for your standalone node.

- To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
- To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.
- To continue the collect crash dump wizard without collecting traces for system logs, click **Next**.

**Step 5** In the Collection Time group box, specify the time range for which you want to collect traces. Choose one of the following options:

- **Absolute Range:** Specify the node time zone and the time range (start and end date and time) for which you want to collect traces.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the **Select Time Zone** drop-down list box.

Trace Log Central downloads the files with a time range that is based on your Selected Reference Server Time Zone field. If you have nodes in a cluster in a different time zone, TLC adjusts for the time change and gets files for the same period of time. For example, if you specify files from 9:00 a.m. to 10:00 a.m. and you have a second node (node x) that is in a time zone that is one hour ahead, TLC downloads files from 10:00 a.m. to 11:00 a.m. from node x.

To set the date range for which you want to collect crash files, choose the drop-down list box in the From Date/Time and To Date/Time fields.

- **Relative Range:** Specify the length of time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect crash files.

**Step 6** From the **Select Partition** drop-down list box, choose the partition that contains the logs for which you want to collect traces.

Cisco Unified Serviceability stores the logs for the version of application that you are logged in to in the active partition and stores the logs for the other version (if installed) in the inactive directory.

When you upgrade from one version of your product that is running on the Linux platform to another version, and you restart the node with the new version, Cisco Unified Serviceability moves the logs of the previous version to the inactive partition and stores logs for the newer version in the active partition. If you log in to the older version, Cisco Unified Serviceability moves the logs for the newer version to the inactive partition and stores the logs for the older version in the active directory.

**Note** Cisco Unified Serviceability does not retain logs from Unified Communications Manager, IM and Presence Service, and Cisco Unity Connection versions that ran on the Windows platform.

**Step 7** To specify the directory in which you want to download the trace files, click the **Browse** button next to the Download File Directory field, navigate to the directory, and click **Open**. The default specifies `<rtmt_users_directory>\<server name or server IP address>\<download time>`.

**Step 8** To create a zip file of the crash dump files that you collect, choose the **Zip File** radio button. To download the crash dump files without zipping the files, choose the **Do Not Zip Files** radio button.

**Note** You cannot download a zipped crash dump file that exceeds 2 gigabytes.

**Step 9** To delete collected crash dump files from the node, check the **Delete Collected Log Files from Server** check box.

**Step 10** Click **Finish**.

A message appears that states that you want to collect core dumps. To continue, click **Yes**.

**Note** If you chose the **Zip File** radio button and the crash dump files exceed 2 gigabytes, the system displays a message that indicates that you cannot collect the crash dump file of that size with the **Zip File** radio button that you chose. Choose the **Do Not Zip Files** radio button and try the collection again.

---

## Collect Crash Dump in Cisco Unity Connection

Follow this procedure to collect a core dump of trace files.

### Procedure

---

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Collect Crash Dump**.

The Collect Crash Dump wizard appears.

**Note** The services that you have not activated also appear, so you can collect traces for those services.

**Note** Cisco Unity Connection: If any node in the cluster is not available, a dialog box appears with a message that indicates which node is not available. The unavailable node will not appear in the Trace and Log Central windows.

**Note** Cisco Unity Connection: You can install some of the listed services or applications on a particular node in the cluster. To collect traces for those services or applications, make sure that you collect traces from the node on which you have activated the service or application.

**Step 3** In the **Select CUC Services/Application** tab, perform one of the following actions:

- To collect all system logs for the node, check the **Select All Services on all Servers** check box or check the check box next to the node and click **Next**.
- To collect traces for particular system logs on the nodes, check the check boxes that apply and click **Next**.
- To continue the collect crash dump wizard without collecting traces for system logs, click **Next**.

**Step 4** In the **Select System Services/Application** tab, perform one of the following actions:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for your standalone node.

- To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
- To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.
- To continue the collect crash dump wizard without collecting traces for system logs, click **Next**.

**Step 5** In the Collection Time group box, specify the time range for which you want to collect traces. Choose one of the following options:

- **Absolute Range:** Specify the node time zone and the time range (start and end date and time) for which you want to collect traces.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the **Select Time Zone** drop-down list box.

Trace Log Central downloads the files with a time range that is based on your Selected Reference Server Time Zone field. If you have nodes in a cluster in a different time zone, TLC adjusts for the time change and gets files for the same period of time. For example, if you specify files from 9:00 a.m. to 10:00 a.m. and you have a second node (node x) that is in a time zone that is one hour ahead, TLC downloads files from 10:00 a.m. to 11:00 a.m. from node x.

To set the date range for which you want to collect crash files, choose the drop-down list box in the From Date/Time and To Date/Time fields.

- **Relative Range:** Specify the length of time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect crash files.

**Step 6** From the **Select Partition** drop-down list box, choose the partition that contains the logs for which you want to collect traces.

Cisco Unified Serviceability stores the logs for the version of application that you are logged in to in the active partition and stores the logs for the other version (if installed) in the inactive directory.

When you upgrade from one version of your product that is running on the Linux platform to another version, and you restart the node with the new version, Cisco Unified Serviceability moves the logs of the previous version to the inactive partition and stores logs for the newer version in the active partition. If you log in to the older version, Cisco Unified Serviceability moves the logs for the newer version to the inactive partition and stores the logs for the older version in the active directory.

**Note** Cisco Unified Serviceability does not retain logs from Unified Communications Manager and Cisco Unity Connection versions that ran on the Windows platform.

**Step 7** To specify the directory in which you want to download the trace files, click the **Browse** button next to the Download File Directory field, navigate to the directory, and click **Open**. The default specifies `<rtmt_user_directory>\<server name or server IP address>\<download time>` where `<rtmt_user_directory>` specifies the directory where RTMT is installed.

**Step 8** To create a zip file of the crash dump files that you collect, choose the **Zip File** radio button. To download the crash dump files without zipping the files, choose the **Do Not Zip Files** radio button.

**Note** You cannot download a zipped crash dump file that exceeds 2 gigabytes.

**Step 9** To delete collected crash dump files from the node, check the **Delete Collected Log Files from Server** check box.

**Step 10** Click **Finish**.

A message appears that states that you want to collect core dumps. To continue, click **Yes**.

**Note** If you chose the **Zip File** radio button and the crash dump files exceed 2 gigabytes, the system displays a message that indicates that you cannot collect the crash dump file of that size with the **Zip File** radio button that you chose. Choose the **Do Not Zip Files** radio button and try the collection again.

---

## Collect Installation Logs

Follow this procedure to collect installation and upgrade logs.

### Procedure

---

- Step 1** Choose **Tools > Trace > Trace & Log Central**.  
The **Trace & Log Central** window appears.
- Step 2** In the Trace & Log Central tree hierarchy, double-click **Collect Install Logs**.  
The Collect Install Logs wizard appears.
- Step 3** In the Select Servers Options box, specify from which server you would like to collect the install logs.
- To collect the install logs for a particular server, check the check box next to the server.
  - To collect the install logs for all servers, check the Select All Servers check box.
- Step 4** In the Download File Options, specify the directory where you want to download the log file. To specify the directory in which you want to download the log files, click **Browse** next to the Download File Directory field, navigate to the directory, and click **Open**. The default specifies `<rtmt_install_directory>` where `<rtmt_install_directory>` specifies the directory where Unified RTMT is installed..
- Step 5** Click **Finish**.
- 

## Collect audit logs

### Browse Audit Logs

### Procedure

---

- Step 1** Open the Trace & Log Central tree hierarchy.
- Step 2** Double-click **Collect Audit Logs**.  
The Collect Audit Logs Action Options wizard appears.
- Step 3** Check the **Browse Audit Logs** check box.
- Step 4** Click **Next**.  
The Nodes Selection Options wizard appears.
- Step 5** Perform one of the following actions in the **Action Options** window:

**Note** If you have a standalone server and check the **Select All Servers** check box, the system browses all audit logs for your standalone server.

- a) To browse audit logs for all servers, check the **Select All Servers** check box.
- b) To browse audit logs on a particular server, check the check box next to the server.

**Step 6** Click **Finish**.

**Step 7** The Remote Browse is Ready window appears. Click **Close**.

The Nodes pane appears.

**Step 8** On the left side of the Nodes pane, double-click the **Nodes** folder. Navigate through the tree hierarchy until the Audit App folder appears.

**Step 9** After the audit log file names display in the pane on the right side of the window, you can either right-click the mouse to select the type of program that you want to use to view each file or double-click the selected file to display the file in the default viewer.

**Step 10** Select an audit log file and perform one of the following actions:

- To create a zip file of the audit log files that you collect, click the **Zip File** radio button.

**Note** You cannot download a zipped audit log file that exceeds 2 gigabytes.

- To delete collected audit log files from the server, check the **Delete Files on Server** check box.
- To delete the selected audit log file, click **Delete**.
- To refresh the selected audit log file, click **Refresh**.
- To refresh all of the audit log files, click **Refresh All**.

**Note** Cisco Unified Serviceability does not retain audit logs from Unified Communications Manager versions that run on the Windows platform.

You have completed the steps for Browse Audit Logs.

## Download Audit Logs

### Procedure

**Step 1** Open the Trace & Log Central tree hierarchy.

**Step 2** Double-click **Collect Audit Logs**.

The Collect Audit Logs Action Options wizard appears.

**Step 3** Check the **Download Audit Logs** check box.

**Step 4** Click **Next**.

The Nodes Selection Options wizard appears.

**Step 5** Perform one of the following actions in the **Action Options** window:

**Note** If you have a standalone server and check the **Select All Servers** check box, the system downloads all audit logs for your standalone server.

- a) To download audit logs for all servers, check the **Select All Servers** check box.
- b) To download audit logs on a particular server, check the check box next to the server.

**Step 6** Click **Finish**.

**Step 7** To download audit logs, click **Next**.

The **Download Audit Logs** window appears.

**Step 8** In the Nodes Selection Options pane, perform one of the following actions:

- Check the **Select All Servers** check box.
- Check a specific node check box.

**Step 9** In the Collection Time pane, click one of the following radio buttons:

- **Absolute Range:** Specify the server time zone and the time range (start and end date and time) for which you want to audit logs.

The time zone of the client machine provides the default setting for the Select Reference Server Time Zone field. All the standard time zones, along with a separate set of entries for all time zones that have Daylight Saving settings, appear in the Select Time Zone drop-down list box.

Trace Log Central downloads the files with a time range that is based on your Selected Reference Server Time Zone field. If you have servers in a cluster in a different time zone, TLC adjusts for the time change and retrieves files for the same period of time. For example, if you specify files from 9:00 a.m. to 10:00 a.m. and you have a second server (server x) that is in a time zone that is one hour ahead, TLC downloads files from 10:00 a.m. to 11:00 a.m. from server x.

- **Relative Range:** Specify the length of time (in minutes, hours, days, weeks, or months) prior to the current time for which you want to collect audit logs based on the values from the following table:

| Period of Time | Range  |
|----------------|--------|
| Minutes        | 5 - 60 |
| Hours          | 2 - 24 |
| Days           | 1 - 31 |
| Weeks          | 1 - 4  |
| Months         | 1 - 12 |

**Step 10** In the Download File Options pane, select one of the following options:

- a) To specify the directory in which you want to download the audit log file, click **Browse** next to the Download File Directory field, navigate to the directory, and click **Open**. The default specifies <\Program Files\Cisco\CallManager Serviceability\JRtmt>.
- b) To create a zip file of the audit log files that you collect, choose the **Zip File** radio button.

**Note** You cannot download a zipped audit log file that exceeds 2 gigabytes.

- c) To delete collected audit log files from the server, check the **Delete Collected Log Files from Server** check box.

**Step 11** Click **Finish**.

You have completed the steps for the download of audit logs.

---

## Schedule Audit Log Download

### Procedure

---

- Step 1** Open the Trace & Log Central tree hierarchy.
- Step 2** Double-click **Collect Audit Logs**.  
The Collect Audit Logs Action Options wizard appears.
- Step 3** Check the **Schedule Download of Audit Logs** check box.
- Step 4** Click **Next**.  
The Nodes Selection Options wizard appears.
- Step 5** Perform one of the following actions in the **Action Options** window:
- Note** If you have a standalone node and check the **Select All Servers** check box, the system browses, downloads, or schedules a download of all audit logs for your standalone node.
- To schedule a download of audit logs for all nodes, check the **Select All Servers** check box.
  - To schedule a download of audit logs on a particular node, check the check box next to the node.
- Step 6** Click **Finish**.  
The **Schedule Download of Audit Logs** window appears.
- Step 7** In the Nodes Selection Options pane, perform one of the following actions:
- Check the **Select All Servers** check box.
  - Check a specific node check box.
- Step 8** In the Schedule Time pane, perform the following actions:
- Highlight the **Select Reference Server Time Zone**.
  - Use the calendar and highlight a **Start Date/Time**.
  - Use the calendar and highlight an **End Date/Time**.
  - Select the Scheduler Frequency. You may choose Hourly, Daily, Weekly, or Monthly.
  - Check the **Zip All Files** check box to zip the audit log files.
  - Check the **Delete Collected Log Files From Server** check box to delete the collected audit log files from the node.
- Step 9** In the Action Options pane, check the **Download Files** check box.  
The **Trace Download Configuration Dialog** window appears.
- Step 10** Enter the following information:
- Protocol: Select FTP (default) or SFTP.
  - Host IP Address: Enter the IP address of the host node.
  - User Name: Enter your username.

- Password: Enter your password.
- Port: Enter the FTP or SFTP port information.
- Download Directory Path: Enter the complete directory path where the files get downloaded.
- Click **Test Connection**. When the connection has been tested, the files are downloaded.

**Note** You can choose **Localhost** download option when downloading traces. This option is available only for Cisco Intercompany Media Engine servers.

If you download trace files to the local host directories on the Cisco Intercompany Media Engine server, you can offload the files to a remote SFTP server by using the **file get** CLI command.

**Note** FTP is not supported for Cisco Intercompany Media Engine. We recommend that you use SFTP server for scheduled trace collections.

You have completed the steps to schedule the download of audit logs.

---

## Display Downloaded Trace Files Using Local Browse

After you collect trace files and download them to your PC, you can view them with a text editor that can handle UNIX variant line terminators such as WordPad on your PC, or you can view them by using the viewers within Unified RTMT.



---

**Tip** Do not use NotePad to view collected trace files.

---

Follow this procedure to display the log files that you collected with the Trace and Log Central feature. If you zipped the trace files when you downloaded them to your PC, you need to unzip the files to view them by using the viewers within Unified RTMT.



---

**Note** You can open a maximum of five concurrent files for viewing within Trace and Log Central, which includes using the Query Wizard, Local Browse, and RemoteBrowse features.

---

### Before you begin

Collect the required traces files. See topics related to collecting trace files, downloading trace files using Query Wizard, and scheduling trace collection for instructions.

### Procedure

---

- Step 1** Open Trace and Log Central.
- Step 2** Double-click **Local Browse**.
- Step 3** Browse to the directory where you stored the log file and choose the file that you want to view.
- Step 4** To display the results, double-click the file.

If the file type has a viewer that is already associated with it, the file opens in that viewer. Otherwise, the Open With dialog box appears.

**Step 5** Click the program that want to use to view the file. If your preferred program is not on the list, choose another program by clicking **Other**.

If you want to use this program as your default viewer, check the **Always use this program to open these files** check box.

Unified RTMT displays the file in the appropriate viewer for the file type. If no other appropriate viewer applies, Unified RTMT opens files in the Generic Log Viewer.

## Display and Download Trace Files in Cisco Unified Communications Manager

After the system generates trace files, you can view them on the node by using the viewers within Unified RTMT. You can also use the remote browse feature to download the traces to your PC.

Follow this procedure to display and download the log files on the node with the Trace and Log Central feature.



**Note** You can open a maximum of five concurrent files for viewing within Trace and Log Central. This includes using the Query Wizard, Local Browse, and RemoteBrowse features.

### Before you begin

Collect the required traces files. See topics related to collecting trace files, downloading trace files using Query Wizard, and scheduling trace collection.

### Procedure

**Step 1** Open the Trace and Log Central options.

**Step 2** Double-click **Remote Browse**.

**Step 3** Choose the appropriate radio button, and click **Next**.

- If you choose Trace Files, go to Step 4.
- If you choose Crash Dump, go to Step 7.

**Note** The services that you have not activated also appear, so you can choose traces for those services.

**Note** If you choose Crash Dump, the wizard displays only the services that may cause a crash dump. If you do not see the service in which you are interested, click **Back** and choose Trace Files.

**Note** You can install some of the listed services/applications only on a particular node in the cluster. To choose traces for those services/applications, make sure that you choose traces from the node on which you have activated the service/application.

**Step 4** Perform one of the following actions in the Select CCM Services/Application tab:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects traces for all service and applications for your standalone node.

- To collect traces for all services and applications for all nodes, check the **Select All Services on All Servers** check box and click **Next**.
- To collect traces for all services and applications on a particular node, check the check box next to the node and click **Next**.
- To collect traces for particular services or applications on particular nodes, check the check boxes that apply and click **Next**.
- To continue the Remote Browse wizard without collecting traces for services or applications, click **Next**.

**Step 5** In the **Select System Services/Application** tab, perform one of the following actions:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects system logs for your standalone node.

- a) To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
- b) To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
- c) To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.
- d) To continue the Remote Browse wizard without collecting traces for system logs, click **Next**.
- e) Go to Step 10.

**Step 6** Perform one of the following actions in the **Select CCM Services/Application** tab:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects crash dump files for your standalone node.

- a) To choose crash dump files for all services and applications for all nodes, check the **Select All Services on All Servers** check box and click **Next**.
- b) To choose crash dump files for all services and applications on a particular node, check the check box next to the node and click **Next**.
- c) To choose crash dump files for particular services or applications on particular nodes, check the check boxes that apply and click **Next**.
- d) To continue the Remote Browse wizard without collecting crash dump files, click **Next**.

Go to Step 8 for Cisco Business Edition or go to Step 9 for Unified Communications Manager.

**Step 7** In the **Select System Services/Application** tab, perform one of the following tasks:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects crash dump files for your standalone node.

- a) To choose crash dump files for all nodes, check the **Select All Services on all Servers** check box.
- b) To choose crash dump files for all system logs on a particular node, check the check box next to the node.
- c) To choose crash dump files for particular system logs on particular nodes, check the check boxes that apply.
- d) To continue the Remote Browse wizard without collecting crash dump files, go to the next step.

**Step 8** Click **Finish**.

**Step 9** After the traces become available, a message appears. Click **Close**.

**Step 10** Perform one of the following actions:

- To display the results, navigate to the file through the tree hierarchy. After the log filename appears in the pane on the right side of the window, you can either right-click the mouse to select the type of program that you would like to use to view the file or double-click the file to display the file in the default viewer.

**Tip** To sort the files that appear in the pane, click a column header; for example, to sort the files by name, click the Name column header.

The real-time monitoring tool displays the file in the appropriate viewer for the file type. If no other appropriate viewer applies, the real-time monitoring tool opens files in the Generic Log Viewer.

- To download the trace files, choose the files that you want to download, click **Download**, specify the criteria for the download, and click **Finish**.
  - To specify the directory in which you want to download the trace files, click **Browse** next to the Download all files field, navigate to the directory, and click **Open**. The default specifies `<rtmt_users_directory>\<server name or server IP address>\<download time>`.
  - To create a zip file of the trace files that you collect, check the **Zip File** check box.
  - To delete collected log files from the node, check the **Delete Files on server** check box.
- To delete trace files from the node, click the file that appears in the pane on the right side of the window; then, click **Delete**.
- To refresh a specific service or a specific node in a cluster, click the service or node name; then, click **Refresh**. After a message states that the remote browse is ready, click **Close**.
- To refresh all services or all nodes in a cluster that appear in the tree hierarchy, click **Refresh All**. After a message states that the remote browse is ready, click **Close**.

**Tip** After you download the trace files, you can view them in Local Browse.

## Display And Download Trace Files in Cisco Unity Connection

After the system generates trace files, you can view them on the node by using the viewers within Unified RTMT. You can also use the remote browse feature to download the traces to your PC.

Follow this procedure to display and download the log files on the node with the Trace and Log Central feature.



**Note** You can open a maximum of five concurrent files for viewing within Trace and Log Central. This includes using the Query Wizard, Local Browse, and RemoteBrowse features.

### Before you begin

Collect the required traces files. See topics related to collecting trace files, downloading trace files using Query Wizard, and scheduling trace collection.

## Procedure

---

**Step 1** Open the Trace and Log Central options.

**Step 2** Double-click **Remote Browse**.

**Step 3** Choose the appropriate radio button, and click **Next**.

**Note** The services that you have not activated also appear, so you can choose traces for those services.

**Note** If you choose Crash Dump, the wizard displays only the services that may cause a crash dump. If you do not see the service in which you are interested, click **Back** and choose Trace Files.

**Note** Cisco Unity Connection clusters: You can install some of the listed services on applications on a particular node in the cluster. To choose traces for those services or applications, make sure that you choose traces from the node on which you have activated the service or application.

**Step 4** In the **Select CUC Services/Application** tab, perform one of the following actions:

- To collect all system logs for the node, check the **Select All Services on all Servers** check box or check the check box next to the node and click **Next**.
- To collect traces for particular system logs on the node, check the check boxes that apply and click **Next**.
- To continue the Remote Browse wizard without collecting traces for system logs, click **Next**.

**Step 5** In the **Select System Services/Application** tab, perform one of the following actions:

- Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects system logs for your standalone node.
- To collect all system logs for all nodes, check the **Select All Services on all Servers** check box and click **Next**.
  - To collect traces for all system logs on a particular node, check the check box next to the node and click **Next**.
  - To collect traces for particular system logs on particular nodes, check the check boxes that apply and click **Next**.
  - To continue the Remote Browse wizard without collecting traces for system logs, click **Next**.

**Step 6** In the **Select CUC Services/Application** tab, perform one of the following tasks:

- To choose crash dump files for the node, check the **Select All Services on all Servers** check box or check the check box next to the node and click **Next**.
- To choose crash dump files for particular system logs on the node, check the check boxes that apply and click **Next**.
- To continue the Remote Browse wizard without collecting crash dump files, click **Next**.

**Step 7** In the **Select System Services/Application** tab, perform one of the following tasks:

**Note** If you have a standalone node and check the **Select All Services on All Servers** check box, the system collects crash dump files for your standalone node.

- To choose crash dump files for all nodes, check the **Select All Services on all Servers** check box.
- To choose crash dump files for all system logs on a particular node, check the check box next to the node.

- To choose crash dump files for particular system logs on particular nodes, check the check boxes that apply.
- To continue the Remote Browse wizard without collecting crash dump files, go to the next step.

**Step 8** Click **Finish**.

**Step 9** After the traces become available, a message appears. Click **Close**.

**Step 10** Perform one of the following actions:

- To display the results, navigate to the file through the tree hierarchy. After the log filename appears in the pane on the right side of the window, you can either right-click the mouse to select the type of program that you would like to use to view the file or double-click the file to display the file in the default viewer.

**Tip** To sort the files that appear in the pane, click a column header; for example, to sort the files by name, click the Name column header.

The real-time monitoring tool displays the file in the appropriate viewer for the file type. If no other appropriate viewer applies, the real-time monitoring tool opens files in the Generic Log Viewer.

- To download the trace files, choose the files that you want to download, click **Download**, specify the criteria for the download, and click **Finish**.
  - To specify the directory in which you want to download the trace files, click **Browse** next to the Download all files field, navigate to the directory, and click **Open**. The default specifies `<rtmt_user_directory>\<server name or server IP address>\<download time> where <rtmt_user_directory>` specifies the directory where Unified RTMT is installed.
  - To create a zip file of the trace files that you collect, check the **Zip File** check box.
  - To delete collected log files from the node, check the **Delete Files on server** check box.
- To delete trace files from the node, click the file that appears in the pane on the right side of the window; then, click **Delete**.
- To refresh a specific service or a specific node in a cluster, click the service or node name; then, click **Refresh**. After a message states that the remote browse is ready, click **Close**.
- To refresh all services or all nodes in a cluster that appear in the tree hierarchy, click **Refresh All**. After a message states that the remote browse is ready, click **Close**.

**Tip** After you download the trace files, you can view them in Local Browse.

## Set Trace Collection Attributes

### Before you begin

Collect traces files.

## Procedure

**Step 1** Open Trace & Log Central.

**Step 2** Double-select **Remote Browse**.

**Step 3** Select the appropriate radio button, Trace Files or Crash Dump.

**Step 4** Select **Next**.

**Step 5** Perform one of the following actions:

- a) If you select Trace Files, go to step 6.
- b) If you select Crash Dump, go to step 8.

**Step 6** Perform one of the following actions in the Voice/Video or IM and Presence Applications/Services tab:

| If you want to:                                                                             | Action                                                                                                                       |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Collect traces for all services and applications for all servers in the cluster             | <ul style="list-style-type: none"> <li>• Select <b>All Services on All Servers</b></li> <li>• Select <b>Next</b>.</li> </ul> |
| Collect traces for all services and applications on a particular server                     | <ul style="list-style-type: none"> <li>• Check the name of the server.</li> <li>• Select <b>Next</b>.</li> </ul>             |
| Collect traces for particular services or applications on particular servers                | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> <li>• Select <b>Next</b>.</li> </ul>              |
| Continue the trace collection wizard without collecting traces for services or applications | Select <b>Next</b> .                                                                                                         |

**Step 7** Perform one of the following actions in the Select System Services/Application tab:

| If you want to:                                                             | Action                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collect all system logs for all servers in the cluster                      | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on all Servers</b>.</li> <li>• Select <b>Next</b></li> </ul>                                                                                                                                                                                                                                |
| Collect traces for all system logs on a particular server                   | <ul style="list-style-type: none"> <li>• Check the name of the server.</li> <li>• Select <b>Next</b>.</li> </ul>                                                                                                                                                                                                                                                  |
| Collect traces for particular system logs on particular servers             | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> </ul> <p><b>Note</b> For example, to collect CSA logs, check <b>CiscoSecurity Agent</b>. To access user logs that provide information about users that are signing in and out, check <b>Security Logs</b>.</p> <ul style="list-style-type: none"> <li>• Select <b>Next</b>.</li> </ul> |
| Continue the remote browse wizard without collecting traces for system logs | Go to Select finish.                                                                                                                                                                                                                                                                                                                                              |

**Step 8** Perform one of the following actions in the Voice/Video or IM and Presence Applications/Services tab.:

| If you want to:                                                                           | Action                                                                                                                              |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Collect crash dump files for all services and applications for all servers in the cluster | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul> |
| Collect crash dump files for all services and applications on a particular server         | <ul style="list-style-type: none"> <li>• Check the name of the server.</li> <li>• Select <b>Next</b>.</li> </ul>                    |
| Collect crash dump files for particular services or applications on particular servers    | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> <li>• Select <b>Next</b>.</li> </ul>                     |

**Step 9** Perform one of the following actions in the Select System Services/Application tab:

| If you want to:                                                                           | Action                                                                                                                              |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Collect crash dump files for all services and applications for all servers in the cluster | <ul style="list-style-type: none"> <li>• Check <b>Select All Services on All Servers</b>.</li> <li>• Select <b>Next</b>.</li> </ul> |
| Collect crash dump files for all services and applications on a particular server         | <ul style="list-style-type: none"> <li>• Check the name of the server.</li> <li>• Select <b>Next</b>.</li> </ul>                    |
| Collect crash dump files for particular services or applications on particular servers.   | <ul style="list-style-type: none"> <li>• Check the traces that apply.</li> <li>• Select <b>Next</b>.</li> </ul>                     |
| Continue the collect crash dump wizard without collecting crash dump files                | Go to Step 10.                                                                                                                      |

**Step 10** Select **Finish**.

### What to do next

View trace results.

## View Trace Results

- You can install some listed services/applications only on a particular node in the cluster. To select traces for those services/applications, make sure that you select traces from the server on which you have activated the service/application.
- The services that you have not activated also display, so you can select traces for those services.
- After you have downloaded the trace files, you can view them by using the Local Browse option of the trace and log central feature.
- To sort the files that displays in the pane, select a column header; for example, to sort the files by name, select the Name column header.
- The Real-Time Monitoring Tool displays the file in the appropriate viewer for the file type. If no other appropriate viewer applies, the Real-Time Monitoring Tool opens files in the Generic Log Viewer.

- The IM and Presence service does not support the Q931 Translator. IM and Presence does not support QRT report information.

### Before you begin

Set your trace collection attributes.

### Procedure

**Step 1** Select **Close** when a message states that the trace results are available.

**Step 2** Perform one of the following actions:

| If you want to:                                                                                                | Action                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To display the results                                                                                         | Perform one of the following actions to navigate to the file:<br><br>Right-select the mouse to select the type of program that you would like to use to view the file. Double-select the file to display the file in the default viewer.                                                                       |
| Download the trace files and the result file that contains a list of the trace files that your query collected | <ul style="list-style-type: none"> <li>• Select the files that you want to download.</li> <li>• Select <b>Download</b>.</li> <li>• Specify the criteria for the download.</li> <li>• Select <b>Finish</b>.</li> </ul>                                                                                          |
| Specify the directory in which you want to download the trace files and the results file                       | <ul style="list-style-type: none"> <li>• Select <b>Browse</b> next to the Download all files field.</li> <li>• Navigate to the directory.</li> <li>• Select <b>Open</b>. The default specifies C:\Program Files\Cisco\Presence Serviceability\jrtmt\&lt;server IP address&gt;\&lt;download time&gt;</li> </ul> |
| Create a zip file of the trace files that you collected                                                        | Check <b>Zip File</b> .                                                                                                                                                                                                                                                                                        |
| Delete collected log files from the server                                                                     | Check <b>Delete Collected Log Files from Server</b> .                                                                                                                                                                                                                                                          |
| Delete trace files from the node                                                                               | <ul style="list-style-type: none"> <li>• Select the file that displays in the pane on the right side of the window.</li> <li>• Select <b>Delete</b>.</li> </ul>                                                                                                                                                |
| Refresh a specific service or node                                                                             | <ul style="list-style-type: none"> <li>• Select the server name or service.</li> <li>• Select <b>Refresh</b>.</li> <li>• Select <b>Close</b> when a message states that the remote browse is ready.</li> </ul>                                                                                                 |

| If you want to:                                                   | Action                                                                                                                                                               |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Refresh all services and nodes that display in the tree hierarchy | <ul style="list-style-type: none"> <li>• Select <b>Refresh All</b>.</li> <li>• Select <b>Close</b> when a message states that the remote browse is ready.</li> </ul> |

## Display Report Information

You can view the QRT log files by either viewing the files on the server or by downloading the files onto your computer.



**Note** This section applies only to Unified Communications Manager and Cisco Business Edition 5000.

You can view the IP phone problem reports that the Quality Report Tool generates by using the QRT viewer. QRT serves as a voice-quality and general problem-reporting tool for Cisco Unified IP Phones. After you collect the QRT log files, you can use the following procedure to list and view Unified Communications Manager IP Phone problem reports by using the QRT viewer. The QRT viewer allows you to filter, format, and view phone problem reports that are generated. For more information about how to configure and use QRT, see the *Cisco Unified Communications Manager Features and Services Guide*.

### Before you begin

Collect or view the Quality Report Tool (QRT) log files. See topics related to collecting trace files, scheduling trace collection, and downloading trace files using either Query Wizard or the Remote Browser.

### Procedure

**Step 1** Display the log file entries by using the Query Wizard, the Remote Browse, or the Local Browse option in Trace and Log Central.

The QRT Viewer window appears.

**Note** Only log files from the Cisco Extended Functions service contain QRT information. The following format for the log filename that contains QRT data applies: qrtXXX.xml.

**Note** The QRT viewer allows only the .xml files with a specific structure (having phone details), not the default one. If you open generic log files, you may see the following error message:

```
Fail to Open Cisco QRT Viewer, No Records Available!
```

**Step 2** From the **Extension** drop-down list box, choose the extension or extensions that you want the report to include.

**Step 3** From the **Device** drop-down list box, choose the device or devices that you want the report to include.

**Step 4** From the **Category** drop-down list box, choose the problem category that you want the report to include.

**Step 5** From the **Select Fields** drop-down list box, choose the fields that you want the report to include.

**Note** The order in which you choose the fields determines the order in which they appear in the QRT Report Result pane.

**Step 6** To view the report in the QRT Report Result pane, click **Display Records**.

---

## Log Compression

In previous releases of Cisco Unified Communications Manager and Cisco Business Edition 5000, trace service parameters enabled and disabled log file compression to the hard disk. The service parameters have been deprecated.

In Unified Communications Manager 8.0 onward, the log compression feature only compresses the following log files:

- `cm/trace/cti/sdl`
- `cm/trace/cti/sdi`
- `cm/trace/ccm/sdl`
- `cm/trace/ccm/sdi`

The other log files are not compressed and are written directly to the hard disk.

The compressed files have a `.gz` extension. The file that is being actively written to the disk will have a `.gzo` extension.

All the CLI commands used to view and tail the files will work on the compressed files and will automatically uncompress them for viewing or tailing. The only difference is in specifying file names with the `.gz` and `.gzo` extension.

The following option is available with the file tail command:

```
file tail activelog cm/trace/cti/sdl recent
```

The `recent` option, when used with a compressed directory, continually tails the most recent log file. You do not need to switch to a newer log file when the currently written-to log file is closed, so it is an infinite and ongoing tail. This option is only available with the compressed log files.

The log files are compressed in the `gzip` format. For uncompressing the log files, the open source program `7-Zip` is available at <http://www.7-zip.org>, and works on all Windows platforms. You can use `7-Zip` on any computer, including a computer in a commercial organization. You do not need to register or pay for `7-Zip`. On a Linux platform, you can use the `gzip` or `gunzip` commands.

## Edit Trace Settings

Follow this procedure to edit trace settings for Unified RTMT.



---

**Note** The Error radio button is the default setting.

---

## Procedure

**Step 1** Choose **Edit > Trace Setting**

**Step 2** Click the radio button that applies.

The system stores the rmt.log file in the Documents and Settings directory for the user; for example, on a Windows machine, the log is stored in `C:\Documents and Settings\\.jrtmt\log`.

# Log Viewers

## Messages in AuditLog Viewer

You can display the following messages in AuditLog Viewer:

- AuditApp Logs: These logs are related to Unified Communications Manager application audit logs.
- Vos Logs: These logs are related to platform (terminal, port or network address of the system) activities.

The following table describes the AuditLog Viewer buttons.

**Table 19: AuditLog Viewer Buttons**

| Button       | Function                                                                                                                                                                                                                                                                                                                                  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Refresh      | Updates the contents of the current log on the Auditlog Viewer.<br><br><b>Tip</b> You can enable the Auditlog Viewer to automatically update the current log file every 5 seconds by checking the <b>Auto Refresh</b> check box.                                                                                                          |
| Clear        | Clears the display of the current log.                                                                                                                                                                                                                                                                                                    |
| Filter       | For auditapp logs, limits the logs displayed based on the UserID you select.<br><br>For vos logs, limits the logs displayed based on the set of options (Address, Terminal, and Type) that you select.<br><br><b>Tip</b> You can display logs other than the set of options you selected by checking the <b>Filter Inverse</b> check box. |
| Clear Filter | Removes the filter that limits the type of logs that appear.                                                                                                                                                                                                                                                                              |
| Find         | Allows you to search for a particular string in the current log.                                                                                                                                                                                                                                                                          |

| Button | Function                                     |
|--------|----------------------------------------------|
| Save   | Saves the currently selected log on your PC. |

To make a column larger or smaller when viewing an auditlog message, drag the arrow that displays when your mouse hovers between two column headings.

You can order the displayed auditlog messages by clicking a column heading. The first time that you click a column heading, the logs display in ascending order. A small triangle pointing up indicates ascending order. If you click the column heading again, the logs display in descending order. A small triangle pointing down indicates descending order. If you click the column heading one more time, the logs display in the unsorted state.

## Display AuditApp Logs

### Procedure

- 
- Step 1** Choose **System > Tools > AuditLog Viewer**.
- Step 2** From the Select a Node drop-down list, choose the server on which the logs that you want to view are stored.
- Step 3** Double-click the **AuditApp Logs** folder.
- Step 4** Click the **.log** file located outside the Archive folder to view the current logs. The AuditApp Logs for the selected node are displayed in a tabular form.
- Note** If you want see the old logs, double-click the **Archive** folder and click the corresponding file.
- Step 5** Double-click the entry that you want to view. The auditlog message for that particular entry appears in a new window.
- Tip** You can filter the auditlog message display results by choosing an option in the Filter By drop-down list box. To remove the filter, click **Clear Filter**. All logs appear after you clear the filter.
- 

## Display Messages in SysLog Viewer

You can display messages in SysLog Viewer.



- 
- Tip** CiscoSyslog messages also display the syslog definition, which includes recommended actions, in an adjacent pane when you double-click the syslog message. You do not have to access the Alarm Definitions in Cisco Unified Serviceability for this information.
-

The following table describes the SysLog Viewer buttons.

**Table 20: Syslog Viewer Buttons**

| Button       | Function                                                                                                                                                                                                             |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Refresh      | Updates the contents of the current log on the syslog viewer.<br><br><b>Tip</b> You can enable the syslog viewer to automatically update the syslog messages every 5 seconds by checking the Auto Refresh check box. |
| Clear        | Clears the display of the current log.                                                                                                                                                                               |
| Filter       | Limits the messages that appear based on the set of options that you select.                                                                                                                                         |
| Clear Filter | Removes the filter that limits the type of messages that appear.                                                                                                                                                     |
| Find         | Allows you to search for a particular string in the current log.                                                                                                                                                     |
| Save         | Saves the currently selected log on your PC.                                                                                                                                                                         |

When you view the syslog message, drag the arrow that appears when your mouse hovers between two column headings to make the column larger or smaller.

You can order the displayed syslog messages by clicking a column heading. The first time that you click a column heading, the records display in ascending order. A small triangle pointing up indicates ascending order. If you click the column heading again, the records display in descending order. A small triangle pointing down indicates descending order. If you click the column heading one more time, the records display in the unsorted state.

### Procedure

- 
- Step 1** Choose **System > Tools > SysLog Viewer > Open SysLog Viewer**.
- Step 2** From the **Select a Node** drop-down list box, choose the server where the logs that you want to view are stored.
- Step 3** Click the tab for the logs that you want to view.
- Step 4** After the log appears, double-click the log icon to list the filenames in the same window.
- Tip** If some syslog messages do not appear in the window, scrolling the mouse pointer over the missing syslog messages refreshes the display.
- Step 5** To view the contents of the file at the bottom of the window, click the filename.
- Step 6** Click the entry that you want to view.

To view the complete syslog message, double-click the syslog message. You can also use the buttons described in the SysLog Viewer Buttons table to view the syslog messages.

**Tip** You can filter the syslog message display results by choosing an option in the Filter By drop-down list box. To remove the filter, click **Clear Filter**. All logs appear after you clear the filter.

---

## Plugins

### Download and Install Application Plug-Ins

You can expand the functionality of Unified RTMT by installing application plug-ins, such as the Voice Log Translator (VLT) application. You can download the latest plug-ins for Unified RTMT from Cisco.com. After installing the plug-in, you can access the application in Unified RTMT.

To download and install the plug-in, perform the following procedure:

#### Procedure

---

- Step 1** Choose **Application > CCO Voice Tools Download**.  
The Login Prompt appears.
  - Step 2** Enter your Cisco.com username and password and click **OK**.
  - Step 3** Download the file to your PC.
  - Step 4** To begin the installation, double-click the download file.
  - Step 5** Follow the installation instructions.
- 

### Launch Application Plug-Ins

After downloading and installing the plug-in, you can access the application in the RTMT viewer.

#### Procedure

---

Under **System > Tools > Plugin**, choose the plug-in that you want to launch.

The application appears in the plugin window. See the application document for usage information.

---





# APPENDIX **A**

## Performance Counters and Alerts

- [System Counters](#), on page 175
- [Voice and Video Counters](#), on page 195
- [IM and Presence Service Counters](#), on page 285
- [Cisco Unity Connection Counters](#), on page 306
- [System Alerts](#), on page 333
- [Voice and Video Alerts](#), on page 349
- [IM and Presence Service Alerts](#), on page 383
- [Intercompany Media Engine Alerts](#), on page 402
- [Cisco Unity Connection Alerts](#), on page 409
- [System Error Messages](#), on page 416

## System Counters

### Cisco Tomcat Connector

The Tomcat Hypertext Transport Protocol (HTTP) and HTTP Secure (HTTPS) Connector object provides information about Tomcat connectors.

A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when application web pages are accessed. The Secure Socket Layer (SSL) status of web application URLs provides the basis for the instance name for each Tomcat HTTP Connector. For example, `https://<IP Address>:8443` for SSL or `http://<IP Address>:8080` for non-SSL.

The following table contains information about the Tomcat HTTP connector counters.

**Table 21: Cisco Tomcat Connector**

| Counters       | Counter Description                                                                             |
|----------------|-------------------------------------------------------------------------------------------------|
| Errors         | The total number of HTTP errors (for example, 401 Unauthorized) that the connector encountered. |
| MBytesReceived | The amount of data that the connector received.                                                 |
| MBytesSent     | The amount of data that the connector sent.                                                     |

| Counters     | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Requests     | The total number of request that the connector handled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ThreadsTotal | The current total number of request processing threads, including available and in-use threads, for the connector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ThreadsMax   | <p>The maximum number of request processing threads for the connector.</p> <p>Each incoming request on a web application window requires a thread for the duration of that request. If more simultaneous requests are received than the currently available request processing threads can handle, additional threads are created up to the configured maximum shown in this counter. If still more simultaneous requests are received, they accumulate within the server socket that the connector created, up to an internally specified maximum number. Any further simultaneous requests receive connection refused messages until resources are available to process them.</p> |
| ThreadsBusy  | This counter represents the current number of busy/in-use request processing threads for the connector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Cisco Tomcat JVM

The Cisco Tomcat Java Virtual Machine (JVM) object provides information about the pool of common resource memory used by web applications such as Cisco Unified Communications Manager Administration, Cisco Unified Serviceability, and Cisco Unity Connection Administration. The dynamic memory block stores all objects that Tomcat and its web applications create.

The following table contains information about the Tomcat JVM counters.

**Table 22: Tomcat JVM**

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KBytesMemoryFree  | <p>The amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine.</p> <p>When the amount of free dynamic memory is low, more memory is automatically allocated, and total memory size (represented by the KbytesMemoryTotal counter) increases but only up to the maximum (represented by the KbytesMemoryMax counter).</p> <p>You can determine the amount of memory in use by subtracting KBytesMemoryFree from KbytesMemoryTotal.</p> |
| KBytesMemoryMax   | The amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine.                                                                                                                                                                                                                                                                                                                                                                           |
| KBytesMemoryTotal | The current total dynamic memory block size, including free and in-use memory, of Tomcat Java Virtual Machine.                                                                                                                                                                                                                                                                                                                                                      |

## Cisco Tomcat Web Application

The Cisco Tomcat Web Application object provides information about how to run web applications.

The URLs for the web application provide the basis for the instance name for each Tomcat Web Application, as explained in the following examples:

- Cisco Unified Communications Manager Administration (`https://<IP Address>:8443/ccmadmin`) is identified by `ccmadmin`.
- Cisco Unified Serviceability (`https://<IP Address>:8443/ccmservice`) is identified by `ccmservice`.
- Cisco Unified Communications Manager User Options (`https://<IP Address>:8443/ccmuser`) is identified by `ccmuser`.
- Cisco Unity Connection Administration (`https://<IP Address>:8443/cuadmin`) is identified by `cuadmin`.
- URLs that do not have an extension, such as `https://<IP Address>:8443` or `http://<IP Address>:8080`, are identified by `_root`.

The following table contains information on the Tomcat Web Application counters.

**Table 23: Tomcat Web Application**

| Counters       | Counter Description                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Errors         | The total number of HTTP errors (for example, 401 Unauthorized) that a Unified Communications Manager-related or Cisco Unity Connection-related web application encounters. |
| Requests       | The total number of requests that the web application handles. Each time that a web application is accessed, its Requests counter increments accordingly.                   |
| SessionsActive | The number of active or in use sessions in the web application.                                                                                                             |

## Database Change Notification Client

The Database Change Notification Client object provides information about change notification clients. The following table contains information about the Database Change Notification Client counters.

**Table 24: Database Change Notification Client**

| Counters           | Counter Descriptions                                                                                                                                                                                                                                                                                      |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MessagesProcessed  | The number of database change notifications that have been processed. This counter refreshes every 15 seconds.                                                                                                                                                                                            |
| MessagesProcessing | The number of change notification messages that are currently being processed or are waiting to be processed in the change notification queue for this client. This counter refreshes every 15 seconds.                                                                                                   |
| QueueHeadPointer   | The head pointer to the change notification queue. The head pointer acts as the starting point in the change notification queue. To determine the number of notifications in the queue, subtract the head pointer value from the tail pointer value. By default, this counter refreshes every 15 seconds. |
| QueueMax           | The largest number of change notification messages that will be processed for this client. This counter remains cumulative since the last restart of the Cisco Database Layer Monitor service.                                                                                                            |

| Counters         | Counter Descriptions                                                                                                                                                                                                                                                                                      |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QueueTailPointer | The tail pointer to the change notification queue. The tail pointer represents the ending point in the change notification queue. To determine the number of notifications in the queue, subtract the head pointer value from the tail pointer value. By default, this counter refreshes every 15 seconds |
| TablesSubscribed | The number of tables in which this client has subscribed.                                                                                                                                                                                                                                                 |

## Database Change Notification Server

The Database Change Notification Server object provides information about different change-notification-related statistics. The following table contains information about the Database Change Notification Server counters.

**Table 25: Database Change Notification Server**

| Counter                | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clients                | The number of change notification clients (services and servlets) that have subscribed for change notification.                                                                                                                                                                                                                                                                                                                                                                                                     |
| CNProcessed            | The total number of change notification messages processed by the server since reboot.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Queue Delay            | <p>The number of seconds that the change notification process has messages to process but is not processing them. This condition is true if:</p> <ul style="list-style-type: none"> <li>• either Change Notification Requests Queued in Database (QueuedRequestsInDB) and Change Notification Requests Queued in Memory (QueuedRequestsInMemory) are non-zero, or</li> <li>• the Latest Change Notification Messages Processed count is not changing.</li> </ul> <p>This condition is checked every 15 seconds.</p> |
| QueuedRequestsInDB     | The number of change notification records that are in the DBCNQueue (Database Change Notification Queue) table through direct TCP/IP connection (not queued in shared memory). This counter refreshes every 15 seconds.                                                                                                                                                                                                                                                                                             |
| QueuedRequestsInMemory | The number of change notification requests that are queued in shared memory.                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Database Change Notification Subscription

The Database Change Notification Subscription object displays the names of tables where the client receives Change Notifications.

The SubscribedTable object displays the table with the service or servlet that receives change notifications. Because the counter does not increment, this display occurs for informational purposes only.

## Database Local DSN

The Database Local Data Source Name (DSN) object and LocalDSN counter provide the DSN information for the local machine. The following table contains information on the Database local DSN.

**Table 26: Database Local Data Source Name**

| Counters            | Counter Descriptions                                     |
|---------------------|----------------------------------------------------------|
| CcmDbSpace_Used     | The amount of Ccm DbSpace that is consumed               |
| CcmtempDbSpace_Used | The amount of Ccmtemp DbSpace that is consumed.          |
| CNDbSpace_Used      | The percentage of CN DbSpace that is consumed.           |
| LocalDSN            | The DSN that is being referenced from the local machine. |
| SharedMemory_Free   | The total shared memory that is free.                    |
| SharedMemory_Used   | The total shared memory that is used.                    |
| RootDbSpace_Used    | The amount of RootDbSpace that is consumed.              |

## DB User Host Information Counters

The DB User Host Information object provides information about DB User Host.

The DB:User:Host Instance object displays the number of connections that are present for each instance of DB:User:Host.

## Enterprise Replication DBSpace Monitors

The enterprise replication DBSpace monitors object displays the usage of various ER DbSpaces. The following table contains information about the enterprise replication DB monitors.

**Table 27: Enterprise Replication DBSpace Monitors**

| Counters         | Counter Descriptions                                            |
|------------------|-----------------------------------------------------------------|
| ERDbSpace_Used   | The amount of enterprise replication DbSpace that was consumed. |
| ERSBDbSpace_Used | The amount of ERDbSpace that was consumed.                      |

## Enterprise Replication Perfmon Counters

The Enterprise Replication Perfmon Counter object provides information about the various replication counters.

The ServerName:ReplicationQueueDepth counter displays the server name followed by the replication queue depth.

## IP

The IP object provides information on the IPv4-related statistics on your system. The following table contains information about the IP counters.

**Note** These counters are also part of the IP6 object, which supports Unified Communications Manager and provides information about the IPv6-related statistics on your system.

**Table 28: IP Counters**

| Counters         | Counter Descriptions                                                                                                                                                                                                                                |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frag Creates     | The number of IP datagrams fragments that are generated at this entity.                                                                                                                                                                             |
| Frag Fails       | The number of IP datagrams that are discarded at this entity because the datagrams cannot be fragmented, such as datagrams where the Do not Fragment flag is set.                                                                                   |
| Frag OKs         | The number of IP datagrams that are successfully fragmented at this entity.                                                                                                                                                                         |
| In Delivers      | The number of input datagrams that are delivered to IP user protocols. This counter includes Internet Control Message Protocol (ICMP).                                                                                                              |
| In Discards      | The number of input IP datagrams where no issues are encountered, but which are discarded. One possible reason is a lack of buffer space. This counter does not include any datagrams that are discarded while awaiting reassembly.                 |
| In HdrErrors     | The number of input datagrams that are discarded with header errors. This counter includes bad checksums, version number mismatch, other format errors, time-to-live exceeded, and other errors that are discovered in processing their IP options. |
| In Receives      | The number of input datagrams that are received from all network interfaces. This counter includes datagrams that were received with errors                                                                                                         |
| In UnknownProtos | The number of locally addressed datagrams that are received successfully but discarded because of an unknown or unsupported protocol.                                                                                                               |

| Counters       | Counter Descriptions                                                                                                                                                                                                                                                                                                                                           |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InOut Requests | The number of incoming IP datagrams that are received and the number of outgoing IP datagrams that are sent.                                                                                                                                                                                                                                                   |
| Out Discards   | The number of output IP datagrams that are not transmitted and are discarded. One possible reason is a lack of buffer space.                                                                                                                                                                                                                                   |
| Out Requests   | This counter represents the total number of IP datagrams that local IP user-protocols (including ICMP) supply to IP in requests transmission. This counter does not include any datagrams that were counted in ForwDatagrams.                                                                                                                                  |
| Reasm Fails    | <p>The number of IP reassembly failures that the IP reassembly algorithm detected, including time outs and errors.</p> <p>This counter does not represent the discarded IP fragments because some algorithms, such as the algorithm in RFC 815, can lose track of the number of fragments because these algorithms combine fragments as they are received.</p> |
| Reasm OKs      | The number of IP datagrams that are successfully reassembled.                                                                                                                                                                                                                                                                                                  |
| Reasm Reqds    | The number of IP fragments that are received that require reassembly at this entity.                                                                                                                                                                                                                                                                           |

## Memory

The memory object provides information about the usage of physical memory and swap memory on the server. The following table contains information about memory counters.

**Table 29: Memory**

| Counters     | Counter Descriptions                                                                                                                                                                                                                                                                                                                        |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % Mem Used   | <p>Displays the system physical memory utilization as a percentage. The value of this counter is calculated as follows:</p> $\frac{\text{Total KBytes} - \text{Free KBytes} - \text{Buffers KBytes} - \text{Cached KBytes} + \text{Shared KBytes}}{\text{Total KBytes}}$ <p>This value also corresponds to the Used KBytes/Total KBytes</p> |
| % Page Usage | The percentage of active pages.                                                                                                                                                                                                                                                                                                             |

| Counters            | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % VM Used           | <p>Displays the system virtual memory utilization as a percentage. The value of this counter is calculated as follows:</p> $\frac{\text{Total KBytes} - \text{Free KBytes} - \text{Buffers KBytes} - \text{Cached KBytes} + \text{Shared KBytes} + \text{Used Swap KBytes}}{\text{Total KBytes} + \text{Total Swap KBytes}}$ <p>This value also corresponds to Used VM KBytes/Total VM KBytes.</p>                         |
| Buffers KBytes      | The capacity of buffers in your system in kilobytes.                                                                                                                                                                                                                                                                                                                                                                       |
| Cached KBytes       | The amount of cached memory in kilobytes.                                                                                                                                                                                                                                                                                                                                                                                  |
| Free KBytes         | The total amount of memory that is available in your system in kilobytes.                                                                                                                                                                                                                                                                                                                                                  |
| Free Swap KBytes    | The amount of free swap space that is available in your system in kilobytes.                                                                                                                                                                                                                                                                                                                                               |
| HighFree            | <p>The amount of free memory in the high region.</p> <p>The Linux kernel splits the virtual memory address space into memory regions. The high memory is memory above a certain physical address, and its amount depends on the total memory and the type of kernel on the system.</p> <p>For the Unified Communications Manager system with 4 GB memory, the high memory is roughly in the address of 896M to 4096M.</p>  |
| HighTotal           | <p>The total amount of memory in the high region.</p> <p>The Linux kernel splits the virtual memory address space into memory regions. The high memory is memory above a certain physical address, and its amount depends on the total memory and the type of kernel on the system.</p> <p>For the Unified Communications Manager system with 4 GB memory, the high memory is roughly in the address of 896M to 4096M.</p> |
| Page Faults Per Sec | The number of page faults (both major and minor) that the system makes per second (post 2.5 kernels only). This reading does not necessarily represent a count of page faults that generate input and output (I/O) because some page faults can get resolved without I/O.                                                                                                                                                  |
| Low Total           | The total low (non-paged) memory for kernel.                                                                                                                                                                                                                                                                                                                                                                               |

| Counters                  | Counter Descriptions                                                                                                                                                    |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low Free                  | The total free low (non-paged) memory for kernel.                                                                                                                       |
| Page Major Faults Per Sec | The number of major faults that the system makes per second that require a memory page from the disk (post 2.5 kernels only).                                           |
| Pages                     | The number of pages that the system pages in from the disk, plus the number of pages that the system pages out to the disk.                                             |
| Pages Input               | The number of pages that the system pages in from the disk.                                                                                                             |
| Pages Input Per Sec       | The total number of kilobytes that the system pages in from the disk per second.                                                                                        |
| Pages Output              | The number of pages that the system pages out to the disk.                                                                                                              |
| Pages Output Per Sec      | The total number of kilobytes that the system pages out to the disk per second.                                                                                         |
| Shared KBytes             | The amount of shared memory in your system in kilobytes.                                                                                                                |
| SlabCache                 | The memory used by created slabcaches by various kernel components, as a macroscopic counter representing the sum of all the individual entries in the proc's slabinfo. |
| SwapCached                | The amount of Swap used as cache memory. Memory that once was swapped out, is swapped back in, but is still in the swapfile.                                            |
| Total KBytes              | The total amount of memory in your system in kilobytes.                                                                                                                 |
| Total Swap KBytes         | The total amount of swap space in your system in kilobytes.                                                                                                             |
| Total VM KBytes           | The total amount of system physical and memory and swap space (Total Kbytes + Total Swap Kbytes) that is in use in your system in kilobytes.                            |

| Counters         | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used KBytes      | <p>The amount of in-use physical memory. The value of the Used KBytes counter is calculated as follows:</p> $\text{Total KBytes} - \text{Free KBytes} - \text{Buffers KBytes} - \text{Cached KBytes} + \text{Shared KBytes}$ <p>The Used KBytes value differs from the Linux term that displays in the top or free command output. The Used value that displays in the top or free command output equals the difference in Total KBytes - Free KBytes and also includes the sum of Buffers KBytes and Cached KBytes.</p> |
| Used Swap KBytes | This counter represents the amount of swap space that is in use on your system in kilobytes.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Used VM KBytes   | <p>This counter represents the system physical memory and the amount of swap space that is in use on your system in kilobytes. The value is calculated as follows:</p> $\text{Total KBytes} - \text{Free KBytes} - \text{Buffers KBytes} - \text{Cached KBytes} + \text{Shared KBytes} + \text{Used Swap KBytes}$ <p>This value corresponds to Used Mem KBytes + Used Swap KBytes.</p>                                                                                                                                   |

## Network Interface

The network interface object provides information about the network interfaces on the system. The following table contains information about network interface counters.

**Table 30: Network Interface**

| Counters   | Counter Descriptions                                                                                                                                                                                                                             |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rx Bytes   | The number of bytes, including framing characters, that are received on this interface.                                                                                                                                                          |
| Rx Dropped | The number of inbound packets that are chosen to be discarded even though no errors have been detected. This action prevents the packet from being delivered to a higher-layer protocol. Discarding packets also frees up buffer space.          |
| Rx Errors  | The number of inbound packets (packet-oriented interfaces) and the number of inbound transmission units (character-oriented or fixed-length interfaces) that contain errors that prevented them from being delivered to a higher-layer protocol. |

| Counters      | Counter Descriptions                                                                                                                                                                                                                                     |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rx Multicast  | The number of multicast packets that are received on this interface.                                                                                                                                                                                     |
| Rx Packets    | The number of packets that this sublayer delivered to a higher sublayer. This situation does not include the packets that are addressed to a multicast or broadcast address at this sublayer.                                                            |
| Total Bytes   | The total number of received (Rx) bytes and transmitted (Tx) bytes.                                                                                                                                                                                      |
| Total Packets | The total number of Rx packets and Tx packets.                                                                                                                                                                                                           |
| Tx Bytes      | The total number of octets, including framing characters, that are transmitted out from the interface.                                                                                                                                                   |
| Tx Dropped    | The number of outbound packets that are chosen to be discarded even though no errors are detected. This action prevents the packet from being delivered to a higher layer protocol. Discarding a packet also frees up buffer space.                      |
| Tx Errors     | The number of outbound packets (packet-oriented interfaces) and the number of outbound transmission units (character-oriented or fixed-length interfaces) that are transmitted because of errors.                                                        |
| Tx Packets    | The total number of packets that the higher-level protocols requested for transmission, including those that are discarded or not sent. This situation does not include packets that are addressed to a multicast or broadcast address at this sublayer. |
| Tx QueueLen   | The length of the output packet queue (in packets).                                                                                                                                                                                                      |

## Number of Replicates Created and State of Replication

The Number of Replicates Created and State of Replication object provides real-time replication information for the system. The following table contains information about replication counters.

**Table 31: Number of Replicates Created and State of Replication**

| Counters                     | Counter Descriptions                                                                                                                 |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Number of Replicates Created | The number of replicates that are created by Informix for the DB tables. This counter displays information during Replication Setup. |

| Counters        | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Replicate_State | <p>The state of replication. The following list provides possible values:</p> <p><b>0</b></p> <p>Initializing. The counter equals 0 when the server is not defined or when the server is defined but realizes the template has not completed.</p> <p><b>1</b></p> <p>Replication setup script fired from this node. Cisco recommends that you run <b>utils dbreplication status</b> on the CLI to determine the location and cause of the failure.</p> <p><b>2</b></p> <p>Good Replication.</p> <p><b>3</b></p> <p>Bad Replication. A counter value of 3 indicates replication in the cluster is bad. It does not mean that replication failed on a particular server in the cluster. Cisco recommends that you run <b>utils dbreplication status</b> on the CLI to determine the location and cause of the failure.</p> <p><b>4</b></p> <p>Replication setup did not succeed.</p> |

## Partition

The partition object provides information about the file system and its usage in the system. The following table contains information about partition counters. These counters are also available for the spare partition, if present.

**Table 32: Partition**

| Counters       | Counter Descriptions                                                                                                    |
|----------------|-------------------------------------------------------------------------------------------------------------------------|
| % CPU Time     | The percentage of CPU time that is dedicated to handling IO requests that were issued to the disk.                      |
| % Used         | The percentage of disk space that is in use on this file system.                                                        |
| % Wait in Read | Not Used. The Await Read Time counter replaces this counter. This counter is no longer valid with the counter value -1. |

| Counters            | Counter Descriptions                                                                                                                                                                                                       |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % Wait in Write     | Not Used. The Await Write Time counter replaces this counter. This counter is no longer valid with the counter value -1.                                                                                                   |
| Await Read Time     | The average time measured in milliseconds for read requests that are issued to the device to be served.                                                                                                                    |
| Await Time          | The average time measured in milliseconds for input and output (I/O) requests that are issued to the device to be served. This reading includes the time spent by the requests in queue and the time spent servicing them. |
| Await Write Time    | The average time measured in milliseconds for write requests that are issued to the device to be served.                                                                                                                   |
| Queue Length        | The average queue length for the requests that are issued to the disk.                                                                                                                                                     |
| Read Bytes Per Sec  | The amount of data in bytes per second that is read from the disk.                                                                                                                                                         |
| Total Mbytes        | The amount of total disk space in megabytes that is on this file system.                                                                                                                                                   |
| Used Mbytes         | The amount of disk space in megabytes that is in use on this file system.                                                                                                                                                  |
| Write Bytes Per Sec | The amount of data that is written to the disk in bytes per second.                                                                                                                                                        |

## Process

The process object provides information about the processes that are running on the system. The following table contains information about process counters.

**Table 33: Process**

| Counters        | Counter Descriptions                                                                                                                                                    |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % CPU Time      | This counter, which is expressed as a percentage of total central processing unit (CPU) time, represents the tasks share of the elapsed CPU time since the last update. |
| % MemoryUsage   | This counter represents the percentage of physical memory that a task is currently using.                                                                               |
| Data Stack Size | This counter represents the stack size for task memory status.                                                                                                          |

| Counters           | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nice               | <p>This counter represents the nice value of the task.</p> <ul style="list-style-type: none"> <li>• A negative nice value indicates that the process has a higher priority.</li> <li>• A positive nice value indicates that the process has a lower priority.</li> </ul> <p><b>Note</b> If the nice value equals zero, do not adjust the priority when you are determining the dispatchability of a task.</p> |
| Page Fault Count   | <p>This counter represents the number of major page faults that a task encounters that requires the data to be loaded into memory.</p>                                                                                                                                                                                                                                                                        |
| PID                | <p>This counter displays the task-unique process ID. The ID periodically wraps, but the value never equals zero.</p>                                                                                                                                                                                                                                                                                          |
| Process Status     | <p>This counter displays the process status:</p> <p><b>0</b><br/>Running</p> <p><b>1</b><br/>Sleeping</p> <p><b>2</b><br/>Uninterruptible disk sleep</p> <p><b>3</b><br/>Zombie</p> <p><b>4</b><br/>Stopped</p> <p><b>5</b><br/>Paging</p> <p><b>6</b><br/>Unknown</p>                                                                                                                                        |
| Shared Memory Size | <p>This counter displays the amount of shared memory in kilobytes (KB) that a task is using. Other processes could potentially share the same memory.</p>                                                                                                                                                                                                                                                     |
| STime              | <p>This counter displays the system time (STime), measured in jiffies, that this process has scheduled in kernel mode. A jiffy corresponds to a unit of CPU time and is used as a base of measurement. One second comprises 100 jiffies.</p>                                                                                                                                                                  |

| Counters            | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thread Count        | This counter displays the number of threads that are currently grouped with a task. A negative value (-1) indicates that this counter is currently not available. This situation happens when thread statistics (which include all performance counters in the Thread object as well as the Thread Count counter in the Process object) are turned off because the system total processes and threads exceed the default threshold value. |
| Total CPU Time Used | This counter displays the total CPU time in jiffies that the task used in user mode and kernel mode since the task started.                                                                                                                                                                                                                                                                                                               |
| UTime               | This counter displays the time, measured in jiffies, that a task has scheduled in user mode.                                                                                                                                                                                                                                                                                                                                              |
| VmData              | This counter displays the virtual memory usage of the heap for the task in KB.                                                                                                                                                                                                                                                                                                                                                            |
| VmRSS               | This counter displays the virtual memory (Vm) resident set size (RSS) that is currently in physical memory in KB. This reading includes the code, data, and stack.                                                                                                                                                                                                                                                                        |
| VmSize              | This counter displays the total virtual memory usage for a task in KB. This reading includes all code, data, shared libraries, and pages that have been swapped out.<br><br>Virtual Image = swapped size + resident size                                                                                                                                                                                                                  |
| Wchan               | This counter displays the channel (system call) in which the process is waiting.                                                                                                                                                                                                                                                                                                                                                          |

## Processor

The processor object provides information about different processor time usage in percentages. The following table contains information about processor counters.

**Table 34: Processor**

| Counters   | Counter Descriptions                                                                                                                                                                                 |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % CPU Time | This counter displays the processors share of the elapsed central processing unit (CPU) time, excluding idle time, since the last update. This share is expressed as a percentage of total CPU time. |

| Counters           | Counter Descriptions                                                                                                                                                                                                 |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Idle Percentage    | This counter displays the percentage of time that the processor is in the idle state and does not have an outstanding disk input and output (I/O) request.                                                           |
| IOWait Percentage  | This counter represents the percentage of time that the processor is in the idle state while the system had an outstanding disk I/O request.                                                                         |
| Irq Percentage     | This counter represents the percentage of time that the processor spends executing the interrupt request that is assigned to devices, including the time that the processor spends sending a signal to the computer. |
| Nice Percentage    | This counter displays the percentage of time that the processor spends executing at the user level with nice priority.                                                                                               |
| Softirq Percentage | This counter represents the percentage of time that the processor spends executing the soft IRQ and deferring task switching to get better CPU performance.                                                          |
| System Percentage  | This counter displays the percentage of time that the processor is executing processes at the system (kernel) level.                                                                                                 |
| User Percentage    | This counter displays the percentage of time that the processor is executing normal processes at the user (application) level.                                                                                       |

## System

The System object provides information about file descriptors on your system.

The following table contains information about system counters.

**Table 35: System**

| Counters       | Counter Descriptions                                                    |
|----------------|-------------------------------------------------------------------------|
| Allocated FDs  | The number of allocated file descriptors.                               |
| Being Used FDs | The number of file descriptors that are currently in use in the system. |
| Freed FDs      | The number of allocated file descriptors on the system that are freed.  |

| Counters                  | Counter Descriptions                                                                                                                                                                                                                                      |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IOPerSecond               | The number of input and output (I/O) operations on all disk partitions per second on this server. If you experience a system performance issue, use the information in this counter to measure the impact of the aggregate I/O operations on this server. |
| IOReadReqMergedPerSecond  | The number of read requests merged per second that are queued to all devices on this server.                                                                                                                                                              |
| IOWriteReqMergedPerSecond | The number of write requests merged per second that are queued to all devices on this server.                                                                                                                                                             |
| IOReadReqPerSecond        | The number of read requests per second that are issued to all devices on this server.                                                                                                                                                                     |
| IOWriteReqPerSecond       | The number of write requests per second that are issued to all devices on this server.                                                                                                                                                                    |
| IOSectorsReadPerSecond    | The number of sectors read per second from all devices on this server.                                                                                                                                                                                    |
| IOSectorsWrittenPerSecond | The number of sectors written per second to all devices on this server.                                                                                                                                                                                   |
| IOKBytesReadPerSecond     | The number of KBytes read per second from all devices on this server.                                                                                                                                                                                     |
| IOKBytesWrittenPerSecond  | The number of KBytes written per second to all devices on this server.                                                                                                                                                                                    |
| IOSectorsReqSizeAvg       | The average size in sectors of the requests that are issued to all devices on this server.                                                                                                                                                                |
| IOReqQueueSizeAvg         | The average queue length of the requests that are issued to all devices on this server.                                                                                                                                                                   |
| IOAwait                   | The average time in milliseconds for I/O requests that are issued to all devices to be served. This reading includes the time spent by the requests in queue and the time spent servicing the requests.                                                   |
| IOServiceTime             | The average service time in milliseconds for I/O requests that are issued to all devices on this server.                                                                                                                                                  |
| IOCpuUtil                 | The percentage of CPU time during which I/O requests are issued to the device (bandwidth utilization for the device) on this server.                                                                                                                      |
| Max FDs                   | The maximum number of file descriptors that are allowed on the system.                                                                                                                                                                                    |

| Counters        | Counter Descriptions                                               |
|-----------------|--------------------------------------------------------------------|
| Total CPU Time  | The total time in jiffies that the system has been up and running. |
| Total Processes | The number of processes on the system.                             |
| Total Threads   | The number of threads on the system.                               |

## TCP

The TCP object provides information on the TCP statistics on your system.

The following table contains information about the TCP counters.

**Table 36: TCP**

| Counters      | Counter Description                                                                                                                                                                                                                                                                                       |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Opens  | This counter displays the number of times that the TCP connections make a direct transition to the SYN-SENT state from the CLOSED state.                                                                                                                                                                  |
| Attempt Fails | This counter displays the number of times that the TCP connections make a direct transition to the CLOSED state from either the SYN-RCVD state or the SYN-RCVD state. The counter also displays the number of times TCP connections make a direct transition to the LISTEN state from the SYS-RCVD state. |
| Curr Estab    | This counter displays the number of TCP connections with a current state of ESTABLISHED or CLOSE-WAIT.                                                                                                                                                                                                    |
| Estab Resets  | This counter displays the number of times that the TCP connections make a direct transition to the CLOSED state from the ESTABLISHED state or the CLOSE-WAIT state.                                                                                                                                       |
| In Segs       | This counter displays the total number of segments that are received, including those that are received in error. This count only includes segments that are received on currently established connections.                                                                                               |
| InOut Segs    | This counter displays the total number of segments that are sent and the total number of segments that are received.                                                                                                                                                                                      |
| Out Segs      | This counter displays the total number of segments that are sent. This count only includes segments that are sent on currently established connections, but excludes retransmitted octets.                                                                                                                |

| Counters      | Counter Description                                                                                                                               |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Passive Opens | This counter displays the number of times that TCP connections make a direct transition to the SYN-RCVD state from the LISTEN state.              |
| RetransSegs   | This counter displays the total number of segments that are retransmitted because the segment contains one or more previously transmitted octets. |

## Thread

The Thread object provides a list of running threads on your system.

The following table contains information about the Thread counters.

*Table 37: Thread*

| Counters   | Counter Description                                                                                                                                            |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| % CPU Time | This counter displays the threads share of the elapsed CPU time since the last update. This counter expresses the share as a percentage of the total CPU time. |
| PID        | This counter displays the threads leader process ID.                                                                                                           |

## AXL Web Service

The AXL Web Service object provides information about the AXL Web Service running on your system. The following table contains information about the AXL Web Service counters.

*Table 38: AXL Web Service*

| Counters      | Counter Description                                                                                                                                                                                                                                          |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ThrottleCount | This counter represents the number of times Administrative XML Layer (AXL) throttling has been engaged since the last restart of the Cisco AXL Web Service. Throttling occurs when the AXL service receives more change requests than it is able to process. |

| Counters      | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ThrottleState | This counter represents whether Administrative XML Layer (AXL) throttling is currently active (throttling is engaged). A value of 1 in this counter indicates that throttling is currently engaged, which means that any application attempting to send a write request to Unified Communications Manager through AXL will be denied due to AXL throttling. Read requests will continue to be allowed and processed while AXL throttling is engaged. A value of zero indicates that throttling is not occurring at this time and all read and write requests will be processed. |

## Ramfs

The Ramfs object provides information about the ram file system. The following table contains information on the Ramfs counters.

**Table 39: Ramfs**

| Counters   | Counter Description                                                                                                                                                                                                                                                                                                                  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FilesTotal | This counter represents the total number of files in the ram-based file system (ramfs).                                                                                                                                                                                                                                              |
| SpaceFree  | This counter represents the amount of free data blocks in the ram-based file system (ramfs). A block is a uniformly sized unit of data storage for a filesystem. The block size specifies the size that the file system will use to read and write data. On the Unified Communications Manager system, the block size is 4096 bytes. |
| SpaceUsed  | This counter represents the amount of used data blocks in the ram-based filesystem (ramfs). A block is a uniformly sized unit of data storage for a file system. The block size specifies the size that the file system will use to read and write data. On the Unified Communications Manager system, the block size is 4096 bytes. |

## Voice and Video Counters

### Cisco Analog Access

The Cisco Analog Access object provides information about registered Cisco Analog Access gateways. The following table contains information about CiscoAnalog Access counters.

Table 40: Cisco Analog Access

| Counters             | Counter Description                                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutboundBusyAttempts | This counter represents the total number of times that Unified Communications Manager attempts a call through the analog access gateway when all ports were busy. |
| PortsActive          | This counter represents the number of ports that are currently in use (active). A port appears active when a call is in progress on that port.                    |
| PortsOutOfService    | This counter represents the number of ports that are currently out of service. Counter applies only to loop-start and ground-start trunks.                        |

## Cisco Annunciator Device

The Cisco Annunciator Device object provides information about registered Cisco annunciator devices. The following table contains information about CiscoAnnunciator counters.

Table 41: Cisco Annunciator Device

| Counters          | Counter Description                                                                                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutOfResources    | This counter represents the total number of times that Unified Communications Manager attempted to allocate an annunciator resource from an annunciator device and failed; for example, because all resources were already in use. |
| ResourceActive    | This counter represents the total number of annunciator resources that are currently active (in use) for an annunciator device.                                                                                                    |
| ResourceAvailable | This counter represents the total number of resources that are not active and are still available to be used at the current time for the annunciator device.                                                                       |
| ResourceTotal     | This counter represents the total number of annunciator resources that are configured for an annunciator device.                                                                                                                   |

## Cisco Call Restriction

The Cisco Call Restriction object provides information about the number of failures that result due to logical partitioning policy restrictions. The following table contains information about Cisco Call Restriction counters.

Table 42: Cisco Call Restriction

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                            |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AdHocConferenceFailures       | This counter represents the number of attempts that failed to add a participant to an Ad Hoc Conference because the call path between the geolocation of the devices already in conference and the device being invited to the conference was restricted due to a logical partition policy.                    |
| BasicCallFailures             | This counter represents the number of basic calls that have failed because of logical partition policy restrictions between the geolocations of the called and calling parties. A basic call is any call that does not utilize supplementary services such as transfer, forward, and so on.                    |
| ForwardingFailures            | This counter represents the number of attempts to forward an incoming call which failed because of a logical partition policy restriction between the geolocations of the two parties involved.                                                                                                                |
| LogicalPartitionFailuresTotal | This counter represents the total number of call attempts that have failed because of a restriction of calls between geolocations of the calling and called parties. This includes the number of failures for Transfer, AdHoc Conference, Meet-Me Conference, PickUp, Call Park, Shared Lines and Basic Calls. |
| MeetMeConferenceFailures      | This counter represents the number of attempts that failed to add a participant to a Meet-Me conference because the call path between the geolocation of the devices already in conference and the device attempting to join the conference was restricted due to a logical partition policy.                  |
| MidCallFailures               | This counter represents the number of calls that have failed because of a restriction between the geolocations of the called or connected parties after the initial policy check.                                                                                                                              |
| ParkRetrievalFailures         | This counter represents the number of attempts to perform a Call Park operation that failed because the device that was attempting to retrieve the call had a logical partition policy restriction with the geolocation of the parked party.                                                                   |
| PickUpFailures                | This counter represents the number of attempts to perform a PickUp operation that failed because the device on which the pickup was being attempted had a logical partition policy restriction with the geolocation of the calling device.                                                                     |

| Counters           | Counter Description                                                                                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SharedLineFailures | This counter represents the number of attempts to use a shared line which failed because the caller or callee has a logical partition policy restriction with the geolocation of the devices having the shared lines. |
| TransferFailures   | This counter represents the number of call transfer attempts that failed due to restriction of calls between the geolocation of the transferred party and the transferred destination.                                |

## Cisco CallManager

The CiscoCallManager object provides information about calls, applications, and devices that are registered with the Unified Communications Manager. The following table contains information about CiscoCallManager counters.

**Table 43: CiscoCallManager**

| Counters                     | Counter Description                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AnnunciatorOutOfResources    | This counter represents the total number of times that Unified Communications Manager attempted to allocate an annunciator resource from those that are registered to a Unified Communications Manager when none were available.                                                                                                                                                                  |
| AnnunciatorResourceActive    | This counter represents the total number of annunciator resources that are currently in use on all annunciator devices that are registered with a Unified Communications Manager.                                                                                                                                                                                                                 |
| AnnunciatorResourceAvailable | This counter represents the total number of annunciator resources that are not active and are currently available.                                                                                                                                                                                                                                                                                |
| AnnunciatorResourceTotal     | This counter represents the total number of annunciator resources that are provided by all annunciator devices that are currently registered with Unified Communications Manager.                                                                                                                                                                                                                 |
| AuthenticatedCallsActive     | This counter represents the number of authenticated calls that are currently active (in use) on Unified Communications Manager. An authenticated call designates one in which all the endpoints that are participating in the call are authenticated. An authenticated phone uses the Transport Layer Security (TLS) authenticated Skinny protocol signaling with Unified Communications Manager. |

| Counters                              | Counter Description                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AuthenticatedCallsCompleted           | This counter represents the number of authenticated calls that connected and subsequently disconnected through Unified Communications Manager. An authenticated call designates one in which all the endpoints that are participating in the call are authenticated. An authenticated phone uses the TLS authenticated Skinny protocol signaling with Unified Communications Manager. |
| AuthenticatedPartiallyRegisteredPhone | This counter represents the number of partially registered, authenticated SIP phones.                                                                                                                                                                                                                                                                                                 |
| AuthenticatedRegisteredPhones         | This counter represents the total number of authenticated phones that are registered to Unified Communications Manager. An authenticated phone uses the TLS authenticated Skinny protocol signaling with Unified Communications Manager.                                                                                                                                              |
| BRChannelsActive                      | This counter represents the number of BRI voice channels that are currently in an active call on this Unified Communications Manager.                                                                                                                                                                                                                                                 |
| BRISpansInService                     | This counter represents the number of BRI spans that are currently available for use.                                                                                                                                                                                                                                                                                                 |
| CallManagerHeartBeat                  | This counter represents the heartbeat of Unified Communications Manager. This incremental count indicates that Unified Communications Manager is up and running. If the count does not increment, that indicates that Unified Communications Manager is down.                                                                                                                         |
| CallsActive                           | This counter represents the number of voice or video streaming connections that are currently in use (active); in other words, the number of calls that actually have a voice path that is connected on Unified Communications Manager.                                                                                                                                               |
| CallsAttempted                        | This counter represents the total number of attempted calls. An attempted call occurs anytime that a phone goes off hook and back on hook, regardless of whether any digits were dialed, or whether it connected to a destination. The system considers some call attempts during feature operations (such as transfer and conference) to be attempted calls.                         |
| CallsCompleted                        | This counter represents the number of calls that were actually connected (a voice path or video stream was established) through Unified Communications Manager. This number increases when the call terminates.                                                                                                                                                                       |

| Counters                            | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsInProgress                     | <p>This counter represents the number of voice or video calls that are currently in progress on Unified Communications Manager, including all active calls.</p> <p>When a phone that is registered with Skinny Client Control Protocol (SCCP) goes off hook, the CallsInProgress progress counter increments. until it goes back on hook.</p> <p>For Cisco Unified IP Phones 7902, 7905, 7912, 7940, and 7960 that register with SIP, the CallsInProgress counter increments when the dial softkey is pressed.</p> <p>For all other phones that are running SIP, the CallsInProgress counter increments when the first digit is pressed.</p> <p>When all voice or video calls that are in progress are connected, the number of CallsInProgress represents the number of CallsActive. The counter decreases by one when a phone goes back on hook.</p> |
| CM_MediaTermPointsRequestsThrottled | <p>This counter represents the total number of media termination point (MTP) resource requests that have been denied due to throttling (a resource from this MTP was not allocated because, as specified by the Cisco CallManager service parameter, MTP and Transcoder Resource Throttling Percentage, the MTP was being utilized beyond the configured throttle percentage). This counter increments each time a request for an MTP on this Unified Communications Manager node is requested and denied due to MTP throttling and reflects a running total since the start of the Cisco CallManager Service.</p>                                                                                                                                                                                                                                     |
| CM_TranscoderRequestsThrottled      | <p>This counter represents the total number of transcoder resource requests that have been denied due to throttling (a resource from this transcoder was not allocated because, as specified by the Cisco CallManager service parameter MTP and Transcoder Resource Throttling Percentage, the transcoder was being utilized beyond the configured throttle percentage). This counter increments each time a request for a transcoder on this Unified Communications Manager node is requested and denied due to transcoder throttling and reflects a running total since the start of the Cisco CallManager Service.</p>                                                                                                                                                                                                                              |

| <b>Counters</b>                    | <b>Counter Description</b>                                                                                                                                                                                                                                         |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EncryptedCallsActive               | This counter represents the number of encrypted calls that are currently active (in use) on this Unified Communications Manager. An encrypted call represents one in which all the endpoints that are participating in the call are encrypted.                     |
| EncryptedCallsCompleted            | This counter represents the number of encrypted calls that were connected and subsequently disconnected through this Unified Communications Manager. An encrypted call represents one in which all the endpoints that are participating in the call are encrypted. |
| EncryptedPartiallyRegisteredPhones | This counter represents the number of partially registered, encrypted SIP phones.                                                                                                                                                                                  |
| EncryptedRegisteredPhones          | This counter represents the total number of encrypted phones that are registered on this Unified Communications Manager.                                                                                                                                           |
| FXOPortsActive                     | This counter represents the number of FXO ports that are currently in use (active) on a Unified Communications Manager.                                                                                                                                            |
| FXOPortsInService                  | This counter represents the number of FXO ports that are currently available for use in the system.                                                                                                                                                                |
| FXSPortsActive                     | This counter represents the number of FXS ports that are currently in use (active) on a Unified Communications Manager.                                                                                                                                            |
| FXSPortsInService                  | This counter represents the number of FXS ports that are currently available for use in the system.                                                                                                                                                                |
| HuntListsInService                 | This counter represents the number of hunt lists that are currently in service on Unified Communications Manager.                                                                                                                                                  |
| HWConferenceActive                 | This counter represents the total number of hardware conference resources that are provided by all hardware conference bridge devices that are currently registered with Unified Communications Manager.                                                           |

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HWConferenceCompleted         | This counter represents the total number of conferences that used a hardware conference bridge (hardware-based conference devices such as Cisco Catalyst 6000, Cisco Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that is allocated from Unified Communications Manager and that have completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.                                        |
| HWConferenceOutOfResources    | This counter represents the total number of times that Unified Communications Manager attempted to allocate a hardware conference resource from those that are registered to a Unified Communications Manager when none was available.                                                                                                                                                                                                                                                                                                                                 |
| HWConferenceResourceActive    | This counter represents the total number of conference resources that are in use on all hardware conference devices (such as Cisco Catalyst 6000, Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that are registered with Unified Communications Manager. System considers conference to be active when one or more calls are connected to a bridge.                                                                                                                                                                                                          |
| HWConferenceResourceAvailable | This counter represents the number of hardware conference resources that are not in use and that are available to be allocated on all hardware conference devices (such as Cisco Catalyst 6000, Cisco Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that are allocated from Unified Communications Manager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge. |
| HWConferenceResourceTotal     | This counter represents the number of active conferences on all hardware conference devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Counters                | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InitializationState     | <p>This counter represents the current initialization state of Unified Communications Manager. Unified Communications Manager includes the following initialization state values:</p> <p>1-Database, 2-Regions, 3-Locations, 4-QoS Policy, 5-Time Of Day, 6-AAR Neighborhoods, 7-Digit Analysis, 8-Route Plan, 9-Call Control, 10-RSVP Session Manager, 11-Supplementary Services, 12-Directory, 13-SDL Link, 14-Device, 100-Initialization Complete.</p> <p>Not all states display when this counter is used. This display does not indicate that an error occurred; this display simply indicates that the states initialized and completed within the refresh period of the performance monitor.</p> |
| LocationOutOfResources  | <p>This counter represents the total number of times that a call through Locations failed due to the lack of bandwidth.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| MCUConferencesActive    | <p>This counter represents the total number of active conferences on all Cisco TelePresence MCU conference bridge devices that are registered with Unified Communications Manager.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| MCUConferencesCompleted | <p>This counter represents the total number of conferences that used a Cisco TelePresence MCU conference bridge allocated from Unified Communications Manager and completed, implying that the conference bridge was allocated and released. A conference is activated when the first call is connected to the bridge. The conference is completed when the last call is disconnected from the bridge.</p>                                                                                                                                                                                                                                                                                              |
| MCUHttpConnectionErrors | <p>This counter represents the total number of times Unified Communications Manager attempted to create HTTP connections to Cisco TelePresence MCU conference bridge device, and failed due to connection errors on the Cisco TelePresence MCU conference bridge side.</p>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MCUHttpNon200OKResponse | <p>This counter represents the total number of times Unified Communications Manager received a non 200 OK HTTP Response from Cisco TelePresence MCU conference bridge, for any HTTP query sent.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                      |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MCUOutOfResources             | This counter represents the total number of times Unified Communications Manager attempted to allocate a conference resource from Cisco TelePresence MCU conference bridge device and failed. For example, the attempt to allocate a conference resource fails, if all the resources are already in use. |
| MOHMulticastResourceActive    | This counter represents the total number of multicast Music On Hold (MOH) resources that are currently in use (active) on all MOH servers that are registered with a Unified Communications Manager.                                                                                                     |
| MOHMulticastResourceAvailable | This counter represents the total number of active multicast MOH connections that are not being used on all MOH servers that are registered with a Unified Communications Manager.                                                                                                                       |
| MOHOutOfResources             | This counter represents the total number of times that the Media Resource Manager attempted to allocate an MOH resource when all available resources on all MOH servers that are registered with a Unified Communications Manager were already active.                                                   |
| MOHTotalMulticastResources    | This counter represents the total number of multicast MOH resources or connections that are provided by all MOH servers that are currently registered with a Unified Communications Manager.                                                                                                             |
| MOHTotalUnicastResources      | This counter represents the total number of unicast MOH resources or streams that are provided by all MOH servers that are currently registered with Unified Communications Manager. Each MOH unicast resource uses one stream.                                                                          |
| MOHUnicastResourceActive      | This counter represents the total number of unicast MOH resources that are currently in use (active) on all MOH servers that are registered with Unified Communications Manager. Each MOH unicast resource uses one stream.                                                                              |
| MOHUnicastResourceAvailable   | This counter represents the total number of unicast MOH resources that are currently available on all MOH servers that are registered with Unified Communications Manager. Each MOH unicast resource uses one stream.                                                                                    |

| Counters                 | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MTPOutOfResources        | This counter represents the total number of times that Unified Communications Manager attempted but failed to allocate a media termination point (MTP) resource from one MTP device that is registered with Unified Communications Manager. This also means that no transcoders were available to act as MTPs.                                                                                                                                                                                                                                                      |
| MTPResourceActive        | This counter represents the total number of MTP resources that are currently in use (active) on all MTP devices that are registered with a Unified Communications Manager. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.                                                                                                                                                                                                                                                                 |
| MTPResourceAvailable     | This counter represents the total number of MTP resources that are not in use and are available to be allocated on all MTP devices that are registered with Unified Communications Manager. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.                                                                                                                                                                                                                                                |
| MTPResourceTotal         | This counter represents the total number of MTP resources that are provided by all MTP devices that are currently registered with Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                   |
| MTP_RequestsThrottled    | This counter represents the total number of MTP resource requests that have been denied due to throttling (a resource from this MTP was not allocated because, as specified by the Cisco CallManager service parameter MTP and Transcoder Resource Throttling Percentage, the MTP was being utilized beyond the configured throttle percentage). This counter increments each time a resource is requested from this MTP and is denied due to throttling. This counter reflects a running total since the MTP device registered with the Cisco CallManager Service. |
| PartiallyRegisteredPhone | This counter represents the number of partially registered phones that are running SIP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PRIChannelsActive        | This counter represents the number of PRI voice channels that are in an active call on a Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| PRISpansInService        | This counter represents the number of PRI spans that are currently available for use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Counters                             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RegisteredAnalogAccess               | This counter represents the number of registered Cisco analog access gateways that are registered with system. The count does not include the number of Cisco analog access ports.                                                                                                                                                                                                                                                         |
| RegisteredMGCPGateway                | This counter represents the number of MGCP gateways that are currently registered in the system.                                                                                                                                                                                                                                                                                                                                           |
| RegisteredOtherStationDevices        | This counter represents the number of station devices other than Cisco hardware IP phones that are currently registered in the system (for example, Cisco IP SoftPhone, CTI port, CTI route point, Cisco voicemail port).                                                                                                                                                                                                                  |
| SIPLineServerAuthorizationChallenges | This counter represents the number of authentication challenges for incoming SIP requests that the Unified Communications Manager server issued to phones that are running SIP. An authentication challenge occurs when a phone that is running SIP with Digest Authentication enabled sends a SIP line request to Unified Communications Manager.                                                                                         |
| SIPLineServerAuthorizationFailures   | This counter represents the number of authentication challenge failures for incoming SIP requests from SIP phones to the Unified Communications Manager server. An authentication failure occurs when a SIP phone with Digest Authentication enabled sends a SIP line request with bad credentials to Unified Communications Manager.                                                                                                      |
| SIPTrunkAuthorization                | This counter represents the number of application-level authorization checks for incoming SIP requests that Unified Communications Manager has issued to SIP trunks. An application-level authorization check occurs when Unified Communications Manager compares an incoming SIP request to the application-level settings on the SIP Trunk Security Profile Configuration window in Cisco Unified Communications Manager Administration. |

| Counters                               | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIPTrunkAuthorizationFailures          | This counter represents the number of application-level authorization failures for incoming SIP requests that have occurred on Unified Communications Manager SIP trunks. An application-level authorization failure occurs when Unified Communications Manager compares an incoming SIP request to the application-level authorization settings on the SIP Trunk Security Profile Configuration window in Cisco Unified Communications Manager Administration and finds that authorization for one or more of the SIP features on that window is not allowed. |
| SIPTrunkServerAuthenticationChallenges | This counter represents the number of authentication challenges for incoming SIP requests that Unified Communications Manager issued to SIP trunks. An authentication challenge occurs when a SIP trunk with Digest Authentication enabled sends a SIP request to Unified Communications Manager.                                                                                                                                                                                                                                                              |
| SIPTrunkServerAuthenticationFailures   | This counter represents the number of authentication challenge failures that occurred for incoming SIP requests from SIP trunks to Unified Communications Manager. An authentication failure occurs when a SIP trunk with Digest Authentication enabled sends a SIP request with bad credentials to Unified Communications Manager.                                                                                                                                                                                                                            |
| SWConferenceActive                     | This counter represents the number of active conferences on all software conference devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                           |
| SWConferenceCompleted                  | This counter represents the total number of conferences that used a software conference bridge that was allocated from a Unified Communications Manager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.                                                                                                                                                      |
| SWConferenceOutOfResources             | This counter represents the total number of times that Unified Communications Manager attempted to allocate a software conference resource from those that are registered to Unified Communications Manager when none were available. Counter includes failed attempts to add a new participant to an existing conference.                                                                                                                                                                                                                                     |

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SWConferenceResourceActive    | This counter represents the total number of conference resources that are in use on all software conference devices that are registered with Unified Communications Manager. The system considers a conference to be active when one or more calls connect to a bridge. One resource equals one stream. |
| SWConferenceResourceAvailable | This counter represents the number of new software-based conferences that can be started at the same time, for Unified Communications Manager. You must have a minimum of three streams available for each new conference. One resource equals one stream.                                              |
| SWConferenceResourceTotal     | This counter represents the total number of software conference resources that are provided by all software conference bridge devices that are currently registered with Unified Communications Manager.                                                                                                |
| SystemCallsAttempted          | This counter represents the total number of server-originated calls and attempted calls to the Unity message waiting indicator (MWI).                                                                                                                                                                   |
| T1ChannelsActive              | This counter represents the number of T1 CAS voice channels that are in an active call on a Unified Communications Manager.                                                                                                                                                                             |
| T1SpansInService              | This counter represents the number of T1 CAS spans that are currently available for use.                                                                                                                                                                                                                |
| TLSConnectedSIPTrunks         | This counter represents the number of SIP trunks that are configured and connected through Transport Layer Security (TLS).                                                                                                                                                                              |
| TLSConnectedWSM               | This counter represents the number of WSM Connectors that is configured and connected to Motorola WSM through Transport Layer Security (TLS).                                                                                                                                                           |
| TranscoderOutOfResources      | This counter represents the total number of times that Unified Communications Manager attempted to allocate a transcoder resource from a transcoder device that is registered to a Unified Communications Manager when none was available.                                                              |
| TranscoderResourceActive      | This counter represents the total number of transcoders that are in use on all transcoder devices that are registered with Unified Communications Manager. A transcoder in use represents one transcoder resource that has been allocated for use in a call. Each transcoder resource uses two streams. |

| Counters                    | Counter Description                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TranscoderResourceAvailable | This counter represents the total number of transcoders that are not in use and that are available to be allocated on all transcoder devices that are registered with Unified Communications Manager. Each transcoder resource uses two streams.                                                                                                                                                          |
| TranscoderResourceTotal     | This counter represents the total number of transcoder resources that are provided by all transcoder devices that are currently registered with Unified Communications Manager.                                                                                                                                                                                                                           |
| VCBConferenceActive         | This counter represents the total number of active video conferences on all video conference bridge devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                                      |
| VCBConferenceAvailable      | This counter represents the total number of new video conferences on all video conference bridge devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                                         |
| VCBConferenceCompleted      | This counter represents the total number of video conferences that used a video conference bridge that is allocated from Unified Communications Manager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge. |
| VCBConferenceTotal          | This counter represents the total number of video conferences that are supported on all video conference bridge devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                          |
| VCBOutOfConferences         | This counter represents the total number of times that Unified Communications Manager attempted to allocate a video conference resource from those that are registered to Unified Communications Manager when none was available.                                                                                                                                                                         |
| VCBOutOfResources           | This counter represents the total number of failed new video conference requests. A conference request can fail because, for example, the configured number of conferences is already in use.                                                                                                                                                                                                             |
| VCBResourceActive           | This counter represents the total number of video conference resources that are currently in use on all video conference devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                 |

| Counters                | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VCBResourceAvailable    | This counter represents the total number of video conference resources that are not active and are currently available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| VCBResourceTotal        | This counter represents the total number of video conference resources that are provided by all video conference bridge devices that are currently registered with Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                     |
| VideoCallsActive        | This counter represents the number of active video calls with active video streaming connections on all video conference bridge devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                                                                                                                                                                                                       |
| VideoCallsCompleted     | This counter represents the number of video calls that were actually connected with video streams and then released.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| VideoOutOfResources     | This counter represents the total number of times that Unified Communications Manager attempted to allocate a video-streaming resource from one of the video conference bridge devices that is registered to Unified Communications Manager when none was available.                                                                                                                                                                                                                                                                                                                                   |
| XCODE_RequestsThrottled | This counter represents the total number of transcoder resource requests that have been denied due to throttling (a resource from this transcoder was not allocated because, as specified by the Cisco CallManager service parameter MTP and Transcoder Resource Throttling Percentage, the transcoder was being utilized beyond the configured throttle percentage). This counter increments each time a resource is requested from this transcoder and is denied due to throttling. This counter reflects a running total since the transcoder device registered with the Cisco CallManager Service. |

## Cisco CallManager System Performance

The CiscoCallManager System Performance object provides system performance information about Unified Communications Manager. The following table contains information about CiscoCallManager system performance counters.

*Table 44: CiscoCallManager System Performance*

| Counters             | Counter Description                                                                                  |
|----------------------|------------------------------------------------------------------------------------------------------|
| AverageExpectedDelay | This counter represents the current average expected delay before any incoming message gets handled. |

| Counters                        | Counter Description                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsRejectedDueToICTThrottling | This counter represents the total number of calls that were rejected since the start of CiscoCallManager service due to Intercluster Trunk (ICT) call throttling. When the threshold limit of 140 calls per 5 seconds is met, the ICT will start throttling (rejecting) new calls. One cause for ICT call throttling occurs when calls across an ICT enter a route loop condition. |
| CallThrottlingGenericCounter3   | This counter represents a generic counter that is used for call-throttling purpose.                                                                                                                                                                                                                                                                                                |
| CodeRedEntryExit                | This counter indicates whether Unified Communications Manager has entered or exited a Code state (call-throttling mode). Valid values include 0 (Exit) and 1 (Entry).                                                                                                                                                                                                              |
| CodeYellowEntryExit             | This counter indicates whether Unified Communications Manager has entered or exited a Code Yellow state (call-throttling mode). Valid values include 0 (Exit) and 1 (Entry).                                                                                                                                                                                                       |
| EngineeringCounter1             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter2             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter3             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter4             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter5             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter6             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |
| EngineeringCounter7             | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                      |

| Counters                     | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EngineeringCounter8          | Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| QueueSignalsPresent 1-High   | This counter indicates the number of high-priority signals in the Unified Communications Manager queue. High-priority signals include timeout events, internal Unified Communications Manager keepalives, certain gatekeeper events, and internal process creation, among other events. A large number of high-priority events will cause degraded performance on Unified Communications Manager and result in slow call connection or loss of dial tone. Use this counter in conjunction with the QueueSignalsProcessed 1-High counter to determine the processing delay on Unified Communications Manager.                                                                                                                                                                                            |
| QueueSignalsPresent 2-Normal | This counter indicates the number of normal-priority signals in the Unified Communications Manager queue. Normal-priority signals include call-processing functions, key presses, on-hook and off-hook notifications, among other events. A large number of normal-priority events will cause degraded performance on Unified Communications Manager, sometimes resulting in delayed dial tone, slow call connection, or loss of dial tone. Use this counter in conjunction with the QueueSignalsProcessed 2-Normal counter to determine the call-processing delay on Unified Communications Manager. Remember that high-priority signals must complete before normal-priority signals begin to process, so check the high-priority counters as well to get an accurate picture of the potential delay. |
| QueueSignalsPresent 3-Low    | This counter indicates the number of low-priority signals in the Unified Communications Manager queue. Low-priority signals include station device registration (except the initial station registration request message), among other events. A large number of signals in this queue could result in delayed device registration, among other events.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| QueueSignalsPresent 4-Lowest | This counter indicates the number of lowest priority signals in the Unified Communications Manager queue. Lowest priority signals include the initial station registration request message during device registration, among other events. A large number of signals in this queue could result in delayed device registration, among other events.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Counters                       | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| QueueSignalsProcessed 1-High   | This counter indicates the number of high-priority signals that Unified Communications Manager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 1-High counter to determine the processing delay on this queue.                                                                                                                                                                           |
| QueueSignalsProcessed 2-Normal | This counter indicates the number of normal-priority signals that Unified Communications Manager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 2-Normal counter to determine the processing delay on this queue. Remember that high-priority signals get processed before normal-priority signals.                                                                                     |
| QueueSignalsProcessed 3-Low    | This counter indicates the number of low-priority signals that Unified Communications Manager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 3-Low counter to determine the processing delay on this queue. The number of signals processed gives an indication of how much device registration activity is being processed in this time interval.                                      |
| QueueSignalsProcessed 4-Lowest | This counter indicates the number of lowest priority signals that Unified Communications Manager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 4-Lowest counter to determine the processing delay on this queue. The number of signals that are processed gives an indication of how many devices began the Unified Communications Manager registration process in this time interval. |
| QueueSignalsProcessed Total    | This counter provides a sum total of all queue signals that Unified Communications Manager processes for each 1-second period for all queue levels: high, normal, low, and lowest.                                                                                                                                                                                                                                                          |
| SkinnyDevicesThrottled         | This counter represents the total number of Skinny devices that are being throttled. A Skinny device gets throttled (asked to shut down and reregister) when the total number of events that the Skinny device generated exceeds the configured maximum threshold value (default value specifies 2000 events) within a 5-second interval.                                                                                                   |

| Counters                 | Counter Description                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ThrottlingSampleActivity | This counter indicates how many samples, out of the configured sample size, have non-zero averageExpectedDelay values. This counter resets when any sample has an averageExpectedDelay value of zero. This process repeats for each batch of samples. A batch represents the configured sample size. |
| TotalCodeYellowEntry     | This counter indicates the number of times that Unified Communications Manager call processing enters the code yellow state. This counter remains cumulative from the start of the Unified Communications Manager process.                                                                           |

## Cisco CTIManager

The Cisco CTI Manager object provides information about Cisco CTI Manager. The following table contains information about CiscoCTIManager counters.

**Table 45: Cisco CTI Manager**

| Counters            | Counter Description                                                                                                                                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CcmLinkActive       | This counter represents the total number of active Unified Communications Manager links. CTI Manager maintains links to all active servers in a cluster, if applicable.                                                                                                                                                              |
| CTIConnectionActive | This counter represents the total number of CTI clients that are currently connected to the CTIManager. This counter increases by one when new connection is established and decreases by one when a connection is released. The CTIManager service parameter MaxCTIConnections determines the maximum number of active connections. |
| DevicesOpen         | This counter represents the total number of devices that are configured in Unified Communications Manager that CTI applications control and/or monitor. Devices include hardware IP phones, CTI ports, CTI route points, and so on.                                                                                                  |
| LinesOpen           | This counter represents the total number of lines that are configured in Unified Communications Manager that control and/or monitor CTI applications.                                                                                                                                                                                |
| QbeVersion          | This counter represents the version number of the Quick Buffer Encoding (QBE) interface that the CTIManager uses.                                                                                                                                                                                                                    |

## Cisco Dual-Mode Mobility

The Cisco Dual-Mode Mobility object provides information about the dual-mode mobility application on Unified Communications Manager. The following table contains information about CiscoDual-Mode Mobility counters.

**Table 46: Cisco Dual-Mode Mobility**

| Counters           | Counter Description                                                                                                                                                                                                                                                                                                   |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsAnchored      | This counter represents the number of calls that are placed or received on dual-mode phones that are anchored in Unified Communications Manager. The counter increments when a call is received from or placed to a dual-mode phone. The counter increments twice if a dual-mode phone calls another dual-mode phone. |
| DMMSRegistered     | This counter represents the number of Dual-mode Mobile Station (DMMS) subscribers that are registered in the wireless LAN (WLAN).                                                                                                                                                                                     |
| FollowMeAborted    | This counter represents the number of failed follow-me operations.                                                                                                                                                                                                                                                    |
| FollowMeAttempted  | This counter represents the number of follow-me operations that Unified Communications Manager attempted. The counter increments when a SIP 302 - Moved Temporarily message is received from the Wireless Service Manager (WSM) and Unified Communications Manager redirects the call to the DMMS in WLAN.            |
| FollowMeCompleted  | This counter represents the number of follow-me operations that were successfully completed. The counter increments when the DMMS in WLAN answers the call and the media (voice path) is successfully established with the calling device.                                                                            |
| FollowMeInProgress | This counter represents the number of follow-me operations that are currently in progress. The counter increments when a follow-me is attempted, and it decrements when the follow-me operation is aborted or completed.                                                                                              |
| H1HandOutAttempted | This counter represents the number of H1 hand-out operations that dual-mode phones attempt. The counter increments when Unified Communications Manager processes a call to the H1 number from a DMMS.                                                                                                                 |

| Counters            | Counter Description                                                                                                                                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| H1HandOutCompleted  | This counter represents the number of successfully completed H1 hand-out operations. The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).                                             |
| H2HandOutCompleted  | This counter represents the number of successfully completed H2 hand-out operations. The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).                                             |
| H2HandOutsAttempted | This counter represents the number of H2 hand-out operations that dual-mode phones attempt. The counter increments when Unified Communications Manager receives a call to the H2 number from a DMMS.                           |
| HandInAborted       | This counter represents the number of hand-in operations that failed.                                                                                                                                                          |
| HandInAttempted     | This counter represents the number of hand-in operations that dual-mode phones attempt.                                                                                                                                        |
| HandInCompleted     | This counter represents the number of successfully completed hand-in operations. The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).                                                 |
| HandInInProgress    | This counter represents the number of hand-in operations that are currently in progress. The counter increments when a hand-in is attempted, and the counter decrements when the hand-in is aborted or completed.              |
| HandOutAborted      | This counter represents the number of hand-out operations that failed.                                                                                                                                                         |
| HandOutInProgress   | This counter represents the number of H1 and H2 hand-out operations that are currently in progress. The counter increments when a H1 or H2 hand-out is attempted, and it decrements when the hand-out is aborted or completed. |

## Cisco Extension Mobility

The Cisco Extension Mobility object provides information about the extension mobility application. The following table contains information about Cisco Extension Mobility counters.

**Table 47: Cisco Extension Mobility Application**

| Counters                            | Counter Description                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RequestsHandled                     | This counter represents the total number of HTTP requests that the extension mobility application handled since the last restart of the CiscoCallManager service. A typical login would constitute two HTTP requests: one to query the initial login state of the device and another to log in the user on a device. Similarly, a typical logout also results in two HTTP requests. |
| RequestsInProgress                  | This counter represents the number of HTTP requests that the extension mobility application currently is handling. A typical login would constitute two HTTP requests: one to query the initial login state of the device and another to log in the user on a device. Similarly, a typical logout also results in two HTTP requests.                                                |
| RequestsThrottled                   | This counter represents the total number of Login/Logout Requests that failed due to throttling.                                                                                                                                                                                                                                                                                    |
| LoginsSuccessful                    | This counter represents the total number of successful login requests that were completed through EM Service.                                                                                                                                                                                                                                                                       |
| LogoutsSuccessful                   | This counter represents the total number of successful logout requests that were completed through EM Service                                                                                                                                                                                                                                                                       |
| Total Login/LogoutRequestsAttempted | This counter represents the total number of Login and Logout requests that were attempted through this EM Service. This number includes both successful and unsuccessful attempts.                                                                                                                                                                                                  |

## Cisco Gatekeeper

The Cisco Gatekeeper object provides information about registered Cisco gatekeeper devices. The following table contains information about Ciscogatekeeper device counters.

**Table 48: Cisco Gatekeeper**

| Counters     | Counter Description                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACFsReceived | This counter represents the total number of RAS Admission Confirm messages that are received from the configured gatekeeper and its alternate gatekeepers. |

| Counters            | Counter Description                                                                                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARQsAttempted       | This counter represents the total number of RAS Admission Request messages that are attempted by using the configured gatekeeper and its alternate gatekeepers.                |
| RasRetries          | This counter represents the number of retries due to loss or delay of all RAS acknowledgement messages on the configured gatekeeper and its alternate gatekeepers.             |
| VideoOutOfResources | This counter represents the total number of video-stream requests to the configured gatekeeper or its alternate gatekeepers that failed, most likely due to lack of bandwidth. |

## Cisco H.323

The Cisco H.323 object provides information about registered Cisco H.323 devices. The following table contains information about Cisco H.323 device counters.

**Table 49: Cisco H.323**

| Counters                            | Counter Description                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsActive                         | This counter represents the number of streaming connections that are currently active (in use) on the configured H.323 device; in other words, the number of calls that actually have a voice path that is connected.                                                                                                                                                              |
| CallsAttempted                      | This counter represents the total number of calls that have been attempted on a device, including both successful and unsuccessful call attempts.                                                                                                                                                                                                                                  |
| CallsCompleted                      | This counter represents the total number of successful calls that were made from a device.                                                                                                                                                                                                                                                                                         |
| CallsInProgress                     | This counter represents the number of calls that are currently in progress on a device.                                                                                                                                                                                                                                                                                            |
| CallsRejectedDueToICTCallThrottling | This counter represents the total number of calls rejected due to Intercluster Trunk (ICT) call throttling since the start of the CiscoCallManager service. When the system reaches a threshold limit of 140 calls per 5 seconds, ICT will start throttling (rejecting) new calls. One cause for ICT call throttling occurs when calls across an ICT enter a route loop condition. |

| Counters            | Counter Description                                                                                                                                                                                                                                                                                                          |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VideoCallsActive    | This counter represents the number of video calls with video streaming connections that are currently active (in use) on all H.323 trunks that are registered with a Unified Communications Manager; in other words, the number of calls that actually have video-streaming connections on a Unified Communications Manager. |
| VideoCallsCompleted | This counter represents the number of video calls that were actually connected with video streams for all H.323 trunks that were registered with a Unified Communications Manager. This number increases when the call terminates.                                                                                           |

## Cisco Hunt Lists

The Cisco Hunt Lists object provides information about the hunt lists that are defined in Cisco Unified Communications Manager Administration. The following table contains information about Cisco hunt list counters.

**Table 50: Cisco Hunt Lists**

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsAbandoned    | This counter represents the number of abandoned calls that occurred through a hunt list. An abandoned call represents one in which a caller hangs up before the call is answered.                                                                                                                                                                                                  |
| CallsActive       | This counter represents the number of calls that are currently active (in use) that occurred through a hunt list. An active call represents one that gets distributed and answered, and to which a voice path connects.                                                                                                                                                            |
| CallsBusyAttempts | This counter represents the number of times that calls through a hunt list were attempted when all members of the line and/or route groups were busy.                                                                                                                                                                                                                              |
| CallsInProgress   | This counter represents the number of calls that are currently in progress through a hunt list. A call in progress represents one that the call distributor is attempting to extend to a member of a line or route group and that has not yet been answered. Examples of a hunt list member include a line, a station device, a trunk device, or a port/channel of a trunk device. |
| CallsRingNoAnswer | This counter represents the total number of calls through a hunt list that rang but that called parties did not answer.                                                                                                                                                                                                                                                            |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HuntListInService | This counter specifies whether the particular hunt list is currently in service. A value of 0 indicates that the hunt list is out of service; a value of 1 indicates that the hunt list is in service. Reasons that a hunt list could be out of service include the hunt list is not running on a primary Unified Communications Manager based on its Unified Communications Manager Group or the hunt list has been disabled in Cisco Unified Communications Manager Administration.                                                                                               |
| MembersAvailable  | This counter represents the total number of available or idle members of line and route groups that belong to an in-service hunt list. An available member currently handles a call and will accept a new call. An idle member does not handle any call and will accept a new call. A hunt list member can comprise a route group, line group, or a combination. A member of a line group represents a directory number of a line on an IP phone or a voice-mail port. A member of a route group represents a station gateway, a trunk gateway, or port/channel of a trunk gateway. |

## Cisco HW Conference Bridge Device

The Cisco HW Conference Bridge Device object provides information about registered Cisco hardware conference bridge devices. The following table contains information about Cisco hardware conference bridge device counters.

**Table 51: Cisco HW Conference Bridge Device**

| Counters              | Counter Description                                                                                                                                                                                                                                               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HWConferenceActive    | This counter represents the number of conferences that are currently active (in use) on a HW conference bridge device. One resource represents one stream.                                                                                                        |
| HWConferenceCompleted | This counter represents the total number of conferences that have been allocated and released on a HW conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge. |
| OutOfResources        | This counter represents the total number of times that an attempt was made to allocate a conference resource from a HW conference device and failed, for example, because all resources were already in use.                                                      |

| Counters          | Counter Description                                                                                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResourceActive    | This counter represents the number of resources that are currently in use (active) for this HW conference device. One resource represents one stream.                                                          |
| ResourceAvailable | This counter represents the total number of resources that are not active and are still available to be used now for a HW conference device. One resource represents one stream.                               |
| ResourceTotal     | This counter represents the total number of resources for a HW conference bridge device. This counter equals the sum of the counters ResourceAvailable and ResourceActive. One resource represents one stream. |

## Cisco IP Manager Assistant

The Cisco IP Manager Assistant (IPMA) Service object provides information about the Cisco Unified Communications Manager Assistant application. The following table contains information on Cisco IPMA counters.

**Table 52: Cisco IP Manager Assistant Service**

| Counters         | Counter Description                                                                                                                                                                                                                                                                                 |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AssistantsActive | This counter represents the number of assistant consoles that are currently active. An active assistant console exists when an assistant is logged in from the assistant console desktop application.                                                                                               |
| LinesOpen        | This counter represents the number of phone lines that the Cisco Unified Communications Manager Assistant application opened. An open phone line exists when the application assumes line control from CTI.                                                                                         |
| ManagersActive   | This counter represents the current number of managers that the Cisco IPMA is servicing.                                                                                                                                                                                                            |
| SessionsCurrent  | This counter represents the total number of managers assistants that are currently using the Cisco Unified Communications Manager Assistant application. Each manager and each assistant constitute an active session; so, for one manager/assistant pair, this counter would reflect two sessions. |

## Cisco LBM service

The Cisco LBM service object provides information about LBM service that is defined in Unified Communications Manager. The following table contains information on Cisco LBM service counters.

*Table 53: Cisco LBM service*

| Counters                        | Counter Description                                                                                                               |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Is Hub[1] or Spoke[0]           | This counter represents the state of Location Bandwidth Manager. Spoke state is represented by 0 and hub state with a value of 1. |
| LocalHubNodesConnected          | This counter represents the number of local hub nodes connected.                                                                  |
| LocalSpokesNodesConnected       | This counter represents the number of local spoke nodes connected.                                                                |
| RemoteHubNodesConnectedInsecure | This counter represents the number of insecure remote hub nodes connected.                                                        |
| RemoteHubNodesConnectedSecure   | This counter represents the number of secure remote hub nodes connected.                                                          |

## Cisco Lines

The Cisco Lines object represents the number of Cisco lines (directory numbers) that can dial and connect to a device. Lines represent all directory numbers that terminate on an endpoint. The directory number that is assigned to it identifies the line. The Cisco Lines object does not include directory numbers that include wildcards such as a pattern for a Digital or Analog Access gateway.

The Active counter represents the state of the line, either active or not active. A zero indicates that the line is not in use. When the number is greater than zero, this indicates that the line is active, and the number represents the number of calls that are currently in progress on that line. If more than one call is active, this indicates that the call is on hold either because of being placed on hold specifically (user hold) or because of a network hold operation (for example, a transfer is in progress, and it is on transfer hold). This applies to all directory numbers that are assigned to any device.

## Cisco Locations LBM

The Cisco Location LBM object provides information about locations that are defined in Unified Communications Manager clusters. The following table contains information on Cisco location counters.

*Table 54: Cisco Locations LBM*

| Counters           | Counter Description                                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BandwidthAvailable | This counter represents the current audio bandwidth in a location or a link between two locations. A value of 0 indicates that no audio bandwidth is available. |

| Counters                                | Counter Description                                                                                                                                                                         |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BandwidthMaximum                        | This counter represents the maximum audio bandwidth that is available in a location or a link between two locations. A value of 0 indicates that no audio bandwidth is available.           |
| BandwidthOversubscription               | This represents the current oversubscribed audio bandwidth in a location or link between two locations. A value of zero indicates no bandwidth oversubscription.                            |
| CallsInProgress                         | This counter represents the number of calls that are currently in progress on a particular Cisco Location Bandwidth Manager.                                                                |
| ImmersiveOutOfResources                 | This represents the total number of failed immersive video call bandwidth reservations associated with a location or a link between two locations due to lack of immersive video bandwidth. |
| ImmersiveVideoBandwidthAvailable        | This counter represents the maximum bandwidth that is available for video in a location or a link between two locations. A value of 0 indicates that no bandwidth is allocated for video.   |
| ImmersiveVideoBandwidthMaximum          | This counter represents the bandwidth that is currently available for video in a location or a link between two locations. A value of 0 indicates that no bandwidth is available.           |
| ImmersiveVideoBandwidthOversubscription | This represents the current immersive video oversubscribed bandwidth in a location or link between two locations. A value of zero indicates no bandwidth oversubscription.                  |
| OutOfResources                          | This counter represents the total number of failed audio call bandwidth reservations associated with a given location or a link between two locations due to lack of audio bandwidth.       |
| VideoBandwidthAvailable                 | This counter represents the bandwidth that is currently available for video in a location or a link between two locations. A value of 0 indicates that no bandwidth is available.           |
| VideoBandwidthMaximum                   | This counter represents the maximum bandwidth that is available for video in a location and a link between two locations. A value of 0 indicates that no bandwidth is allocated for video.  |

| Counters              | Counter Description                                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VideoOversubscription | This represents the current video oversubscribed bandwidth amount in a location and a link between two locations. A value of zero indicates no bandwidth oversubscription.            |
| VideoOutOfResources   | This counter represents the total number of failed video call bandwidth reservations associated with a given location or a link between two locations due to lack of video bandwidth. |

## Cisco Locations RSVP

The Cisco Location RSVP object provides information about RSVP that is defined in Unified Communications Manager. The following table contains information on Cisco location RSVP counters.

**Table 55: Cisco Locations RSVP**

| Counters                            | Counter Description                                                                              |
|-------------------------------------|--------------------------------------------------------------------------------------------------|
| RSVP AudioReservationErrorCounts    | This counter represents the number of RSVP reservation errors in the audio stream.               |
| RSVP MandatoryConnectionsInProgress | This counter represents the number of connections with mandatory RSVP that are in progress.      |
| RSVP OptionalConnectionsInProgress  | This counter represents the number of connections with optional RSVP that are in progress.       |
| RSVP TotalCallsFailed               | This counter represents the number of total calls that failed due to a RSVP reservation failure. |
| RSVP VideoCallsFailed               | This counter represents the number of video calls that failed due to a RSVP reservation failure. |
| RSVP VideoReservationErrorCounts    | This counter represents the number of RSVP reservation errors in the video stream                |

## Cisco Media Streaming Application

The Cisco IP Voice Media Streaming Application object provides information about the registered MTPs, MOH servers, conference bridge servers, and annunciators. The following table contains information on Cisco IP Voice Media Streaming Application counters.



**Note** One object exists for each Unified Communications Manager in the Unified Communications Manager group that is associated with the device pool that the annunciator device is configured to use.

Table 56: Cisco Media Streaming Application

| Counter              | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANNConnectionsLost   | This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Unified Communications Manager connection was lost.                                                                                                                                                                                                                                                                                                                                       |
| ANNConnectionState   | For each Unified Communications Manager that is associated with an annunciator, this counter represents the current registration state to Unified Communications Manager; 0 indicates no registration to Unified Communications Manager; 1 indicates registration to the primary Unified Communications Manager; 2 indicates connection to the secondary Unified Communications Manager (connected to Unified Communications Manager but not registered until the primary Unified Communications Manager connection fails). |
| ANNConnectionsTotal  | This counter represents the total number of annunciator instances that have been started since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                                                                                                                                                                                                              |
| ANNInstancesActive   | This counter represents the number of actively playing (currently in use) announcements.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ANNStreamsActive     | This counter represents the total number of currently active simplex (one direction) streams for all connections. Each stream direction counts as one stream. One internal stream provides the audio input and another output stream to the endpoint device.                                                                                                                                                                                                                                                                |
| ANNStreamsAvailable  | This counter represents the remaining number of streams that are allocated for the annunciator device that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for the Annunciator, Call Count) and is reduced by one for each active stream that started.                                                                                                                                              |
| ANNStreamsTotal      | This counter represents the total number of simplex (one direction) streams that connected to the annunciator device since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                                                                                                                                                                                  |
| CFBConferencesActive | This counter represents the number of active (currently in use) conferences.                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Counter             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFBConferencesTotal | This counter represents the total number of conferences that started since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                                                                                                                                                                                                                                          |
| CFBConnectionsLost  | This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Unified Communications Manager connection was lost.                                                                                                                                                                                                                                                                                                                                               |
| CFBConnectionState  | For each Unified Communications Manager that is associated with a SW Conference Bridge, this counter represents the current registration state to Unified Communications Manager; 0 indicates no registration to Unified Communications Manager; 1 indicates registration to the primary Unified Communications Manager; 2 indicates connection to the secondary Unified Communications Manager (connected to Unified Communications Manager but not registered until the primary Unified Communications Manager connection fails). |
| CFBStreamsActive    | This counter represents the total number of currently active simplex (one direction) streams for all conferences. Each stream direction counts as one stream. In a three-party conference, the number of active streams equals 6.                                                                                                                                                                                                                                                                                                   |
| CFBStreamsAvailable | This counter represents the remaining number of streams that are allocated for the conference bridge that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for Conference Bridge, Call Count) and is reduced by one for each active stream started.                                                                                                                                                          |
| CFBStreamsTotal     | This counter represents the total number of simplex (one direction) streams that connected to the conference bridge since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                                                                                                                                                                                           |

| Counter               | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOHAudioSourcesActive | <p>This counter represents the number of active (currently in use) audio sources for this MOH server. Some of these audio sources may not be actively streaming audio data if no devices are listening. The exception exists for multicast audio sources, which will always be streaming audio.</p> <p>When an audio source is in use, even after the listener has disconnected, this counter will always have one input stream for each configured MOH codec. For unicast streams, the stream may exist in a suspended state where no audio data is received until a device connects to listen to the stream. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, then two streams get used (default audio source + G.711 mu-law and default audio source + wideband).</p> |
| MOHConnectionsLost    | <p>This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Unified Communications Manager connection was lost.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| MOHConnectionState    | <p>For each Unified Communications Manager that is associated with an MOH, this counter represents the current registration state to Unified Communications Manager; 0 indicates no registration to Unified Communications Manager; 1 indicates registration to the primary Unified Communications Manager; 2 indicates connection to the secondary Unified Communications Manager (connected to Unified Communications Manager but not registered until the primary Unified Communications Manager connection fails).</p>                                                                                                                                                                                                                                                                                                                                                                                               |

| Counter             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOHStreamsActive    | <p>This counter represents the total number of active (currently in use) simplex (one direction) streams for all connections. One output stream exists for each device that is listening to a unicast audio source, and one input stream exists for each active audio source, multiplied by the number of MOH codecs.</p> <p>When an audio source has been used once, it will always have one input stream for each configured MOH codec. For unicast streams, the stream may exist in a suspended state where no audio data is received until a device connects to listen to the stream. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, then two streams get used (default audio source + G.711 mu-law and default audio source + wideband).</p> |
| MOHStreamsAvailable | <p>This counter represents the remaining number of streams that are allocated for the MOH device that are available for use. This counter starts as 408 plus the number of configured half-duplex unicast connections and is reduced by 1 for each active stream that started. The counter gets reduced by 2 for each multicast audio source, multiplied by the number of MOH codecs that are configured. The counter gets reduced by 1 for each unicast audio source, multiplied by the number of MOH codecs configured.</p>                                                                                                                                                                                                                                                                                                                                                                       |
| MOHStreamsTotal     | <p>This counter represents the total number of simplex (one direction) streams that have connected to the MOH server since the Cisco IP Voice Media Streaming Application service started.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MTPConnectionsLost  | <p>This counter represents the total number of times since the last restart of the Cisco IP Voice Streaming Application that a Unified Communications Manager connection was lost.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MTPConnectionState  | <p>For each Unified Communications Manager that is associated with an MTP, this counter represents the current registration state to Unified Communications Manager; 0 indicates no registration to Unified Communications Manager; 1 indicates registration to the primary Unified Communications Manager; 2 indicates connection to the secondary Unified Communications Manager (connected to Unified Communications Manager but not registered until the primary Unified Communications Manager connection fails).</p>                                                                                                                                                                                                                                                                                                                                                                          |

| Counter             | Counter Description                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MTPConnectionsTotal | This counter represents the total number of MTP instances that have been started since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                                                |
| MTPInstancesActive  | This counter represents the number of active (currently in use) instances of MTP.                                                                                                                                                                                                                                                                     |
| MTPStreamsActive    | This counter represents the total number of currently active simplex (one direction) streams for all connections. Each stream direction counts as one stream.                                                                                                                                                                                         |
| MTPStreamsAvailable | This counter represents the remaining number of streams that are allocated for the MTP device that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for MTP, Call Count) and is reduced by one for each active stream started. |
| MTPStreamsTotal     | This counter represents the total number of simplex (one direction) streams that connected to the MTP device since the Cisco IP Voice Media Streaming Application service started.                                                                                                                                                                    |

## Cisco Messaging Interface

The Cisco Messaging Interface object provides information about the Cisco Messaging Interface (CMI) service. The following table contains information on Cisco Messaging Interface (CMI) counters.

**Table 57: Cisco Messaging Interface**

| Counters                      | Counter Description                                                                                                                                                                                     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HeartBeat                     | This counter represents the heartbeat of the CMI service. This incremental count indicates that the CMI service is up and running. If the count does not increase (increment), the CMI service is down. |
| SMDIMessageCountInbound       | This counter represents the running count of inbound SMDI messages since the last restart of the CMI service.                                                                                           |
| SMDIMessageCountInbound24Hour | This counter represents the rolling count of inbound SMDI messages in the last 24 hours.                                                                                                                |
| SMDIMessageCountOutbound      | This counter represents the running count of outbound SMDI messages since the last restart of the CMI service.                                                                                          |

| Counters                       | Counter Description                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SMDIMessageCountOutbound24Hour | This counter represents the rolling count of outbound SMDI messages in the last 24 hours.                                                                                                                                                                                                                                                                        |
| StartTime                      | This counter represents the time in milliseconds when the CMI service started. The real-time clock in the computer, which simply acts as a reference point that indicates the current time and the time that has elapsed, in milliseconds, since the service started, provides the basis for this time. The reference point specifies midnight, January 1, 1970. |

## Cisco MGCP BRI Device

The Cisco Media Gateway Control Protocol (MGCP) Foreign Exchange Office (FXO) Device object provides information about registered Cisco MGCP BRI devices. The following table contains information on CiscoMGCP BRI device counters.

**Table 58: Cisco MGCP BRI Device**

| Counters         | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsCompleted   | This counter represents the total number of successful calls that were made from this MGCP Basic Rate Interface (BRI) device                                                                                                                                                                                                                                                                                                                                                                                                            |
| Channel 1 Status | This counter represents the status of the indicated B-Channel that is associated with the MGCP BRI device. Possible values: 0 (Unknown) indicates the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates an active call on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-channel or for use as a Synch-Channel for BRI. |
| Channel 2 Status | This counter represents the status of the indicated B-Channel that is associated with the MGCP BRI device. Possible values: 0 (Unknown) indicates the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates an active call on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-channel or for use as a Synch-Channel for BRI. |

| Counters             | Counter Description                                                                                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DatalinkInService    | This counter represents the state of the Data Link (D-Channel) on the corresponding digital access gateway. This value will get set to 1 (one) if the Data Link is up (in service) or 0 (zero) if the Data Link is down (out of service). |
| OutboundBusyAttempts | This counter represents the total number of times that a call through this MGCP BRI device was attempted when no voice channels are available.                                                                                            |

## Cisco MGCP FXO Device

The Cisco Media Gateway Control Protocol (MGCP) Foreign Exchange Office (FXO) Device object provides information about registered Cisco MGCP FXO devices. The following table contains information on CiscoMGCP FXO device counters.

**Table 59: Cisco MGCP FXO Device**

| Counters             | Counter Description                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsCompleted       | This counter represents the total number of successful calls that were made from the port on an MGCP FXO device.                                            |
| OutboundBusyAttempts | This counter represents the total number of times that a call through the port on this MGCP FXO device was attempted when no voice channels were available. |
| PortStatus           | This counter represents the status of the FXO port associated with this MGCP FXO device.                                                                    |

## Cisco MGCP FXS Device

The Cisco MGCP Foreign Exchange Station (FXS) Device object provides information about registered Cisco MGCP FXS devices. One instance of this object gets created for each port on a Cisco Catalyst 6000 24 port FXS Analog Interface Module gateway. For example, a fully configured Catalyst 6000 Analog Interface Module would represent 24 separate instances of this object. The following table contains information on CiscoMGCP FXS device counters.

**Table 60: Cisco MGCP FXS Device**

| Counters       | Counter Description                                                                                                |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| CallsCompleted | This counter represents the total number of successful calls that were made from this port on the MGCP FXS device. |

| Counters             | Counter Description                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutboundBusyAttempts | This counter represents the total number of times that a call through this port on the MGCP FXS device was attempted when no voice channels were available. |
| PortStatus           | This counter represents the status of the FXS port that is associated with a MGCP FXS device.                                                               |

## Cisco MGCP Gateways

The Cisco MGCP Gateways object provides information about registered MGCP gateways. The following table contains information on CiscoMGCP gateway counters.

**Table 61: Cisco MGCP Gateways**

| Counters          | Counter Description                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------|
| BRChannelsActive  | This counter represents the number of BRI voice channels that are currently active in a call in the gateway.    |
| BRISpansInService | This counter represents the number of BRI spans that are currently available for use in the gateway.            |
| FXOPortsActive    | This counter represents the number of FXO ports that are currently active in a call in the gateway.             |
| FXOPortsInService | This counter represents the number of FXO ports that are currently available for use in the gateway.            |
| FXSPortsActive    | This counter represents the number of FXS ports that are currently active in a call in the gateway.             |
| FXSPortsInService | This counter represents the number of FXS ports that are currently available for use in the gateway.            |
| PRChannelsActive  | This counter represents the number of PRI voice channels that are currently active in a call in the gateway.    |
| PRISpansInService | This counter represents the number of PRI spans that are currently available for use in the gateway.            |
| T1ChannelsActive  | This counter represents the number of T1 CAS voice channels that are currently active in a call in the gateway. |
| T1SpansInService  | This counter represents the number of T1 CAS spans that are currently available for use in the gateway.         |

## Cisco MGCP PRI Device

The Cisco MGCP Primary Rate Interface (PRI) Device object provides information about registered Cisco MGCP PRI devices. The following table contains information on CiscoMGCP PRI device counters.

**Table 62: Cisco MGCP PRI Device**

| Counters                                                             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsActive                                                          | This counter represents the number of calls that are currently active (in use) on this MGCP PRI device.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CallsCompleted                                                       | This counter represents the total number of successful calls that were made from this MGCP PRI device.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Channel 1 Status through Channel 15 Status (consecutively numbered)  | This counter represents the status of the indicated B-Channel that is associated with a MGCP PRI device. Possible values: 0 (Unknown) indicates that the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates that an active call exists on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-Channel or for use as a Synch-Channel for E-1. |
| Channel 16 Status                                                    | This counter represents the status of the indicated B-Channel that is associated with a MGCP PRI Device. Possible values: 0-Unknown, 1-Out of service, 2-Idle, 3-Busy, 4-Reserved, for an E1 PRI Interface, this channel is reserved for use as a D-Channel.                                                                                                                                                                                                                                                                                           |
| Channel 17 Status through Channel 31 Status (consecutively numbered) | This counter represents the status of the indicated B-Channel that is associated with the MGCP PRI Device. 0-Unknown, 1-Out of service, 2-Idle, 3-Busy, 4-Reserved.                                                                                                                                                                                                                                                                                                                                                                                    |
| DatalinkInService                                                    | This counter represents the state of the Data Link (D-Channel) on the corresponding digital access gateway. This value will be set to 1 (one) if the Data Link is up (in service) or 0 (zero) if the Data Link is down (out of service).                                                                                                                                                                                                                                                                                                               |
| OutboundBusyAttempts                                                 | This counter represents the total number of times that a call through an MGCP PRI device was attempted when no voice channels were available.                                                                                                                                                                                                                                                                                                                                                                                                          |

## Cisco MGCP T1 CAS Device

The Cisco MGCP T1 Channel Associated Signaling (CAS) Device object provides information about registered Cisco MGCP T1 CAS devices. The following table contains information on CiscoMGCP T1 CAS device counters.

*Table 63: Cisco MGCP T1 CAS Device*

| Counters                                                            | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsActive                                                         | This counter represents the number of calls that are currently active (in use) on this MGCP T1 CAS device.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CallsCompleted                                                      | This counter represents the total number of successful calls that were made from this MGCP T1 CAS device.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Channel 1 Status through Channel 24 Status (consecutively numbered) | This counter represents the status of the indicated B-Channel that is associated with an MGCP T1 CAS device. Possible values: 0 (Unknown) indicates the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates that an active call exists on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-Channel or for use as a Synch-Channel for E-1. |
| OutboundBusyAttempts                                                | This counter represents the total number of times that a call through the MGCP T1 CAS device was attempted when no voice channels were available.                                                                                                                                                                                                                                                                                                                                                                                                     |

## Cisco Mobility Manager

The Cisco Mobility Manager object provides information on registered Cisco Unified Mobility Manager devices. The following table contains information on Cisco Unified Mobility Manager device counters.

Table 64: Cisco Mobility Manager

| Counters                                       | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MobileCallsAnchored                            | This counter represents the total number of paths that are associated with single-mode/dual-mode phone call that is currently anchored on a Unified Communications Manager. Call anchoring occurs when a call enters an enterprise gateway and connects to a mobility application that then uses redirection to send the call back out an enterprise gateway. For example, this counter increments twice for a dual-mode phone-to-dual-mode phone call: once for the originating call and once for the terminating call. When the call terminates, this counter decrements accordingly. |
| MobilityHandinsAborted                         | This counter represents the total number of aborted handins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| MobileHandinsCompleted                         | This counter represents the total number of handins that were completed by dual-mode phones. A completed handin occurs when the call successfully connects in the enterprise network and the phone moves from WAN to WLAN.                                                                                                                                                                                                                                                                                                                                                              |
| MobilityHandinsFailed                          | This counter represents the total number of handins (calls on mobile devices that move from cellular to the wireless network) that failed.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| MobilityHandoutsAborted                        | This counter represents the total number of aborted handouts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| MobileHandoutsCompleted                        | This counter represents the total number of handouts (calls on mobile devices that move from the enterprise WLAN network to the cellular network) that were completed. A completed handout occurs when the call successfully connects.                                                                                                                                                                                                                                                                                                                                                  |
| MobileHandoutsFailed                           | This counter represents the total number of handouts (calls on mobile devices that move from cellular to the wireless network) that failed.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| MobilityFollowMeCallsAttempted                 | This counter represents the total number of follow-me calls that were attempted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| MobilityFollowMeCallsIgnoredDueToAnswerTooSoon | This counter represents the total number of follow-me calls that were ignored before the AnswerTooSoon timer went off.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| MobilityIVRCallsAttempted                      | This counter represents the total number of attempted IVR calls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Counters                       | Counter Description                                                                     |
|--------------------------------|-----------------------------------------------------------------------------------------|
| MobilityIVRCallsFailed         | This counter represents the total number of failed IVR calls.                           |
| MobilityIVRCallsSucceeded      | This counter represents the total number of successful IVR calls.                       |
| MobilitySCCPDualModeRegistered | This counter represents the total number of dual-mode SCCP devices that are registered. |
| MobilitySIPDualModeRegistered  | This counter represents the total number of dual-mode SIP devices that are registered.  |

## Cisco Music On Hold (MOH) Device

The Cisco Music On Hold (MOH) Device object provides information about registered Cisco MOH devices. The following table contains information on CiscoMOH device counters.

**Table 65: Cisco MOH Device**

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOHHighestActiveResources     | This counter represents the largest number of simultaneously active MOH connections for an MOH server. This number includes both multicast and unicast connections.                                                                                                                                                                                                                                                                                                                                                   |
| MOHMulticastResourceActive    | <p>This counter represents the number of currently active multicast connections to multicast addresses that are served by an MOH server.</p> <p>Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband).</p>                                                                  |
| MOHMulticastResourceAvailable | <p>This counter represents the number of multicast MOH connections to multicast addresses that are served by an MOH server that are not active and are still available to be used now for the MOH server.</p> <p>Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband).</p> |

| Counters                    | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MOHOutOfResources           | This counter represents the total number of times that the Media Resource Manager attempted to allocate an MOH resource when all available resources on all MOH servers that are registered with a Unified Communications Manager were already active.                                                                                                                                                                                                  |
| MOHTotalMulticastResources  | This counter represents the total number of multicast MOH connections that are allowed to multicast addresses that are served by an MOH server.<br><br>Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband). |
| MOHTotalUnicastResources    | This counter represents the total number of unicast MOH connections that are allowed by an MOH server.<br><br>Each MOH unicast resource uses one stream.                                                                                                                                                                                                                                                                                                |
| MOHUnicastResourceActive    | This counter represents the number of active unicast MOH connections to an MOH server.<br><br>Each MOH unicast resource uses one stream.                                                                                                                                                                                                                                                                                                                |
| MOHUnicastResourceAvailable | This counter represents the number of unicast MOH connections that are not active and are still available to be used now for an MOH server.<br><br>Each MOH unicast resource uses one stream.                                                                                                                                                                                                                                                           |

## Cisco MTP Device

The Cisco Media Termination Point (MTP) Device object provides information about registered Cisco MTP devices. The following table contains information on CiscoMTP device counters.

**Table 66: Cisco MTP Device**

| Counters       | Counter Description                                                                                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutOfResources | This counter represents the total number of times that an attempt was made to allocate an MTP resource from an MTP device and failed; for example, because all resources were already in use. |

| Counters          | Counter Description                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResourceActive    | This counter represents the number of MTP resources that are currently in use (active) for an MTP device.<br><br>Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.                               |
| ResourceAvailable | This counter represents the total number of MTP resources that are not active and are still available to be used now for an MTP device.<br><br>Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call. |
| ResourceTotal     | This counter represents the total number of MTP resources that an MTP device provides. This counter equals the sum of the counters ResourceAvailable and ResourceActive.                                                                                                |

## Cisco Phones

The Cisco Phones object provides information about the number of registered Cisco Unified IP Phones, including both hardware-based and other station devices.

The CallsAttempted counter represents the number of calls that have been attempted from this phone. This number increases each time that the phone goes off hook and on hook.

## Cisco Presence Feature

The Cisco Presence object provides information about presence subscriptions, such as statistics that are related to the speed dial or call list Busy Lamp Field (BLF) subscriptions. The following table contains information on CiscoPresence feature.

**Table 67: Cisco Presence**

| Counters                               | Counter Description                                                                                                                                    |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| ActiveCallListAndTrunkSubscriptions    | This counter represents the active presence subscriptions for the call list feature as well as presence subscriptions through SIP trunk.               |
| ActiveSubscriptions                    | This counter represents all active incoming and outgoing presence subscriptions.                                                                       |
| CallListAndTrunkSubscriptionsThrottled | This counter represents the cumulative number of rejected call list and trunk side presence subscriptions due to throttling for the call list feature. |

| Counters                       | Counter Description                                                                                           |
|--------------------------------|---------------------------------------------------------------------------------------------------------------|
| IncomingLineSideSubscriptions  | This counter represents the cumulative number of presence subscriptions that were received on the line side.  |
| IncomingTrunkSideSubscriptions | This counter represents the cumulative number of presence subscriptions that were received on the trunk side. |
| OutgoingTrunkSideSubscriptions | This counter represents the cumulative number of presence subscriptions that were sent on the trunk side.     |

## Cisco QSIG Feature

The Cisco QSIG Feature object provides information about the operation of various QSIG features, such as call diversion and path replacement. The following table contains information about the Cisco QSIG feature counters.

**Table 68: Cisco QSIG Feature**

| Counters                      | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallForwardByRerouteCompleted | This counter represents the number of successful calls that has been forwarded by rerouting. Call forward by rerouting enables the path for a forwarded call to be optimized (minimizes the number of B-Channels in use) from the originator perspective. This counter resets when the CiscoCallManager service parameter Call Forward by Reroute Enabled is enabled or disabled, or when the Cisco CallManager Service restarts. |
| PathReplacementCompleted      | This counter represents the number of successful path replacements that have occurred. Path replacement in a QSIG network optimizes the path between two edge PINX (PBXs) that are involved in a call. This counter resets when the CiscoCallManager service parameter Path Replacement Enabled is enabled or disabled, or when the Cisco CallManager Service restarts.                                                           |

## Cisco Signaling Performance

The Cisco Signaling Performance object provides call-signaling data on transport communications on Unified Communications Manager. The following table contains information about the Cisco Signaling Performance counter.

**Table 69: Cisco Signaling Performance**

| Counters            | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UDPPacketsThrottled | This counter represents the total number of incoming UDP packets that were throttled (dropped) because they exceeded the threshold for the number of incoming packets per second that is allowed from a single IP address. Configure the threshold via the SIP Station UDP Port Throttle Threshold and SIP Trunk UDP Port Throttle Threshold service parameters in Cisco Unified Communications Manager Administration. This counter increments for every throttled UDP packet that was received since the last restart of the Cisco CallManager Service. |

## Cisco SIP

The Cisco Session Initiation Protocol (SIP) object provides information about configured SIP devices. The following table contains information on the CiscoSIP counters.

**Table 70: Cisco SIP**

| Counters            | Counter Description                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsActive         | This counter represents the number of calls that are currently active (in use) on this SIP device.                                                                                                                                         |
| CallsAttempted      | This counter represents the number of calls that have been attempted on this SIP device, including the successful and unsuccessful call attempts.                                                                                          |
| CallsCompleted      | This counter represents the number of calls that were actually connected (a voice path was established) from a SIP device. This number increments when the call is terminated.                                                             |
| CallsInProgress     | This counter represents the number of calls that are currently in progress on a SIP device, including all active calls. When all calls that are in progress are connected, the number of CallsInProgress equals the number of CallsActive. |
| VideoCallsActive    | This counter represents the number of video calls with streaming video connections that are currently active (in use) on this SIP device.                                                                                                  |
| VideoCallsCompleted | This counter represents the number of video calls that were actually connected with video streams for this SIP device. This number increments when the call is terminated.                                                                 |

## Cisco SIP Line Normalization

The Cisco SIP line normalization performance object contains counters that allow you to monitor aspects of the normalization script for SIP lines, including initialization errors, runtime errors, and script status. For SIP lines, each script has only one set of performance counters. This is true even if two endpoints share the same script. The following table contains information about the Cisco SIP line normalization counters.

| Display Names            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DeviceResetAutomatically | <p>This counter indicates the number of times that Unified Communications Manager automatically resets the device (SIP phone). Automatic resets occur only if the value specified in Script Execution Error Recovery Action or System Resource Error Recovery Action field is set to Reset Device. This counter increments each time Unified Communications Manager automatically resets a device (SIP phone) due to an error. The count is restarted when the script is reset following a change to the script configuration.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ErrorExecution           | <p>This counter indicates the number of execution errors that occur while the script executes. Execution errors can occur while a message handler executes. Execution errors can be caused by problems such as resource errors or an argument mismatch in a function call.</p> <p>When an execution error occurs, Unified Communications Manager performs the following actions:</p> <ul style="list-style-type: none"> <li>• Automatically restores the message to the original content before applying additional error-handling actions.</li> <li>• Increments the value of the counter.</li> <li>• Takes appropriate action based on the configuration of the Script Execution Error Recovery Action and System Resource Error Recovery Action fields in Cisco Unified Communications Manager Administration.</li> </ul> <p>Check the SIPNormalizationScriptError alarm for details, including the line number in the script that failed. Correct the script problem, upload the corrected script as needed, and reset the script by clicking the Reset button at the top of the script configuration page. The counter increments for each execution error since the last time the script was reset following a change to the script configuration. Both a script configuration change and a script reset must occur to restart the counter.</p> <p>If the counter continues to increment after you fix the script problem, examine the script again.</p> |

| Display Names | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ErrorInit     | <p>This counter indicates the number of times a script error occurred after the script was successfully loaded into memory but failed to initialize in Unified Communications Manager. A script can fail to initialize due to resource errors, an argument mismatch in a function call, and so on.</p> <p>Check the SIPNormalizationScriptError alarm for details, including the line number in the script that failed. Correct the script problem, upload the corrected script if needed, and reset the script by clicking the Reset button at the top of the script configuration page. The counter for the script instance increments every time an initialization error occurs. This counter provides a count from the most recent script reset that was accompanied by a change to the script configuration. Both a script configuration change and a script reset must occur to restart the counter. If the counter continues to increment after you fix the script problem, examine the script again. When the error occurs during initialization, Unified Communications Manager automatically disables the script.</p> |
| ErrorInternal | <p>This counter indicates the number of internal errors that have occurred while the script executed. Internal errors are extremely rare. If the value in this counter is higher than zero, there is a defect in the system not related to the script content or execution. Collect SDI traces and contact the Technical Assistance Center (TAC).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ErrorLoad     | <p>This counter indicates the number of times that a script error occurred while the script loaded into memory in Unified Communications Manager.</p> <p>A script can fail to load due to memory issues or syntax errors; check the SIPNormalizationScriptError alarm for details such as the script line number where the syntax error exists, check the script for syntax errors, upload a corrected script if needed and reset the script by clicking the Reset button at the top of the script configuration page.</p> <p>The counter for the script instance increments for each load error since the last time the script was reset following a change to the script configuration. Both a script configuration change and a script reset must have occurred to restart the counter. If the counter continues to increment after you believe you have fixed the script problem, examine the script again.</p>                                                                                                                                                                                                             |

| Display Names         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ErrorResource         | <p>This counter indicates whether or not the script encountered a resource error.</p> <p>There are two kinds of resource errors: exceeding the value configured in the Memory Threshold field or exceeding the value configured in the Lua Instruction Threshold field. Both fields display in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration. If either condition occurs, Unified Communications Manager immediately closes the script and issues the SIPNormalizationScriptError alarm.</p> <p>If a resource error occurs while the script loads or initializes, the script is disabled. If a resource error occurs during execution, the configured system resource error recovery action is taken as configured in the System Resource Error Recovery Action field on the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration.</p> |
| MemoryUsage           | <p>This counter indicates the amount of memory, in bytes, that the script consumes based on the accumulation for all SIP phones using this script. This counter increases and decreases to match the amount of memory being utilized by the script. The count gets cleared when the script is closed (because a closed script consumes no memory) and restarts when the script is opened (enabled). A high number in this counter could indicate a resource problem. Check the MemoryUsagePercentage counter and check for a SIPNormalizationResourceWarning alarm, which occurs when the resource consumption exceeds an internally set threshold.</p>                                                                                                                                                                                                                                                                                           |
| MemoryUsagePercentage | <p>This counter indicates the percentage of the total amount of memory the script consumes based on the accumulation for all SIP phones using this script.</p> <p>The value in this counter is derived by dividing the value in the MemoryUsage counter by the value in the Memory Threshold field (in the SIP Normalization Script Configuration window) and multiplying that result by 100 to arrive at a percentage value.</p> <p>This counter increases and decreases in accordance with the MemoryUsage counter. This count is cleared when the script is closed (because closed scripts consume no memory) and restarts when the script is opened (enabled). When this counter reaches the internally controlled resource threshold, the SIPNormalizationResourceWarning alarm is issued.</p>                                                                                                                                               |
| MessageRollback       | <p>This counter indicates the number of times a message was not modified by the script due to an error while the script executes. This can occur only if the value in the Script Execution Error Recovery Action field is set to Message Rollback Only.</p> <p>When an execution error occurs, Unified Communications Manager automatically restores the message to the original contents prior to applying additional error-handling actions. If error handling specifies Rollback Only, no further action is taken beyond rolling back to the original message prior to the normalization attempt. For the other possible Script Execution Error Recovery Action settings, the action specified occurs after the message restores to the original contents.</p>                                                                                                                                                                                 |

| Display Names              | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| msgAddContentBody          | This counter indicates the number of times that the script adds a content body to the message. Assuming your message variable name is “msg”, if you are using the msg:addContentBody API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                        |
| msgAddHeader               | This counter indicates the number of times that the script adds a SIP header to the message. Assuming your message variable name is “msg”, if you are using the msg:addHeader API in the script, this counter increases each time this API executes successfully. If the counter behavior is unexpected, examine the script logic for errors.                                               |
| msgAddHeaderUriParameter   | This counter indicates the number of times that the script adds a SIP header URI parameter to a SIP header in the message. Assuming your message variable name is “msg”, if you are using the msg:addHeaderUriParameter API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.     |
| msgAddHeaderValueParameter | This counter indicates the number of times that the script adds a SIP header value parameter to a SIP header in the message. Assuming your message variable name is “msg”, if you are using the msg:addHeaderValueParameter API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors. |
| msgApplyNumberMask         | This counter indicates the number of times that the script applies a number mask to a SIP header in the message. Assuming your message variable name is “msg”, if you are using the msg:applyNumberMask API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                     |
| msgBlock                   | This counter indicates the number of times that the script blocks a message. Assuming your message variable name is “msg”, if you are using the msg:block API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                   |
| msgConvertDiversiontoHI    | This counter indicates the number of times that the script converts Diversion headers into History-Info headers in the message. Assuming your message variable name is “msg”, if you are using the msg:convertDiversionToHI API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors. |
| msgConvertHIToDiverion     | This counter indicates the number of times that the script converts History-Info headers into Diversion headers in the message. Assuming your message variable name is “msg”, if you are using the msg:convertHIToDiversion API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors. |

| Display Names          | Description                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| msgModifyHeader        | This counter indicates the number of times that the script modifies a SIP header in the message. Assuming your message variable name is “msg”, if you are using the msg:modifyHeader API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                            |
| msgRemoveContentBody   | This counter indicates the number of times that the script removes a content body from the message. Assuming your message variable name is “msg”, if you are using the msg:removeContentBody API in the script, this counter increases each time this API successfully executed. If the counter behavior is unexpected, examine the script logic for errors.                    |
| msgRemoveHeader        | This counter indicates the number of times that the script removes a SIP header from the message. Assuming your message variable name is “msg”, if you are using the msg:removeHeader API in the script, this counter increases each time this API is successfully executed. If the counter behavior is unexpected, examine the script logic for errors.                        |
| msgRemoveHeaderValue   | This counter indicates the number of times that the script removes a SIP header value from the message. Assuming your message variable name is “msg”, if you are using the msg:removeHeaderValue API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                |
| msgRemoveUnreliableSdp | This counter indicates the number of times that the script removes SDP body from an unreliable 18x SIP message. Assuming your message variable name is “msg”, if you are using the msg:removeUnreliableSDP API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.      |
| msgSetRequestUri       | This counter indicates the number of times that the script modifies the request URI in the message. Assuming your message variable name is “msg”, if you are using the msg:setRequestUri API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                        |
| msgSetResponseCode     | This counter indicates the number of times that the script modifies the response code or response phrase in the message. Assuming your message variable name is “msg”, if you are using the msg:setResponseCode API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors. |
| msgSetSdp              | This counter indicates the number of times that the script sets the SDP in the message. Assuming your message variable name is “msg”, if you are using the msg:setSdp API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                           |

| Display Names             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ptAddContentBody          | This counter indicates the number of times that the script adds a content body to the PassThrough object. Assuming your PassThrough object name is “pt”, if you are using the pt:addContentBody API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                                                                                    |
| ptAddHeader               | This counter indicates the number of times that the script adds a SIP header to the PassThrough object. Assuming your PassThrough object name is “pt”, if you are using the pt:addHeader API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                                                                                           |
| ptAddHeaderUriParameter   | This counter indicates the number of times that the script adds a SIP header URI parameter to the PassThrough object. Assuming your PassThrough object name is “pt”, if you are using the pt:addHeaderUriParameter API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                                                                 |
| ptAddHeaderValueParameter | This counter indicates the number of times that the script adds a SIP header value parameter to the PassThrough object. Assuming your PassThrough object name is “pt”, if you are using the pt:addHeaderValueParameter API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                                                             |
| ptAddRequestUriParameter  | This counter indicates the number of times that the script adds a request URI parameter to the PassThrough object. Assuming your PassThrough object name is “pt”, if you are using the pt:addRequestUriParameter API in the script, this counter increases each time this API successfully executes. If the counter behavior is unexpected, examine the script logic for errors.                                                                                                                   |
| ScriptActive              | <p>This counter indicates whether the script is currently active (running on SIP phones). A value of 0 indicates that the script is closed (disabled). A value of 1 indicates that the script is open and operational.</p> <p>To open the script that should be running, check for any alarms that might indicate why the script is not open, correct any errors, upload a new script if necessary, and reset the script.</p>                                                                      |
| ScriptClosed              | This counter indicates the number of times that Unified Communications Manager closes the script. When the script closes on one SIP phone, it can still be enabled on other SIP phones. Unified Communications Manager closes the script because the last SIP phone using this script was either reset manually, reset automatically (due to an error), or deleted. This count restarts when the script resets following a change to the script configuration and when Cisco CallManager restarts. |

| Display Names               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptDisabledAutomatically | <p>This counter indicates the number of times that the system automatically disables the script. The values that are specified in the Execution Error Recovery Action or System Resource Error Recovery Action field in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration determine whether the script is disabled. Automatic script disable occurs if either of these fields are set to Disable Script. The script also gets disabled as a result of script error conditions that are encountered during loading and initialization.</p> <p>This counter provides a count from the most recent manual device reset that involves a script configuration change (a device reset alone does not restart the count; the script must also have changed before the reset occurs). The counter increments each time Unified Communications Manager automatically disables a script due because of script errors.</p> <p>If the number in this counter is higher than expected, perform the following steps:</p> <ul style="list-style-type: none"> <li>• Check for a SIPNormalizationScriptError alarm and SIPNormalizationAutoResetDisabled alarm.</li> <li>• Check for any resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li> <li>• Check for any unexpected SIP normalization events in the SDI trace files.</li> </ul> |
| ScriptOpened                | <p>This counter indicates the number of times that Unified Communications Manager attempts to open the script. For the script to open, it must load into memory in Unified Communications Manager, initialize, and be operational. A number greater than 1 in this counter means that Unified Communications Manager has made more than one attempt to open this script either for an expected reason or due to an error during loading or initialization. The error can occur due to execution errors or resource errors or invalid syntax in the script. Expect this counter to be greater than 1 if the ScriptResetAutomatically counter increments.</p> <p>If the number in this counter is higher than expected, perform the following steps:</p> <ul style="list-style-type: none"> <li>• Check for alarms such as the SIPNormalizationScriptClosed, SIPNormalizationScriptError, or SIPNormalizationResourceWarning.</li> <li>• Check resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li> <li>• Check for any unexpected SIP normalization events in the SDI trace files.</li> </ul> <p>This count restarts when the script resets after a script configuration change and when Unified Communications Manager restarts.</p>                                                                                                                                           |

| Display Names            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptResetAutomatically | <p>This counter indicates the number of times that the system automatically resets the script. The script resets based on the values that are specified in the Script Execution Error Recovery Action and System Resource Error Recovery Action fields in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration. Automatic resets can occur if the value in either of these fields is Reset Script.</p> <p>This counter specifies the number of times that the system automatically resets the script following the last time the script is reset after a change to the script configuration. The counter increments each time Unified Communications Manager automatically resets a script because of script errors.</p> <p>If the number in this counter is higher than expected, perform the following steps:</p> <ul style="list-style-type: none"> <li>• Check for a SIPNormalizationScriptError alarm.</li> <li>• Check for any resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li> <li>• Check for any unexpected SIP normalization events in the SDI trace files.</li> </ul> |
| ScriptResetManually      | <p>This counter indicates the number of times that the script manually resets in Cisco Unified Communications Manager Administration or by other methods, such as AXL, or a reset on the last SIP phone that used the script. This counter increments when a script is reset due to configuration changes. This counter restarts when the script is deleted, or when Cisco CallManager restarts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Cisco SIP Normalization

The Cisco SIP Normalization performance object contains counters that allow you to monitor aspects of the normalization script, including initialization errors, runtime errors, and script status. Each device that has an associated script causes a new instance of these counters to be created. The following table contains Unified Communications Manager the CiscoSIP Normalization counters.

**Table 71: Cisco SIP Normalization**

| Display Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DeviceResetAutomatically | <p>This counter indicates the number of times that Unified Communications Manager automatically resets the device (SIP trunk). The device reset is based on the values that are specified in the Script Execution Error Recovery Action and System Resource Error Recovery Action fields on the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration. When the device (SIP trunk) is reset due to script errors, the counter value increments. This count restarts when the device is reset manually.</p> |

| Display Name        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DeviceResetManually | <p>This counter indicates the number of times that the device (SIP trunk) is reset manually in Cisco Unified Communications Manager Administration or by other methods, such as AXL. When the device associated with a script is reset due to configuration changes, the counter value increments.</p> <p>The counter restarts in the following situations:</p> <ul style="list-style-type: none"> <li>• The SIP trunk is deleted.</li> <li>• The script on the trunk gets changed or deleted.</li> <li>• Unified Communications Manager restarts.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| ErrorExecution      | <p>This counter represents the number of execution errors that occurred while the script executed. Execution errors can occur while a message handler executes. Execution errors can be caused by resource errors, an argument mismatch in a function call, and so on.</p> <p>When an execution error occurs, Unified Communications Manager performs the following actions:</p> <ul style="list-style-type: none"> <li>• Automatically restores the message to the original content before applying additional error handling actions.</li> <li>• Increments the value of the counter.</li> <li>• Takes appropriate action based on the configuration of the Script Execution Error Recovery Action and System Resource Error Recovery Action fields in Cisco Unified Communications Manager Administration.</li> </ul> <p>Check the SIPNormalizationScriptError alarm for details, including the line number in the script that failed. Correct the script problem, upload the corrected script as needed, and reset the trunk. This counter increments every time an execution error occurs. This counter provides a count from the most recent trunk reset that involved a script configuration change. (A device reset alone does not restart the count; the script configuration must also change before the reset occurs.)</p> <p>If the counter continues to increment after you fix the script problem, examine the script again.</p> |

| Display Name  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ErrorInit     | <p>This counter represents the number of times a script error occurred after the script successfully loaded into memory, but failed to initialize in Unified Communications Manager. A script can fail to initialize due to resource errors, an argument mismatch in a function call, the expected table was not returned, and so on.</p> <p>Check the SIPNormalizationScriptError alarm for details, including the line number in the script that failed. Correct the script problem, upload the corrected script as needed, and reset the trunk. This counter increments every time an initialization error occurs. This counter provides a count from the most recent trunk reset that was accompanied by a script configuration change. (A device reset alone does not restart the count; the script configuration must also change before the reset occurs.) If the counter continues to increment after you fix the script problem, examine the script again. When the error occurs during initialization, Unified Communications Manager automatically disables the script.</p> |
| ErrorInternal | <p>This counter indicates the number of internal errors that occurred while the script executed. Internal errors are very rare. If the value in this counter is higher than zero, a defect exists in the system that is not related to the script content or execution. Collect SDI traces and contact the Technical Assistance Center (TAC).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ErrorLoad     | <p>This counter represents the number of times a script error occurred when the script loaded into memory in Unified Communications Manager. A script can fail to load due to memory issues or syntax errors.</p> <p>Check the SIPNormalizationScriptError alarm for details. Check the script syntax for errors, upload the corrected script as needed, and reset the trunk. This counter increments every time a load error occurs. This counter provides a count from the most recent trunk reset that was accompanied by a script configuration change. (A device reset alone will not restart the count; the script configuration must also change before the reset occurs.) If the counter continues to increment even after you fix the script problem, examine the script again.</p>                                                                                                                                                                                                                                                                                           |

| Display Name          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ErrorResource         | <p>This counter indicates whether the script encountered a resource error.</p> <p>Two kinds of resource errors exist: exceeding the value in the Memory Threshold field and exceeding the value in the Lua Instruction Threshold field. (Both fields display on the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration.) If either condition occurs, Unified Communications Manager immediately closes the script and issues the SIPNormalizationScriptError alarm.</p> <p>If a resource error occurs while the script loads or initializes, the script is disabled. If a resource error occurs during execution, the configured system resource error recovery action is taken. (The setting of the System Resource Error Recovery Action field on the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration defines this action.)</p> |
| MemoryUsage           | <p>This counter specifies the amount of memory, in bytes, that the script consumes. This counter increases and decreases to match the amount of memory that the script uses. This count gets cleared when the script closes (because a closed script does not consume memory) and restarts when the script opens (gets enabled). A high number in this counter indicates a resource problem. Check the MemoryUsagePercentage counter and the SIPNormalizationResourceWarning alarm, which occur when the resource consumption exceeds an internally set threshold.</p>                                                                                                                                                                                                                                                                                                                                                                   |
| MemoryUsagePercentage | <p>This counter specifies the percentage of the total amount of memory that the script consumes.</p> <p>The value in this counter is derived by dividing the value in the MemoryUsage counter by the value in the Memory Threshold field (in the SIP Normalization Script Configuration window) and multiplying the result by 100 to arrive at a percentage.</p> <p>This counter increases and decreases in accordance with the MemoryUsage counter. This count gets cleared when the script closes (because closed scripts do not consume memory) and restarts when the script opens (gets enabled). When this counter reaches the internally controlled resource threshold, the SIPNormalizationResourceWarning alarm is issued.</p>                                                                                                                                                                                                   |

| Display Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MessageRollback          | <p>This counter indicates the number of times that the system automatically rolled back a message. The system rolls back the message by using the error handling that is specified in the Script Execution Error Recovery Action field in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration.</p> <p>When an execution error occurs, Unified Communications Manager automatically restores the message to the original content before applying additional error handling actions. If error handling specifies Rollback only, no further action is taken beyond rolling back to the original message before the normalization attempt. For the other possible Script Execution Error Recovery Actions, message rollback always occurs first, followed by the specified action, such as disabling the script, resetting the script automatically, or resetting the trunk automatically.</p> |
| msgAddContentBody        | <p>This counter represents the number of times that the script added a content body to the message. If you are using the msg:addContentBody API in the script, this counter increases each time that the msg:addContentBody API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| msgAddHeader             | <p>This counter represents the number of times that the script added a SIP header to the message. If you are using the msg:addHeader API in the script, this counter increases each time that the msg:addHeader API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| msgAddHeaderUriParameter | <p>This counter represents the number of times that the script added a SIP header URI parameter to a SIP header in the message. If you are using the msg:addHeaderUriParameter API in the script, this counter increases each time that the msg:addHeaderUriParameter API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Display Name               | Description                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| msgAddHeaderValueParameter | This counter represents the number of times that the script added a SIP header value parameter to a SIP header in the message. If you are using the msg:addHeaderValueParameter API in the script, this counter increases each time that the msg:addHeaderValueParameter API executes successfully. If the counter behavior is not as expected, examine the script logic for errors. |
| msgApplyNumberMask         | This counter represents the number of times that the script applied a number mask to a SIP header in the message. If you are using the msg:applyNumberMask API in the script, this counter increases each time that the msg:applyNumberMask API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                              |
| msgBlock                   | This counter represents the number of times that the script blocked a message. If you are using the msg:block API in the script, this counter increases each time that the msg:block API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                                                                     |
| msgConvertDiversionToHI    | This counter represents the number of times that the script converted Diversion headers into History-Info headers in the message. If you are using the msg:convertDiversionToHI API in the script, this counter increases each time that the msg:convertDiversionToHI API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.    |
| msgConvertHIToDiversion    | This counter represents the number of times that the script converted Diversion headers into History-Info headers in the message. If you are using the msg:convertDiversionToHI API in the script, this counter increases each time that the msg:convertDiversionToHI API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.    |
| msgModifyHeader            | This counter represents the number of times that the script modified a SIP header in the message. If you are using the msg:modifyHeader API in the script, this counter increases each time that the msg:modifyHeader API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                                    |

| Display Name         | Description                                                                                                                                                                                                                                                                                                                                                         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| msgRemoveContentBody | This counter represents the number of times that the script removed a content body from the message. If you are using the msg:removeContentBody API in the script, this counter increases each time that the msg:removeContentBody API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                      |
| msgRemoveHeader      | This counter represents the number of times that the script removed a SIP header from the message. If you are using the msg:removeHeader API in the script, this counter increases each time that the msg:removeHeader API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                  |
| msgRemoveHeaderValue | This counter represents the number of times that the script removed a SIP header value from the message. If you are using the msg:removeHeaderValue API in the script, this counter increases each time that the msg:removeHeaderValue API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                  |
| msgSetRequestUri     | This counter represents the number of times that the script modified the request URI in the message. If you are using the msg:setRequestUri API in the script, this counter increases each time that the msg:setRequestUri API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                              |
| msgSetResponseCode   | This counter represents the number of times that the script modified the response code and/or response phrase in the message. If you are using the msg:setResponseCode API in the script, this counter increases each time that the msg:setResponseCode API executes successfully. If the counter behavior is not as expected, examine the script logic for errors. |
| msgSetSdp            | This counter represents the number of times that the script set the SDP in the message. If you are using the msg:setSdp API in the script, this counter increases each time that the msg:setSdp API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                                         |

| Display Name              | Description                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ptAddContentBody          | This counter represents the number of times that the script added a content body to the PassThrough (pt) object. If you are using the pt:addContentBody API in the script, this counter increases each time that the pt:addContentBody API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                 |
| ptAddHeader               | This counter represents the number of times that the script added a SIP header to the PassThrough (pt) object. If you are using the pt:addHeader API in the script, this counter increases each time that the pt:addHeader API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.                                             |
| ptAddHeaderUriParameter   | This counter represents the number of times that the script added a SIP header URI parameter to the PassThrough (pt) object. If you are using the pt:addHeaderUriParameter API in the script, this counter increases each time that the pt:addHeaderUriParameter API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.       |
| ptAddHeaderValueParameter | This counter represents the number of times that the script added a SIP header value parameter to the PassThrough (pt) object. If you are using the pt:addHeaderValueParameter API in the script, this counter increases each time that the pt:addHeaderValueParameter API executes successfully. If the counter behavior is not as expected, examine the script logic for errors. |
| ptAddRequestUriParameter  | This counter represents the number of times that the script added a request URI parameter to the PassThrough (pt) object. If you are using the pt:addRequestUriParameter API in the script, this counter increases each time that the pt:addRequestUriParameter API executes successfully. If the counter behavior is not as expected, examine the script logic for errors.        |

| Display Name | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptActive | <p>This counter indicates whether the script is currently active (running on the trunk). The following values display for the counter:</p> <ul style="list-style-type: none"> <li>• 0—Indicates that the script is closed (disabled).</li> <li>• 1—Indicates that the script is open and operational.</li> </ul> <p>To open the script that should be running on this trunk, perform the following actions:</p> <ol style="list-style-type: none"> <li>1. Check for any alarms that might indicate why the script is not open.</li> <li>2. Correct any errors.</li> <li>3. Upload a new script if necessary.</li> <li>4. Reset the trunk.</li> </ol> |
| ScriptClosed | <p>This counter indicates the number of times that Unified Communications Manager has closed the script.</p> <p>When the script is closed, it is not enabled on this device.</p> <p>Unified Communications Manager closes the script under one of the following conditions:</p> <ul style="list-style-type: none"> <li>• The device was reset manually.</li> <li>• The device was reset automatically (due to an error).</li> <li>• The device was deleted.</li> </ul> <p>This count restarts when the SIP trunk is reset after a change to the script configuration and when Unified Communications Manager restarts.</p>                           |

| Display Name                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptDisabledAutomatically | <p>This counter indicates the number of times that the system automatically disabled the script. The values that are specified in the Script Execution Error Recovery Action and System Resource Error Recovery Action fields in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration determine whether the script is disabled. The script also gets disabled as a result of script error conditions that are encountered during loading and initialization. This counter provides a count from the most recent manual device reset that involved a script configuration change (a device reset alone does not restart the count; the script must also have changed before the reset occurs). This counter increments every time Unified Communications Manager automatically disables a script due to script errors.</p> <p>If the number in this counter is higher than expected, perform the following actions:</p> <ul style="list-style-type: none"><li>• Check for SIPNormalizationScriptError alarm and SIPNormalizationAutoResetDisabled alarm.</li><li>• Check for any resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li><li>• Check for any unexpected SIP normalization events in the SDI trace files.</li></ul> |

| Display Name | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptOpened | <p>This counter indicates the number of times that the Unified Communications Manager attempted to open the script. For the a script to open, it must load into memory in Unified Communications Manager, initialize, and be operational. A number greater than one in this counter means that Unified Communications Manager has made more than one attempt to open the script on this SIP trunk, either for an expected reason or due to an error during loading or initialization. The error can occur due to execution errors or resource errors or invalid syntax in the script. Expect this counter to be greater than one if any of these counters increment: DeviceResetManually, DeviceResetAutomatically, or ScriptResetAutomatically. The DeviceResetManually counter increments when an expected event, such as a maintenance window on the SIP trunk, causes the script to close.</p> <p>If the number in this counter is high for an unexpected reason, perform the following actions:</p> <ul style="list-style-type: none"> <li>• Check for alarms, such as the SIPNormalizationScriptClosed, SIPNormalizationScriptError, or SIPNormalizationResourceWarning.</li> <li>• Check resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li> <li>• Check for any unexpected SIP normalization events in the SDI trace files.</li> </ul> <p>This count restarts when the SIP trunk resets after a script configuration change and when Unified Communications Manager restarts.</p> |

| Display Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ScriptResetAutomatically | <p>This counter indicates the number of times that the system automatically reset the script. The script resets based on the values that are specified in the Script Execution Error Recovery Action and System Resource Error Recovery Action fields in the SIP Normalization Script Configuration window in Cisco Unified Communications Manager Administration. This counter specifies a count of the number of automatic script resets after the last manual device reset; this counter increments every time the Unified Communications Manager automatically resets a script due to script errors.</p> <p>If the number in this counter is higher than expected, perform the following actions:</p> <ul style="list-style-type: none"> <li>• Check for a SIPNormalizationScriptError alarm.</li> <li>• Check for any resource-related alarms and counters in RTMT to determine whether a resource issue is occurring.</li> <li>• Check for any unexpected SIP normalization events in the SDI trace files.</li> </ul> |

## Cisco SIP Stack

The Cisco SIP Stack object provides information about Session Initiation Protocol (SIP) stack statistics that are generated or used by SIP devices such as SIP Proxy, SIP Redirect Server, SIP Registrar, and SIP User Agent. The following table contains information on Cisco SIP Stack counters.

**Table 72: Cisco SIP Stack**

| Counters  | Counter Description                                                                                                            |
|-----------|--------------------------------------------------------------------------------------------------------------------------------|
| AckIns    | This counter represents the total number of ACK requests that the SIP device received.                                         |
| AckOuts   | This counter represents the total number of ACK requests that the SIP device sent.                                             |
| ByeIns    | This counter represents the total number of BYE requests that the SIP device received. This number includes retransmission.    |
| ByeOuts   | This counter represents the total number of BYE requests that the SIP device sent. This number includes retransmission.        |
| CancelIns | This counter represents the total number of CANCEL requests that the SIP device received. This number includes retransmission. |

| Counters              | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CancelOuts            | This counter represents the total number of CANCEL requests that the SIP device sent. This number includes retransmission.                                                                                                                                                                                                                                                                                                                 |
| CCBsAllocated         | This counter represents the number of Call Control Blocks (CCB) that are currently in use by the SIP stack. Each active SIP dialog uses one CCB.                                                                                                                                                                                                                                                                                           |
| GlobalFailedClassIns  | This counter represents the total number of 6xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates that a SIP device, that is providing a client function, received a failure response message. Generally, the responses indicate that a server had definitive information on a particular called party and not just the particular instance in the Request-URI. |
| GlobalFailedClassOuts | This counter represents the total number of 6xx class SIP responses that the SIP device sent. This number includes retransmission. This class of responses indicates that a SIP device, that is providing a server function, received a failure response message. Generally, the responses indicate that a server had definitive information on a particular called party and not just the particular instance in the Request-URI.         |
| InfoClassIns          | This counter represents the total number of 1xx class SIP responses that the SIP device received. This includes retransmission. This class of responses provides information on the progress of a SIP request.                                                                                                                                                                                                                             |
| InfoClassOuts         | This counter represents the total number of 1xx class SIP responses that the SIP device sent. This includes retransmission. This class of responses provides information on the progress of processing a SIP request.                                                                                                                                                                                                                      |
| InfoIns               | This counter represents the total number of INFO requests that the SIP device has received. This number includes retransmission.                                                                                                                                                                                                                                                                                                           |
| InfoOuts              | This counter represents the total number of INFO requests that the SIP device has sent. This number includes retransmission.                                                                                                                                                                                                                                                                                                               |
| InviteIns             | This counter represents the total number of INVITE requests that the SIP device received. This number includes retransmission.                                                                                                                                                                                                                                                                                                             |

| <b>Counters</b> | <b>Counter Description</b>                                                                                                                                                                                                                                 |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| InviteOuts      | This counter represents the total number of INVITE requests that the SIP device has sent. This number includes retransmission.                                                                                                                             |
| NotifyIns       | This counter represents the total number of NOTIFY requests that the SIP device has received. This number includes retransmission.                                                                                                                         |
| NotifyOuts      | This counter represents the total number of NOTIFY requests that the SIP device has sent. This number includes retransmission.                                                                                                                             |
| OptionsIns      | This counter represents the total number of OPTIONS requests that the SIP device received. This number includes retransmission.                                                                                                                            |
| OptionsOuts     | This counter represents the total number of OPTIONS requests that the SIP device has sent. This number includes retransmission.                                                                                                                            |
| PRackIns        | This counter represents the total number of PRACK requests that the SIP device has received. This number includes retransmission.                                                                                                                          |
| PRackOuts       | This counter represents the total number of PRACK requests that the SIP device has sent. This number includes retransmission.                                                                                                                              |
| PublishIns      | This counter represents the total number of PUBLISH requests that the SIP device received. This number includes retransmissions.                                                                                                                           |
| PublishOuts     | This counter represents the total number of PUBLISH requests that the SIP device has sent. This number includes retransmission                                                                                                                             |
| RedirClassIns   | This counter represents the total number of 3xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses provides information about redirections to addresses where the callee may be reachable. |
| RedirClassOuts  | This counter represents the total number of 3xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses provides information about redirections to addresses where the callee may be reachable.     |
| ReferIns        | This counter represents the total number of REFER requests that the SIP device has received. This number includes retransmission.                                                                                                                          |

| <b>Counters</b>         | <b>Counter Description</b>                                                                                                                                                                                                                          |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ReferOuts               | This counter represents the total number of REFER requests that the SIP device has sent. This number includes retransmission.                                                                                                                       |
| RegisterIns             | This counter represents the total number of REGISTER requests that the SIP device has received. This number includes retransmission.                                                                                                                |
| RegisterOuts            | This counter represents the total number of REGISTER requests that the SIP device has sent. This number includes retransmission.                                                                                                                    |
| RequestsFailedClassIns  | This counter represents the total number of 4xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates a request failure by a SIP device that is providing a client function. |
| RequestsFailedClassOuts | This counter represents the total number of 4xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses indicates a request failure by a SIP device that is providing a server function.     |
| RetryByes               | This counter represents the total number of BYE retries that the SIP device has sent. To determine the number of first BYE attempts, subtract the value of this counter from the value of the sipStatsByeOuts counter.                              |
| RetryCancels            | This counter represents the total number of CANCEL retries that the SIP device has sent. To determine the number of first CANCEL attempts, subtract the value of this counter from the value of the sipStatsCancelOuts counter.                     |
| RetryInfo               | This counter represents the total number of INFO retries that the SIP device has sent. To determine the number of first INFO attempts, subtract the value of this counter from the value of the sipStatsInfoOuts counter.                           |
| RetryInvites            | This counter represents the total number of INVITE retries that the SIP device has sent. To determine the number of first INVITE attempts, subtract the value of this counter from the value of the sipStatsInviteOuts counter.                     |

| Counters               | Counter Description                                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RetryNotify            | This counter represents the total number of NOTIFY retries that the SIP device has sent. To determine the number of first NOTIFY attempts, subtract the value of this counter from the value of the sipStatsNotifyOuts counter.          |
| RetryPRACK             | This counter represents the total number of PRACK retries that the SIP device has sent. To determine the number of first PRACK attempts, subtract the value of this counter from the value of the sipStatsPRACKOuts counter.             |
| RetryPublish           | This counter represents the total number of PUBLISH retries that the SIP device has been sent. To determine the number of first PUBLISHs attempts, subtract the value of this counter from the value of the sipStatsPublishOuts counter. |
| RetryRefer             | This counter represents the total number of REFER retries that the SIP device has sent. To determine the number of first REFER attempts, subtract the value of this counter from the value of the sipStatsReferOuts counter.             |
| RetryRegisters         | This counter represents the total number of REGISTER retries that the SIP device has sent. To determine the number of first REGISTER attempts, subtract the value of this counter from the value of the sipStatsRegisterOuts counter.    |
| RetryRel1xx            | This counter represents the total number of Reliable 1xx retries that the SIP device has sent.                                                                                                                                           |
| RetryRequestsOut       | This counter represents the total number of Request retries that the SIP device has sent.                                                                                                                                                |
| RetryResponsesFinal    | This counter represents the total number of Final Response retries that the SIP device has sent.                                                                                                                                         |
| RetryResponsesNonFinal | This counter represents the total number of non-Final Response retries that the SIP device has sent.                                                                                                                                     |
| RetrySubscribe         | This counter represents the total number of SUBSCRIBE retries that the SIP device has sent. To determine the number of first SUBSCRIBE attempts, subtract the value of this counter from the value of the sipStatsSubscribeOuts counter. |

| Counters                         | Counter Description                                                                                                                                                                                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RetryUpdate                      | This counter represents the total number of UPDATE retries that the SIP device has sent. To determine the number of first UPDATE attempts, subtract the value of this counter from the value of the sipStatsUpdateOuts counter.                                        |
| SCBsAllocated                    | This counter represents the number of Subscription Control Blocks (SCB) that are currently in use by the SIP stack. Each subscription uses one SCB.                                                                                                                    |
| ServerFailedClassIns             | This counter represents the total number of 5xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates that failure responses were received by a SIP device that is providing a client function. |
| ServerFailedClassOuts            | This counter represents the total number of 5xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses indicates that failure responses were received by a SIP device that is providing a server function.     |
| SIPGenericCounter1               | Do not use this counter unless directed to do so by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                 |
| SIPGenericCounter2               | Do not use this counter unless directed to do so by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                 |
| SIPGenericCounter3               | Do not use this counter unless directed to do so by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                 |
| SIPGenericCounter4               | Do not use this counter unless directed to do so by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.                                                                                                                 |
| SIPHandlerSDLQueueSignalsPresent | This counter represents the number of SDL signals that are currently on the four SDL priority queues of the SIPHandler component. The SIPHandler component contains the SIP stack.                                                                                     |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| StatusCode1xxIns  | <p>This counter represents the total number of 1xx response messages, including retransmission, that the SIP device has received. This count includes the following 1xx responses:</p> <ul style="list-style-type: none"> <li>• 100 Trying</li> <li>• 180 Ringing</li> <li>• 181 Call is being forwarded</li> <li>• 182 Queued</li> <li>• 183 Session Progress</li> </ul>                                                                 |
| StatusCode1xxOuts | <p>This counter represents the total number of 1xx response messages, including retransmission, that the SIP device has sent. This count includes the following 1xx responses:</p> <ul style="list-style-type: none"> <li>• 100 Trying</li> <li>• 180 Ringing</li> <li>• 181 Call is being forwarded</li> <li>• 182 Queued</li> <li>• 183 Session Progress</li> </ul>                                                                     |
| StatusCode2xxIns  | <p>This counter represents the total number of 2xx response messages, including retransmission, that the SIP device has received. This count includes the following 2xx responses:</p> <ul style="list-style-type: none"> <li>• 200 OK</li> <li>• 202 Success Accepted</li> </ul>                                                                                                                                                         |
| StatusCode2xxOuts | <p>This counter represents the total number of 2xx response messages, including retransmission, that the SIP device has sent. This count includes the following 2xx responses:</p> <ul style="list-style-type: none"> <li>• 200 OK</li> <li>• 202 Success Accepted</li> </ul>                                                                                                                                                             |
| StatusCode3xxins  | <p>This counter represents the total number of 3xx response messages, including retransmission, that the SIP device has received. This count includes the following 3xx responses:</p> <ul style="list-style-type: none"> <li>• 300 Multiple Choices</li> <li>• 301 Moved Permanently</li> <li>• 302 Moved Temporarily</li> <li>• 303 Incompatible Bandwidth Units</li> <li>• 305 Use Proxy</li> <li>• 380 Alternative Service</li> </ul> |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| StatusCode302Outs | This counter represents the total number of 302 Moved Temporarily response messages, including retransmission, that the SIP device has sent.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| StatusCode4xxIns  | <p>This counter represents the total number of 4xx response messages, including retransmission, that the SIP device has received. This count includes the following 4xx responses:</p> <ul style="list-style-type: none"> <li>• 400 Bad Request</li> <li>• 401 Unauthorized</li> <li>• 402 Payment Required</li> <li>• 403 Forbidden</li> <li>• 404 Not Found</li> <li>• 405 Method Not Allowed</li> <li>• 406 Not Acceptable</li> <li>• 407 Proxy Authentication Required</li> <li>• 408 Request Timeout</li> <li>• 409 Conflict</li> <li>• 410 Gone</li> <li>• 413 Request Entity Too Large</li> <li>• 414 Request-URI Too Long</li> <li>• 415 Unsupported Media Type</li> <li>• 416 Unsupported URI Scheme</li> <li>• 417 Unknown Resource Priority</li> <li>• 420 Bad Extension</li> <li>• 422 Session Expires Value Too Small</li> <li>• 423 Interval Too Brief</li> <li>• 480 Temporarily Unavailable</li> <li>• 481 Call/Transaction Does Not Exist</li> <li>• 482 Loop Detected</li> <li>• 483 Too Many Hops</li> <li>• 484 Address Incomplete</li> <li>• 485 Ambiguous</li> <li>• 486 Busy Here</li> <li>• 487 Request Terminated</li> <li>• 488 Not Acceptable Here</li> <li>• 489 Bad Subscription Event</li> <li>• 491 Request Pending</li> </ul> |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| StatusCode4xxOuts | <p>This counter represents the total number of 4xx response messages, including retransmission, that the SIP device has sent. This count includes the following 4xx responses:</p> <ul style="list-style-type: none"> <li>• 400 Bad Request</li> <li>• 401 Unauthorized</li> <li>• 402 Payment Required</li> <li>• 403 Forbidden</li> <li>• 404 Not Found</li> <li>• 405 Method Not Allowed</li> <li>• 406 Not Acceptable</li> <li>• 407 Proxy Authentication Required</li> <li>• 408 Request Timeout</li> <li>• 409 Conflict</li> <li>• 410 Gone</li> <li>• 413 Request Entity Too Large</li> <li>• 414 Request-URI Too Long</li> <li>• 415 Unsupported Media Type</li> <li>• 416 Unsupported URI Scheme</li> <li>• 417 Unknown Resource Priority</li> <li>• 420 Bad Extension</li> <li>• 422 Session Expires Value Too Small</li> <li>• 423 Interval Too Brief</li> <li>• 480 Temporarily Unavailable</li> <li>• 481 Call/Transaction Does Not Exist</li> <li>• 482 Loop Detected</li> <li>• 483 Too Many Hops</li> <li>• 484 Address Incomplete</li> <li>• 485 Ambiguous</li> <li>• 486 Busy Here</li> <li>• 487 Request Terminated</li> <li>• 488 Not Acceptable Here</li> <li>• 489 Bad Subscription Event</li> <li>• 491 Request Pending</li> </ul> |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| StatusCode5xxIns  | <p>This counter represents the total number of 5xx response messages, including retransmission, that the SIP device has received. This count includes the following 5xx responses:</p> <ul style="list-style-type: none"> <li>• 500 Server Internal Error</li> <li>• 501 Not Implemented</li> <li>• 502 Bad Gateway</li> <li>• 503 Service Unavailable</li> <li>• 504 Server Timeout</li> <li>• 505 Version Not Supported</li> <li>• 580 Precondition Failed</li> </ul> |
| StatusCode5xxOuts | <p>This counter represents the total number of 5xx response messages, including retransmission, that the SIP device has sent. This count includes the following 5xx responses:</p> <ul style="list-style-type: none"> <li>• 500 Server Internal Error</li> <li>• 501 Not Implemented</li> <li>• 502 Bad Gateway</li> <li>• 503 Service Unavailable</li> <li>• 504 Server Timeout</li> <li>• 505 Version Not Supported</li> <li>• 580 Precondition Failed</li> </ul>     |
| StatusCode6xxIns  | <p>This counter represents the total number of 6xx response messages, including retransmission, that the SIP device has received. This count includes the following 6xx responses:</p> <ul style="list-style-type: none"> <li>• 600 Busy Everywhere</li> <li>• 603 Decline</li> <li>• 604 Does Not Exist Anywhere</li> <li>• 606 Not Acceptable</li> </ul>                                                                                                              |
| StatusCode6xxOuts | <p>This counter represents the total number of 6xx response messages, including retransmission, that the SIP device has sent. This count includes the following 6xx responses:</p> <ul style="list-style-type: none"> <li>• 600 Busy Everywhere</li> <li>• 603 Decline</li> <li>• 604 Does Not Exist Anywhere</li> <li>• 606 Not Acceptable</li> </ul>                                                                                                                  |
| SubscribeIns      | <p>This counter represents the total number of SUBSCRIBE requests that the SIP device has received. This number includes retransmission.</p>                                                                                                                                                                                                                                                                                                                            |

| Counters            | Counter Description                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SubscribeOuts       | This counter represents the total number of SUBSCRIBE requests that the SIP device has sent. This number includes retransmission.                                                                                                                                                                                                                                                         |
| SuccessClassIns     | This counter represents the total number of 2xx class SIP responses that the SIP device has received. This includes retransmission. This class of responses provides information on the successful completion of a SIP request.                                                                                                                                                           |
| SuccessClassOuts    | This counter represents the total number of 2xx class SIP responses that the SIP device has sent. This includes retransmission. This class of responses provides information on the successful completion of a SIP request.                                                                                                                                                               |
| SummaryRequestsIn   | This counter represents the total number of SIP request messages that have been received by the SIP device. This number includes retransmissions.                                                                                                                                                                                                                                         |
| SummaryRequestsOut  | This counter represents the total number of SIP request messages that the device sent. This number includes messages that originate on the device and messages that are being relayed by the device. When a particular message gets sent more than once, each transmission gets counted separately; for example, a message that is re-sent as a retransmission or as a result of forking. |
| SummaryResponsesIn  | This counter represents the total number of SIP response messages that the SIP device received. This number includes retransmission.                                                                                                                                                                                                                                                      |
| SummaryResponsesOut | This counter represents the total number of SIP response messages that the SIP device sent (originated and relayed). This number includes retransmission.                                                                                                                                                                                                                                 |
| UpdateIns           | This counter represents the total number of UPDATE requests that the SIP device has received. This number includes retransmission.                                                                                                                                                                                                                                                        |
| UpdateOuts          | This counter represents the total number of UPDATE requests that the SIP device has sent. This number includes retransmission.                                                                                                                                                                                                                                                            |

## Cisco SIP Station

The Cisco SIP Station object provides information about SIP line-side devices. The following table contains information about the Cisco SIP Station counters.

Table 73: Cisco SIP Station

| Counters                   | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ConfigMismatchesPersistent | This counter represents the number of times that a phone that is running SIP was persistently unable to register due to a configuration version mismatch between the TFTP server and Unified Communications Manager since the last restart of the Unified Communications Manager. This counter increments each time that Unified Communications Manager cannot resolve the mismatch and manual intervention is required (such as a configuration update or device reset). |
| ConfigMismatchesTemporary  | This counter represents the number of times that a phone that is running SIP was temporarily unable to register due to a configuration version mismatch between the TFTP server and Unified Communications Manager since the last restart of the Cisco CallManager Service. This counter increments each time Unified Communications Manager is able to resolve the mismatch automatically.                                                                               |
| DBTimeouts                 | This counter represents the number of new registrations that failed because a timeout occurred while the system was attempting to retrieve the device configuration from the database.                                                                                                                                                                                                                                                                                    |
| NewRegAccepted             | This counter represents the total number of new REGISTRATION requests that have been removed from the NewRegistration queue and processed since the last restart of the Cisco CallManager Service.                                                                                                                                                                                                                                                                        |
| NewRegQueueSize            | This counter represents the number of REGISTRATION requests that are currently on the NewRegistration queue. The system places REGISTRATION requests that are received from devices that are not currently registered on this queue before they are processed.                                                                                                                                                                                                            |
| NewRegRejected             | This counter represents the total number of new REGISTRATION requests that were rejected with a 486 Busy Here response and not placed on the NewRegistration queue since the last restart of the Cisco CallManager Service. The system rejects REGISTRATION requests if the NewRegistration queue exceeds a programmed size.                                                                                                                                              |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TokensAccepted    | This counter represents the total number of token requests that have been granted since the last Unified Communications Manager restart. Unified Communications Manager grants tokens as long as the number of outstanding tokens remains below the number that is specified in the Cisco CallManager service parameter Maximum Phone Fallback Queue Depth.                                                             |
| TokensOutstanding | This counter represents the number of devices that have been granted a token but have not yet registered. The system requires that devices that are reconnecting to a higher priority Unified Communications Manager server be granted a token before registering. Tokens protect Unified Communications Manager from being overloaded with registration requests when it comes back online after a failover situation. |
| TokensRejected    | This counter represents the total number of token requests that have been rejected since the last Unified Communications Manager restart. Unified Communications Manager will reject token request if the number of outstanding tokens is greater than the number that is specified in the Cisco CallManager service parameter Maximum Phone Fallback Queue Depth.                                                      |

## Cisco SW Conf Bridge Device

The Cisco SW Conference Bridge Device object provides information about registered Cisco software conference bridge devices. The following table contains information on the Cisco software conference bridge device counters.

**Table 74: Cisco SW Conf Bridge Device**

| Counters       | Counter Description                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutOfResources | This counter represents the total number of times that an attempt was made to allocate a conference resource from a SW conference device and failed because all resources were already in use. |
| ResourceActive | This counter represents the number of resources that are currently in use (active) for a SW conference device. One resource represents one stream.                                             |

| Counters              | Counter Description                                                                                                                                                                                                                                               |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResourceAvailable     | This counter represents the total number of resources that are not active and are still available to be used now for a SW conference device. One resource represents one stream.                                                                                  |
| ResourceTotal         | This counter represents the total number of conference resources that a SW conference device provides. One resource represents one stream. This counter equals the sum of the ResourceAvailable and ResourceActive counters.                                      |
| SWConferenceActive    | This counter represents the number of software-based conferences that are currently active (in use) on a SW conference device.                                                                                                                                    |
| SWConferenceCompleted | This counter represents the total number of conferences that have been allocated and released on a SW conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge. |

## Cisco Telepresence MCU Conference Bridge Device

The Cisco Telepresence MCU Conference Bridge Device provides information about registered MCU conference bridge devices. The following table contains information about the Cisco Telepresence MCU Conference Bridge Device counters.

*Table 75: Cisco Telepresence MCU Conference Bridge Device*

| Counters             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ConferencesActive    | This counter represents the total number of active conferences on all Cisco Telepresence MCU conference bridge devices that are registered with Unified Communications Manager.                                                                                                                                                                                                                     |
| ConferencesCompleted | This counter represents the total number of conferences that used a Cisco Telepresence MCU conference bridge allocated from Unified Communications Manager and completed, implying that the conference bridge was allocated and released. A conference is activated when the first call is connected to the bridge. The conference is completed when the last call is disconnected from the bridge. |

| Counters             | Counter Description                                                                                                                                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HttpConnectionErrors | This counter represents the total number of times Unified Communications Manager attempted to create HTTP connections to Cisco Telepresence MCU conference bridge device, and failed due to connection errors on the Cisco Telepresence MCU conference bridge side.                                      |
| HttpNon200OKResponse | This counter represents the total number of times Unified Communications Manager received a non 200 OK HTTP Response from Cisco Telepresence MCU conference bridge, for any HTTP query sent.                                                                                                             |
| OutOfResources       | This counter represents the total number of times Unified Communications Manager attempted to allocate a conference resource from Cisco Telepresence MCU conference bridge device and failed. For example, the attempt to allocate a conference resource fails, if all the resources are already in use. |

## Cisco TFTP Server

The Cisco Trivial File Transfer Protocol (TFTP) Server object provides information about the CiscoTFTP server. The following table contains information about Cisco TFTP server counters.

**Table 76: Cisco TFTP Server**

| Counters         | Counter Description                                                                                                                                                                                                                                                                                                         |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BuildAbortCount  | This counter represents the number of times that the build process aborted when it received a Build all request. This counter increases when building of device/unit/softkey/dial rules gets aborted as a result of group level change notifications.                                                                       |
| BuildCount       | This counter represents the number of times since the TFTP service started that the TFTP server has built all the configuration files in response to a database change notification that affects all devices. This counter increases by one every time the TFTP server performs a new build of all the configuration files. |
| BuildDeviceCount | This counter represents the number of devices that were processed in the last build of all the configuration files. This counter also updates while processing device change notifications. The counter increases when a new device is added and decreases when an existing device is deleted.                              |

| Counters                    | Counter Description                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BuildDialruleCount          | This counter represents the number of dial rules that were processed in the last build of the configuration files. This counter also updates while processing dial rule change notifications. The counter increases when a new dial rule is added and decreases when an existing dial rule is deleted.                                       |
| BuildDuration               | This counter represents the time in seconds that it took to build the last configuration files.                                                                                                                                                                                                                                              |
| BuildSignCount              | This counter represents the number of security-enabled phone devices for which the configuration file was digitally signed with the Unified Communications Manager server key in the last build of all the configuration files. This counter also updates while processing security-enabled phone device change notifications.               |
| BuildSoftKeyCount           | This counter represents the number of softkeys that were processed in the last build of the configuration files. This counter increments when a new softkey is added and decrements when an existing softkey is deleted.                                                                                                                     |
| BuildUnitCount              | This counter represents the number of gateways that were processed in the last build of all the configuration files. This counter also updates while processing unit change notifications. The counter increases when a new gateway is added and decreases when an existing gateway is deleted.                                              |
| ChangeNotifications         | This counter represents the total number of all the Unified Communications Manager database change notifications that the TFTP server received. Each time that a device configuration is updated in Unified Communications Manager, the TFTP server gets sent a database change notification to rebuild the XML file for the updated device. |
| DeviceChangeNotifications   | This counter represents the number of times that the TFTP server received database change notification to create, update, or delete configuration files for devices.                                                                                                                                                                         |
| DialruleChangeNotifications | This counter represents the number of times that the TFTP server received database change notification to create, update, or delete configuration files for dial rules.                                                                                                                                                                      |
| EncryptCount                | This counter represents the number of configuration files that were encrypted. This counter gets updated each time a configuration file is successfully encrypted                                                                                                                                                                            |

| Counters              | Counter Description                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GKFoundCount          | This counter represents the number of GK files that were found in the cache. This counter gets updated each time a GK file is found in the cache                                                                                                                                                                                                                                                             |
| GKNotFoundCount       | This counter represents the number of GK files that were not found in the cache. This counter gets updated each time a request to get a GK file results in the cache not finding it                                                                                                                                                                                                                          |
| HeartBeat             | This counter represents the heartbeat of the TFTP server. This incremental count indicates that the TFTP server is up and running. If the count does not increase, this means that the TFTP server is down.                                                                                                                                                                                                  |
| HttpConnectRequests   | This counter represents the number of clients that are currently requesting the HTTP GET file request.                                                                                                                                                                                                                                                                                                       |
| HttpRequests          | This counter represents the total number of file requests (such as requests for XML configuration files, phone firmware files, audio files, and so on.) that the HTTP server handled. This counter represents the sum total of the following counters since the HTTP service started: RequestsProcessed, RequestsNotFound, RequestsOverflow, RequestsAborted, and RequestsInProgress.                        |
| HttpRequestsAborted   | This counter represents the total number of HTTP requests that the HTTP server. canceled (aborted) unexpectedly. Requests could get aborted if the requesting device cannot be reached (for instance, the device lost power) or if the file transfer was interrupted due to network connectivity problems.                                                                                                   |
| HttpRequestsNotFound  | This counter represents the total number of HTTP requests where the requested file was not found. When the HTTP server does not find the requested file, a message gets sent to the requesting device.                                                                                                                                                                                                       |
| HttpRequestsOverflow  | This counter represents the total number of HTTP requests that were rejected when the maximum number of allowable client connections was reached. The requests may have arrived while the TFTP server was building the configuration files or because of some other resource limitation. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets the maximum number of allowable connections. |
| HttpRequestsProcessed | This counter represents the total number of HTTP requests that the HTTP server. successfully processed.                                                                                                                                                                                                                                                                                                      |

| Counters           | Counter Description                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HttpServedFromDisk | This counter represents the number of requests that the HTTP server completed with the files that are on disk and not cached in memory.                                                                                                                                                                                                                                               |
| LDFoundCount       | This counter represents the number of LD files that were found in the cache. This counter gets updated each time a LD file is found in cache memory.                                                                                                                                                                                                                                  |
| LDNotFoundCount    | This counter represents the number of LD files that were not found in cache memory. This counter gets updated each time a request to get an LD file results in the cache not finding it.                                                                                                                                                                                              |
| MaxServingCount    | This counter represents the maximum number of client connections that the TFTP can serve simultaneously. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets this value.                                                                                                                                                                                           |
| Requests           | This counter represents the total number of file requests (such as requests for XML configuration files, phone firmware files, audio files, and so on.) that the TFTP server handles. This counter represents the sum total of the following counters since the TFTP service started: RequestsProcessed, RequestsNotFound, RequestsOverflow, RequestsAborted, and RequestsInProgress. |
| RequestsAborted    | This counter represents the total number of TFTP requests that the TFTP server canceled (aborted) unexpectedly. Requests could be aborted if the requesting device cannot be reached (for instance, the device lost power) or if the file transfer was interrupted due to network connectivity problems.                                                                              |
| RequestsInProgress | This counter represents the number of file requests that the TFTP server currently is processing. This counter increases for each new file request and decreases for each file request that is completed. This counter indicates the current load of the TFTP server.                                                                                                                 |

| Counters             | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RequestsNotFound     | This counter represents the total number of TFTP requests for which the requested file was not found. When the TFTP server does not find the requested file, a message gets sent to the requesting device. If this counter increments in a cluster that is configured as secure, this event usually indicates an error condition. If, however, the cluster is configured as non-secure, it is normal for the CTL file to be absent (not found), which results in a message being sent to the requesting device and a corresponding increment in this counter. For non-secure clusters, then, this normal occurrence does not represent an error condition. |
| RequestsOverflow     | This counter represents the total number of TFTP requests that were rejected because the maximum number of allowable client connections was exceeded, because requests arrived while the TFTP server was building the configuration files, or because of some other resource limitation. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets the maximum number of allowable connections.                                                                                                                                                                                                                                               |
| RequestsProcessed    | This counter represents the total number of TFTP requests that the TFTP server successfully processed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| SegmentsAcknowledged | This counter represents the total number of data segments that the client devices acknowledged. Files get sent to the requesting device in data segments of 512 bytes, and for each 512-byte segment, the device sends the TFTP server an acknowledgment message. Each additional data segment gets sent upon receipt of the acknowledgment for the previous data segment until the complete file successfully gets transmitted to the requesting device.                                                                                                                                                                                                  |
| SegmentsFromDisk     | This counter represents the number of data segments that the TFTP server reads from the files on disk, while serving files.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SegmentSent          | This counter represents the total number of data segments that the TFTP server sent. Files get sent to the requesting device in data segments of 512 bytes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SEPFoundCount        | This counter represents the number of SEP files that were successfully found in the cache. This counter gets updated each time that a SEP file is found in the cache.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Counters                   | Counter Description                                                                                                                                                                                 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SEPNotFoundCount           | This counter represents the number of SEP files that were not found in the cache. This counter gets updated each time that a request to get a SEP file produces a not found in cache memory result. |
| SIPFoundCount              | This counter represents the number of SIP files that were successfully found in the cache. This counter gets updated each time that a SIP file is found in the cache                                |
| SIPNotFoundCount           | This counter represents the number of SIP files that were not found in the cache. This counter gets updated each time that a request to get a SIP file produces a not found in cache memory result. |
| SoftkeyChangeNotifications | This counter represents the number of times that the TFTP server received database change notification to create, update, or delete configuration files for softkeys.                               |
| UnitChangeNotifications    | This counter represents the number of times that the TFTP server received database change notification to create, update, or delete gateway-related configuration files.                            |

## Cisco Transcode Device

The Cisco Transcode Device object provides information about registered Cisco transcoding devices. The following table contains information on Cisco transcoder device counters.

**Table 77: Cisco Transcode Device**

| Counters          | Counter Description                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OutOfResources    | This counter represents the total number of times that an attempt was made to allocate a transcoder resource from a transcoder device and failed; for example, because all resources were already in use. |
| ResourceActive    | This counter represents the number of transcoder resources that are currently in use (active) for a transcoder device.<br><br>Each transcoder resource uses two streams.                                  |
| ResourceAvailable | This counter represents the total number of resources that are not active and are still available to be used now for a transcoder device.<br><br>Each transcoder resource uses two streams.               |

| Counters      | Counter Description                                                                                                                                                                   |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResourceTotal | This counter represents the total number of transcoder resources that a transcoder device provided. This counter equals the sum of the counters ResourceActive and ResourceAvailable. |

## Cisco Video Conference Bridge

The Cisco Video Conference Bridge object provides information about registered Cisco video conference bridge devices. The following table contains information on Cisco video conference bridge device counters.

**Table 78: Cisco Video Conference Bridge**

| Counters             | Counter Description                                                                                                                                                                                                                                                                         |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ConferencesActive    | This counter represents the total number of video conferences that are currently active (in use) on a video conference bridge device. The system specifies a conference as active when the first call connects to the bridge.                                                               |
| ConferencesAvailable | This counter represents the number of video conferences that are not active and are still available on a video conference device.                                                                                                                                                           |
| ConferencesCompleted | This counter represents the total number of video conferences that have been allocated and released on a video conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.                  |
| ConferencesTotal     | This counter represents the total number of video conferences that are configured for a video conference device.                                                                                                                                                                            |
| OutOfConferences     | This counter represents the total number of times that an attempt was made to initiate a video conference from a video conference device and failed because the device already had the maximum number of active conferences that is allowed (as specified by the TotalConferences counter). |
| OutOfResources       | This counter represents the total number of times that an attempt was made to allocate a conference resource from a video conference device and failed, for example, because all resources were already in use.                                                                             |
| ResourceActive       | This counter represents the total number of resources that are currently active (in use) on a video conference bridge device. One resource gets used per participant.                                                                                                                       |

| Counters          | Counter Description                                                                                                                                                                   |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ResourceAvailable | This counter represents the total number of resources that are not active and are still available on a device to handle additional participants for a video conference bridge device. |
| ResourceTotal     | This counter represents the total number of resources that are configured on a video conference bridge device. One resource gets used per participant.                                |

## Cisco Web Dialer

The Cisco WebDialer object provides information about the Cisco Web Dialer application and the Redirector servlet. The following table contains information on the CiscoWebDialer counters.

**Table 79: Cisco Web Dialer**

| Counters                     | Counter Description                                                                                                                 |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| CallsCompleted               | This counter represents the number of Make Call and End Call requests that the Cisco Web Dialer application successfully completed. |
| CallsFailed                  | This counter represents the number of Make Call and End Call requests that were unsuccessful.                                       |
| RedirectorSessionsHandled    | This counter represents the total number of HTTP sessions that the Redirector servlet handled since the last service startup.       |
| RedirectorSessionsInProgress | This counter represents the number of HTTP sessions that are currently being serviced by the Redirector servlet.                    |
| RequestsCompleted            | This counter represents the number of Make Call and End Call requests that the WebDialer servlet has successfully completed.        |
| RequestsFailed               | This counter represents the number of Make Call and End Call requests that failed.                                                  |
| SessionsHandled              | This counter represents the total number of CTI sessions that the Cisco Web Dialer servlet handled since the last service startup.  |
| SessionsInProgress           | This counter represents the number of CTI sessions that the Cisco Web Dialer servlet is currently servicing.                        |

## Cisco WSM Connector

The WSM object provides information on WSMConnectors that are configured on Unified Communications Manager. Each WSMConnector represents a physical Motorola WSM device. The following table contains information on the CiscoWSM Connector counters.

**Table 80: Cisco WSM Connector**

| Counters        | Counter Description                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsActive     | This counter represents the number of calls that are currently active (in use) on the WSMConnector device.                                                                                                                                               |
| CallsAttempted  | This counter represents the number of calls that have been attempted on the WSMConnector device, including both successful and unsuccessful call attempts.                                                                                               |
| CallsCompleted  | This counter represents the number of calls that are connected (a voice path was established) through the WSMConnector device. The counter increments when the call terminates.                                                                          |
| CallsInProgress | This counter represents the number of calls that are currently in progress on the WSMConnector device. This includes all active calls. When the number of CallsInProgress equals the number of CallsActive, this indicates that all calls are connected. |
| DMMSRegistered  | This counter represents the number of DMMS subscribers that are registered to the WSM.                                                                                                                                                                   |

## IME Client

The IME Client object provides information about the Cisco IME client on the Unified Communications Manager server. The following table contains information on the Cisco IME client counters.

**Table 81: Cisco IME Client**

| Counters      | Counter Description                                                                                                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsAccepted | This counter indicates the number of Cisco IME calls that the Unified Communications Manager received successfully and that the called party answered, resulting in an IP call. |

| Counters                | Counter Description                                                                                                                                                                                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CallsAttempted          | This counter indicates the number of calls that the Unified Communications Manager received through Cisco IME. This number includes accepted calls, failed calls, and busy, no-answer calls. The counter increments each time that Unified Communications Manager receives a call through Cisco IME.                           |
| CallsReceived           | This counter indicates the number of calls that Unified Communications Manager receives through Cisco IME. This number includes accepted calls, failed calls, and busy, no-answer calls. The counter increments on call initiation.                                                                                            |
| CallsSetup              | This counter indicates the number of Cisco IME calls that Unified Communications Manager placed successfully and that the remote party answered, resulting in an IP call.                                                                                                                                                      |
| DomainsUnique           | This counter indicates the number of unique domain names of peer enterprises that the Cisco IME client discovered. The counter serves as an indicator of overall system usage.                                                                                                                                                 |
| FallbackCallsFailed     | This counter indicates the total number of failed fallback attempts.                                                                                                                                                                                                                                                           |
| FallbackCallsSuccessful | This counter indicates the total number of Cisco IME calls that have fallen back to the PSTN mid-call due to a quality problem. The counter includes calls initiated and calls received by this Unified Communications Manager.                                                                                                |
| IMESetupsFailed         | This counter indicates the total number of call attempts for which a Cisco IME route was available but that were set up through the PSTN due to a failure to connect to the target over the IP network.                                                                                                                        |
| RoutesLearned           | This counter indicates the total number of distinct phone numbers that the Cisco IME has learned and that are present as routes in the Unified Communications Manager routing tables. If this number grows too large, the server may exceed the per-cluster limit, and you may need to add additional servers to your cluster. |

| Counters          | Counter Description                                                                                                                                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RoutesPublished   | This counter indicates the total number of DIDs that were published successfully into the IME distributed cache across all Cisco IME client instances. The counter provides a dynamic measurement that gives you an indication of your own provisioned usage and a sense of how successful the system has been in storing the DIDs in the network. |
| RoutesRejected    | This counter indicates the number of learned routes that were rejected because the administrator restricted the particular number or domain. This counter provides an indication of the number of cases where a VoIP call cannot happen in the future because of the blocked validation.                                                           |
| VCRUploadRequests | This counter indicates the number of voice call record (VCR) upload requests that the Unified Communications Manager has sent to the Cisco IME server to be stored in the IME distributed cache.                                                                                                                                                   |

## IME Client Instance

The IME Client Instance object provides information about the Cisco IME client instance on the Unified Communications Manager server. The following table contains information on the Cisco IME client instance counters.

Table 82: IME Client

| Counters         | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IMEServiceStatus | <p>This counter indicates the overall health of the connection to the Cisco IME services for a particular Cisco IME client instance (Unified Communications Manager). The following values may display for the counter:</p> <ul style="list-style-type: none"> <li>• 0—Indicates an unknown state (which may mean that the Cisco IME service is not active).<br/>If the value specifies 0, an alert gets generated once per hour while the connection remains in the unknown state.</li> <li>• 1—Indicates a healthy state; that is, the Cisco IME service is active, and the Unified Communications Manager has successfully established a connection to its primary and backup servers for the Cisco IME client instance, if configured.</li> <li>• 2—Indicates an unhealthy state; that is, the Cisco IME service is active, but the Unified Communications Manager has not successfully established a connection to its primary and backup servers for the Cisco IME client instance, if configured.</li> </ul> |

## SAML Single Sign-On

The following table contains information about SAML Single Sign-On counters.

Table 83: SAML Single Sign-On Counters

| Counter        | Counter description                                                                                        |
|----------------|------------------------------------------------------------------------------------------------------------|
| SAML_REQUESTS  | This counter represents the total number of SAML requests sent to the configured Identity Provider.        |
| SAML_RESPONSES | This counter represents the total number of SAML responses received from the configured Identity Provider. |

Additionally, the following SAML SSO counters are also displayed in the Unified RTMT but they are not functional in Unified Communications Manager 10.0(1):

- OAUTH\_TOKENS\_ISSUED
- OAUTH\_TOKENS\_ACTIVE
- OAUTH\_TOKENS\_VALIDATED

- OAUTH\_TOKENS\_EXPIRED
- OAUTH\_TOKENS\_REVOKED

## IM and Presence Service Counters

### Cisco Client Profile Agent

This object provides information about the Cisco Client Profile (SOAP) interface.

The following table contains information about client profile agent counters.

**Table 84: Cisco Client Profile Agent counters**

| Counters                 | Counter Descriptions                                                                                                                         |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| SoapCrossClusterRedirect | This counter represents the number of login requests received by the Cisco SOAP interface which were redirected to a node in a peer cluster. |
| SoapLoginFailures        | This counter represents the number of failed login requests received by the Cisco SOAP interface.                                            |
| SoapNodeRedirect         | This counter represents the number of login requests received by the Cisco SOAP interface which were redirected to another node.             |

### Cisco Presence Engine

The Cisco Presence Engine object provides information about the SIP messages that the Presence Engine receives and sends.

The following table contains information about Cisco Presence Engine performance counters.

**Table 85: Cisco Presence Engine counters**

| Counters           | Counter Description                                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Subscribe</b>   |                                                                                                                                                            |
| SubscribesReceived | This counter represents the number of SUBSCRIBE messages received by the Presence Engine, including initial subscribes, refreshes, fetches & unsubscribes. |
| SubscribesSent     | This counter represents the total number of SUBSCRIBE messages sent from the Presence Engine.                                                              |

| <b>Counters</b>                        | <b>Counter Description</b>                                                                                                    |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| SubscribesReceivedPresence             | This counter represents the number of SUBSCRIBE messages received by the Presence Engine with an event type of presence.      |
| SubscribesReceivedProfileConfig        | This counter represents the number of SUBSCRIBE messages received by the Presence Engine with an event type of profileconfig. |
| SubscribesInitial                      | This counter represents the number of initial non-calendar SUBSCRIBE messages received.                                       |
| SubscribesRefresh                      | This counter represents the number of non-calendar refresh SUBSCRIBE messages received.                                       |
| SubscribesFetch                        | This counter represents the number of non-calendar fetch SUBSCRIBE messages received.                                         |
| SubscribesRemove                       | This counter represents the number of non-calendar remove SUBSCRIBE messages received.                                        |
| ActiveSubscriptions                    | This counter represents the number of non-calendar subscriptions that are currently active.                                   |
| SubscribesRedirect3xx                  | This counter represents the number of SUBSCRIBE messages redirected with a 3xx response.                                      |
| SubscribesRejected4xx                  | This counter represents the number of SUBSCRIBE messages rejected with a 4xx response.                                        |
| SubscribesRejected5xx                  | This counter represents the number of SUBSCRIBE messages rejected with a 5xx response.                                        |
| SubscribesRejected6xx                  | This counter represents the number of SUBSCRIBE messages rejected with a 6xx response.                                        |
| SubscribesRejectedWith503              | This counter represents the number of SUBSCRIBE messages rejected with a 503 responses.                                       |
| SubscriptionActiveSentForeign          | This counter represents the number of active subscriptions sent by the Presence Engine to a foreign domain.                   |
| SubscriptionActiveReceivedFrom Foreign | This counter represents the number of active subscriptions received by the Presence Engine from a foreign domain.             |
| WatcherInfoPresenceSubscriptions       | This counter represents the number of watcher-info presence subscriptions.                                                    |
| <b>Calendar</b>                        |                                                                                                                               |
| ActiveCalendarSubscriptions            | This counter represents the number of calendar subscriptions that are currently active.                                       |

| <b>Counters</b>               | <b>Counter Description</b>                                                                                               |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| SubscribesSentCalendarInitial | This counter represents the number of initial SUBSCRIBE messages sent by the Presence Engine to the calendar server.     |
| SubscribesSentCalendarRefresh | This counter represents the number of refresh SUBSCRIBE messages sent by the Presence Engine to the calendar server.     |
| SubscribesSentCalendarRetry   | This counter represents the number of retry SUBSCRIBE messages sent by the Presence Engine to the calendar server.       |
| SubscribesReceivedCalendar    | This counter represents the number of SUBSCRIBE messages received by the Presence Engine with an event type of calendar. |
| NotifiesReceivedCalendar      | This counter represents the number of NOTIFY messages by the Presence Engine with an event type of calendar.             |
| NotifiesSentCalendar          | This counter represents the number of NOTIFY messages sent from the Presence Engine with an event type of calendar.      |
| MeetingsStarted               | This counter represents the number of meetings that were started through calendar integration.                           |
| MeetingsEnded                 | This counter represents the number of meetings that were ended through calendar integration.                             |
| <b>Publish</b>                |                                                                                                                          |
| PublicationsProcessed         | This counter represents the number of successful publications processed by the Presence Engine.                          |
| PublishInitial                | This counter represents the number of initial PUBLISH messages received.                                                 |
| PublishRefresh                | This counter represents the number of refresh PUBLISH messages received.                                                 |
| PublishModify                 | This counter represents the number of modify PUBLISH messages received.                                                  |
| PublishRemove                 | This counter represents the number of remove PUBLISH messages received.                                                  |
| <b>Notify</b>                 |                                                                                                                          |
| NotificationsInQueue          | This counter represents the number of the existing number of outgoing NOTIFY messages queued by the Presence Engine.     |

| <b>Counters</b>                  | <b>Counter Description</b>                                                                                               |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| NotifiesSent                     | This counter represents the number of successful NOTIFY messages sent out by the Presence Engine.                        |
| NotifiesReceived                 | This counter represents the number of NOTIFY messages received by the Presence Engine from backend subscriptions.        |
| NotifiesSentPresence             | This counter represents the number of NOTIFY messages sent from the Presence Engine with an event type of presence.      |
| NotifiesSentProfileConfig        | This counter represents the number of NOTIFY messages sent from the Presence Engine with an event type of profileconfig. |
| NotifiesRetried                  | This counter represents the number of NOTIFY messages sent that were retried.                                            |
| NotifiesTimeouts                 | This counter represents the number of NOTIFY messages that timed out.                                                    |
| NotifiesRejected3xx              | This counter represents the number of NOTIFY messages rejected with a 3xx response.                                      |
| NotifiesRejected4xx              | This counter represents the number of NOTIFY messages rejected with a 4xx response.                                      |
| NotifiesRejected5xx              | This counter represents the number of NOTIFY messages rejected with a 5xx response.                                      |
| NotifiesRejected503              | This counter represents the number of NOTIFY messages rejected with a 503 response.                                      |
| NotifiesRejected6xx              | This counter represents the number of NOTIFY messages rejected with a 6xx response.                                      |
| WatcherInfoPresenceNotifications | This counter represents the number of watcher-info presence notifications.                                               |
| WatcherInfoPresenceSubscriptions | This counter represents the number of watcher-info presence subscriptions.                                               |
| <b>HighWaterMark</b>             |                                                                                                                          |
| HighWaterMark                    | This counter represents the number of times the load high water mark has been reached.                                   |
| <b>Active Views</b>              |                                                                                                                          |
| ActiveViews                      | This counter represents the number of Active Views in the Presence Engine.                                               |
| <b>Active Resources</b>          |                                                                                                                          |

| <b>Counters</b>               | <b>Counter Description</b>                                                                                  |
|-------------------------------|-------------------------------------------------------------------------------------------------------------|
| ActiveResources               | This counter represents the number of active resources in the Presence Engine.                              |
| <b>JSM</b>                    |                                                                                                             |
| ActiveJsmSessions             | This counter represents the number of client emulation sessions between the Presence Engine and JSM.        |
| <b>XMPP</b>                   |                                                                                                             |
| XMPPPresenceReceived          | This counter represents the number of XMPP presence packets received.                                       |
| XMPPPresenceFiltered          | This counter represents the number of XMPP presence packets received that were filtered.                    |
| XMPPPresenceNotificationsSent | This counter represents the number of composed presence updates sent to JSM.                                |
| XMPPIMReceived                | This counter represents the number of XMPP Instant Message packets received by the Presence Engine.         |
| XMPPIMSent                    | This counter represents the number of XMPP Instant Message packets sent by the Presence Engine.             |
| XMPPIMTcInviteErrors          | This counter represents the number of XMPP TC Invites rejected by the Presence Engine.                      |
| XMPPIMResourceNotFoundErrors  | This counter represents the number of XMPP Instant Message packets received for unregistered SIP resources. |
| XMPPIMIgnored                 | This counter represents the number of XMPP Instant Message packets dropped by the Presence Engine.          |
| XMPPIMGoneGenerated           | This counter represents the number of gone messages sent to the RFI on presence events.                     |
| RFIErrors                     | This counter represents the number of errors when sending XMPP messages to the RFI layer.                   |
| RFIMessageQueueSize           | This counter represents the current number of XMPP Messages that are queued as the RFI is PAUSED.           |
| <b>SIP</b>                    |                                                                                                             |
| SIPIMReceived                 | This counter represents the number of SIP Instant Message packets received by the Presence Engine.          |
| SIPIMSent                     | This counter represents the number of SIP Instant Message packets sent by the Presence Engine.              |

| <b>Counters</b>              | <b>Counter Description</b>                                                                                         |
|------------------------------|--------------------------------------------------------------------------------------------------------------------|
| SIPIMGoneGenerated           | This counter represents the number of gone messages sent to the Proxy on presence events.                          |
| SIPIMRetry                   | This counter represents the number of SIP Instant Message resent to the Proxy.                                     |
| SIPIMTimeout                 | This counter represents the number of SIP Instant Message packets that timed out when sending to the Proxy.        |
| SIPIMReject3xx               | This counter represents the number of 3xx errors when attempting to send SIP Instant Message packets to the Proxy. |
| SIPIMReject4xx               | This counter represents the number of 4xx errors when attempting to send SIP Instant Message packets to the Proxy. |
| SIPIMReject5xx               | This counter represents the number of 5xx errors when attempting to send SIP Instant Message packets to the Proxy. |
| SIPIMReject6xx               | This counter represents the number of 6xx errors when attempting to send SIP Instant Message packets to the Proxy. |
| ActiveIMSessions             | This counter represents the number of Active Instant Message sessions between SIP and XMPP.                        |
| <b>Roster Sync</b>           |                                                                                                                    |
| RosterSyncAddBuddySuccess    | This counter represents the number of successful add buddy requests processed by the Roster Sync Agent.            |
| RosterSyncAddBuddyFailure    | This counter represents the number of failed add buddy requests processed by the Roster Sync Agent.                |
| RosterSyncUpdateBuddySuccess | This counter represents the number of successful update buddy requests processed by the Roster Sync Agent.         |
| RosterSyncUpdateBuddyFailure | This counter represents the number of failed update buddy requests processed by the Roster Sync Agent.             |
| RosterSyncDeleteBuddySuccess | This counter represents the number of successful delete buddy requests processed by the Roster Sync Agent.         |
| RosterSyncDeleteBuddyFailure | This counter represents the number of failed delete buddy requests processed by the Roster Sync Agent.             |

| <b>Counters</b>               | <b>Counter Description</b>                                                                                 |
|-------------------------------|------------------------------------------------------------------------------------------------------------|
| RosterSyncSubscribeSuccess    | This counter represents the number of successful subscribe requests processed by the Roster Sync Agent.    |
| RosterSyncSubscribeFailure    | This counter represents the number of failed subscribe requests processed by the Roster Sync Agent.        |
| RosterSyncUnSubscribeSuccess  | This counter represents the number of successful unsubscribe requests processed by the Roster Sync Agent.  |
| RosterSyncUnSubscribeFailure  | This counter represents the number of failed unsubscribe requests processed by the Roster Sync Agent.      |
| PolicyUpdateSent              | This counter represents the number of privacy policy update sent to XCP.                                   |
| PolicyUpdateReceived          | This counter represents the number of privacy policy update received from XCP.                             |
| RosterSyncUnSubscribedSuccess | This counter represents the number of successful unsubscribed requests processed by the Roster Sync Agent. |
| RosterSyncUnSubscribedFailure | This counter represents the number of failed unsubscribed requests processed by the Roster Sync Agent.     |

## Cisco Server Recovery Manager

This object provides information about the Cisco Server Recovery Manager (SRM) state. The following table contains information about SRM counters.

**Table 86: Cisco Server Recovery Manager Counters**

| Counters | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SRMState | <p>This counter represents the state of the SRM.</p> <ul style="list-style-type: none"> <li>• 0 = Unknown</li> <li>• 1 = Initializing</li> <li>• 2 = Idle</li> <li>• 3 = Active Normal</li> <li>• 4 = Backup Activated</li> <li>• 5 = Taking Over</li> <li>• 6 = Taking Back</li> <li>• 7 = Failing Over</li> <li>• 8 = Failed Over</li> <li>• 9 = Failed Over Affected Service</li> <li>• 10 = Falling Back</li> <li>• 11 = Failed</li> <li>• 12 = Down State</li> </ul> |

## Cisco SIP Proxy

The following table contains information about Cisco SIP Proxy counters.

**Table 87: Proxy counters**

| Counters             | Counter Descriptions                                                              |
|----------------------|-----------------------------------------------------------------------------------|
| CTIGWConferenceReq   | This counter represents the number of conference call requests received by CTIGW. |
| CTIGWInboundCalls    | This counter represents the number of inbound calls received by CTIGW.            |
| CTIGWLineOpenRequest | This counter represents the number of LineOpen requests received by CTIGW.        |
| CTIGWMakeCallRequest | This counter represents the number of MakeCall requests received by CTIGW.        |

| Counters                      | Counter Descriptions                                                                                                             |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| CTIGWRefreshCount             | This counter represents the number of INVITE Refreshes received by the IM and Presence server that are sent from the MOC client. |
| CTIGWRetrieveReq              | This counter represents the number of retrieve call requests received by CTIGW.                                                  |
| CTIGWSip4XXRes                | This counter represents the number of SIP 4XX response sent by CTIGW.                                                            |
| CTIGWSip5XXRes                | This counter represents the number of SIP 5XX response sent by CTIGW.                                                            |
| CTIGWSSXrefReq                | This counter represents the number of single step transfer call requests received by CTIGW.                                      |
| CTIGWUsersAuthorized          | This counter represents the number of users authorized by CTIGW.                                                                 |
| CTIGWUsersCurrentlyAuthorized | This counter represents the number of users currently logged into MOC client for Remote Call Control.                            |
| CTIGWXrefReq                  | This counter represents the number of transfer call requests received by CTIGW.                                                  |
| HttpRequests                  | This counter represents the number of HTTP requests processed.                                                                   |
| IMCTRLActiveSessions          | This counter represents the current number of active federated IM sessions.                                                      |
| IMGWActiveSessions            | This counter represents the current number of active SIP XMPP IM gateway sessions being maintained by the proxy.                 |
| IMGWClientMessageSent         | This counter represents the current number of SIP Messages sent to SIP client from the XMPP IM gateway.                          |
| IMGWPeMessageReceived         | This counter represents the current number of SIP Messages received from the local PE by the XMPP IM gateway.                    |
| IMGWPeMessageSent             | This counter represents the current number of SIP Messages sent to the local PE for the XMPP IM gateway.                         |
| Ipc_Requests                  | This counter represents the number of IPC requests from the TCP process.                                                         |
| NumIdleSipdWorkers            | This counter represents the number of idle sipd worker processes at a current instance.                                          |

| Counters                        | Counter Descriptions                                                                                                |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------|
| NumSipdWorker                   | This counter represents the number of sipd worker processes at a current instance.                                  |
| Proxy_Due_Timer_Events          | This counter represents the number of past-due timer events that were queued.                                       |
| Proxy_Timer_Events              | This counter represents the number of expired timer events.                                                         |
| PWSAppUserLoginRequest          | This counter represents the number of Application User login requests received by the Presence Web Service Module.  |
| PWSAppUserLogoutRequest         | This counter represents the number of Application User logout requests received by the Presence Web Service Module. |
| PWSEndpointExpired              | This counter represents the number of subscriptions that expire before been refreshed.                              |
| PWSEndpointRefreshRequest       | This counter represents the number of Endpoint refresh requests received by the Presence Web Service Module.        |
| PWSEndUserLoginRequest          | This counter represents the number of End User login requests received by the Presence Web Service Module.          |
| PWSEndUserLogoutRequest         | This counter represents the number of End User logout requests received by the Presence Web Service Module.         |
| PWSGetPolledPresenceRequest     | This counter represents the number of GetPolledPresence requests received by the Presence Web Service Module.       |
| PWSGetSubscribedPresenceRequest | This counter represents the number of GetSubscribedPresence requests received by the Presence Web Service Module.   |
| PWSPresenceNotifies             | This counter represents the number of Presence Notifications sent by the Presence Web Service Module.               |
| PWSRegisterEndpointRequest      | This counter represents the number of Register Endpoint requests received by the Presence Web Service Module.       |
| PWSSetPresenceRequest           | This counter represents the number of SetPresence requests received by the Presence Web Service Module.             |

| Counters                     | Counter Descriptions                                                                                            |
|------------------------------|-----------------------------------------------------------------------------------------------------------------|
| PWSSipNotifies               | This counter represents the number of SIP Notifies received by the Presence Web Service Module.                 |
| PWSSipPublishRequests        | This counter represents the number of SIP Publish requests sent by the Presence Web Service Module.             |
| PWSSipSubscribeRequests      | This counter represents the number of SIP Subscribe requests sent by the Presence Web Service Module.           |
| PWSSipUnpublishRequests      | This counter represents the number of SIP Unpublish requests sent by the Presence Web Service Module.           |
| PWSSipUnsubscribeRequests    | This counter represents the number of SIP Unsubscribe requests sent by the Presence Web Service Module.         |
| PWSSubscribeExpired          | This counter represents the number of endpoint registrations that expire before been refreshed.                 |
| PWSSubscribeRefreshRequest   | This counter represents the number of Subscribe refresh requests received by the Presence Web Service Module.   |
| PWSSubscribeRequest          | This counter represents the number of Subscribe requests received by the Presence Web Service Module.           |
| PWSUnregisterEndpointRequest | This counter represents the number of Unregister Endpoint requests received by the Presence Web Service Module. |
| PWSUnsubscribeRequest        | This counter represents the number of Unsubscribe requests received by the Presence Web Service Module.         |
| ServerLoadStatus             | This counter represents the Server load status on scale of 0 (idle) to 3 (swamped).                             |
| SIPClientImMessage           | This counter represents the number of SIP Client Instant Messages received by the proxy.                        |
| SIPClientRegistered          | This counter represents the number of SIP Client REGISTER requests received by the proxy.                       |
| SIPClientRegisterFailed      | This counter represents the number of failed SIP Client REGISTER requests received by the proxy.                |
| Sip_Tcp_Requests             | This counter represents the number of sip requests received over tcp transport.                                 |
| Sip_Udp_Requests             | This counter represents the number of sip requests received over udp transport.                                 |

| <b>Counters</b>             | <b>Counter Descriptions</b>                                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------|
| SIPInviteRequestIn          | This counter represents the number of INVITE requests received by the proxy.                                          |
| SIPInviteRequestInForeign   | This counter represents the current number of INVITE requests received by the proxy across the enterprise boundary.   |
| SIPInviteRequestOut         | This counter represents the number of INVITE requests sent by the proxy.                                              |
| SIPInviteRequestOutForeign  | This counter represents the current number of INVITE requests sent by the proxy across the enterprise boundary.       |
| SIPMessageRequestIn         | This counter represents the number of MESSAGE requests received by proxy.                                             |
| SIPMessageRequestInForeign  | This counter represents the current number of MESSAGE requests received by the proxy across the enterprise boundary.  |
| SIPMessageRequestOutForeign | This counter represents the current number of MESSAGE requests sent by the proxy across the enterprise boundary.      |
| SIPNotifyRequestIn          | This counter represents the number of NOTIFY requests received by the proxy.                                          |
| SIPNotifyRequestInForeign   | This counter represents the current number of NOTIFY requests received by the proxy across the enterprise boundary.   |
| SIPNotifyRequestOutForeign  | This counter represents the current number of NOTIFY requests sent by the proxy across the enterprise boundary.       |
| SIPRegisterRequestIn        | This counter represents the number of REGISTER requests received by the proxy.                                        |
| SIPRequestInForeign         | This counter represents the current number of requests received directly by the proxy across the enterprise boundary. |
| SIPRequestOutForeign        | This counter represents the current number of requests sent directly by proxy across the enterprise boundary.         |
| SIPRetransmits              | This counter represents the number of retransmits executed by the proxy.                                              |
| SIPSubscribeRequestIn       | This counter represents the number of SUBSCRIBE requests received by the proxy.                                       |

| Counters                      | Counter Descriptions                                                                                                   |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------|
| SIPSubscribeRequestInForeign  | This counter represents the current number of SUBSCRIBE requests received by the proxy across the enterprise boundary. |
| SIPSubscribeRequestOutForeign | This counter represents the current number of SUBSCRIBE requests sent by the proxy across the enterprise boundary.     |

## Cisco XCP Auth Component

The following table contains information about Cisco XCP Authentication performance counters.

**Table 88: Cisco XCP Auth Component Counters**

| Counter                | Counter description                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------|
| SASLPlainSuccess       | This counter represents the total number of successful SASL plain authentication attempts.                        |
| SASLPlainFailed        | This counter represents the total number of failed SASL plain authentication attempts.                            |
| VtgTokenSuccess        | This counter represents the number of successful vtg-token authentication attempts.                               |
| VtgTokenFailed         | This counter represents the number of failed vtg-token authentication attempts.                                   |
| FailedLicense          | This counter represents the total number of failed authentication attempts due to no license.                     |
| FailedSASLCredentials  | This counter represents the total failed SASL plain authentication attempts due to invalid username and password. |
| FailedTokenCredentials | This counter represents the total failed vtg-token authentication attempts due to invalid username and password.  |

## Cisco XCP CM

The following table contains information about Cisco XCP Connection Manager (CM) performance counters.

**Table 89: Cisco XCP CM Counters**

| Counter            | Counter Description                                                                              |
|--------------------|--------------------------------------------------------------------------------------------------|
| CmConnectedSockets | This counter represents the number of connected sockets in the Web Connection Manager component. |

| Counter          | Counter Description                                                     |
|------------------|-------------------------------------------------------------------------|
| CmFailedRequests | This counter represents the total number of failed connection requests. |

## Cisco XCP Component Stanza Traffic

The following table provides information about Cisco XCP Component Stanza Traffic performance counters.

*Table 90: Cisco XCP Component Stanza Traffic Counters*

| Counter                       | Counter description                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------|
| CompStanzaBytesSent           | This counter represents the number of bytes sent on a per-component basis.                |
| CompStanzaBytesRecv           | This counter represents the number of bytes received on a per-component basis.            |
| CompStanzaErrorsRecv          | This counter represents the number of errors sent on a per-component basis.               |
| CompStanzaErrorsSent          | This counter represents the number of errors received on a per-component basis.           |
| CompStanzaPacketsDropped      | This counter represents the number of packets dropped on a per-component basis.           |
| CompStanzaStanzasSent         | This counter represents the number of stanzas sent on a per-component basis.              |
| CompStanzaStanzasRecv         | This counter represents the number of stanzas received on a per-component basis.          |
| CompStanzaMessagePacketsSent  | This counter represents the number of message packets sent on a per-component basis.      |
| CompStanzaMessagePacketsRecv  | This counter represents the number of message packets received on a per-component basis.  |
| CompStanzaPresencePacketsSent | This counter represents the number of presence packets sent on a per-component basis.     |
| CompStanzaPresencePacketsRecv | This counter represents the number of presence packets received on a per-component basis. |
| CompStanzaIQPacketsRecv       | This counter represents the number of IQ packets received on a per-component basis.       |
| CompStanzaIQPacketsSent       | This counter represents the number of IQ packets sent on a per-component basis.           |

## Cisco XCP JDS

The following table contains information about the Cisco XCP JDS performance counters.

**Table 91: Cisco XCP JDS Counters**

| Counter            | Counter description                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------|
| JdsLDAPSuccess     | This counter represents the total number of successful LDAP searches.                                              |
| JdsLDAPFailed      | This counter represents the total number of failed LDAP searches.                                                  |
| JdsInvalidRequests | This counter represents the number of invalid LDAP search requests rejected by Cisco XCP JDS and not sent to LDAP. |

## Cisco XCP JSM

The following table contains information about the XCP JSM performance counters.

**Table 92: Cisco XCP JSM Counters**

| Counter        | Counter description                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JsmMessagesIn  | This counter represents the number of message stanzas received by the JSM component.                                                                                                                                                                                                                                                                                                                                           |
| JsmMessagesOut | This counter represents the number of message stanzas sent by the JSM component.                                                                                                                                                                                                                                                                                                                                               |
| JsmPresenceIn  | This component represents the number of presence stanzas received by the JSM component.                                                                                                                                                                                                                                                                                                                                        |
| JsmPresenceOut | This component represents the number of presence stanzas sent by the JSM component.                                                                                                                                                                                                                                                                                                                                            |
| JsmIMSessions  | This counter represents the total number of active JSM sessions on the IM and Presence service. On IM and Presence, the Presence Engine creates a JSM client emulation session for every licensed user at startup time. Additional JSM sessions are also created while users are signed in on their clients. Users may be signed in on multiple clients simultaneously resulting in multiple additional JSM sessions per user. |

| Counter                      | Counter description                                                                                                                                                                                                                                                                             |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JsmOnlineUsers               | This counter represents the number of users with one or more JSM sessions. On IM and Presence, the Presence Engine creates a JSM client emulation session for every licensed user. The value of this counter should therefore match the value of the Presence Engine ActiveJsmSessions counter. |
| JsmLoginRate                 | This counter represents the current login rate being tracked by the JSM component.                                                                                                                                                                                                              |
| JsmSuccessfulLogins          | This counter represents the total number of successful logins.                                                                                                                                                                                                                                  |
| JsmFailedLogins              | This counter is always 0 on IM and Presence. For details on failed login attempts, see the Cisco XCP Auth Component counters.                                                                                                                                                                   |
| JsmTotalMessagePackets       | This counter represents the total message packets processed by the JSM component.                                                                                                                                                                                                               |
| JsmTotalPresencePackets      | This counter represents the total presence packets processed by the JSM component.                                                                                                                                                                                                              |
| JsmTotalIQPackets            | This counter represents the total number of IQ packets processed by the JSM.                                                                                                                                                                                                                    |
| JsmMsgsInLastSlice           | This counter represents the total messages processed by the JSM component in last time slice.                                                                                                                                                                                                   |
| JsmAverageMessageSize        | This counter represents the average message size processed by the JSM component.                                                                                                                                                                                                                |
| JsmTotalStateChangePackets   | This counter is always set to 0 on IM and Presence and is reserved for future use.                                                                                                                                                                                                              |
| JsmStateChangePacketsInSlice | This counter is always set to 0 on IM and Presence and is reserved for future use.                                                                                                                                                                                                              |
| JsmAverageStateChangeSize    | This counter is always set to 0 on IM and Presence and is reserved for future use.                                                                                                                                                                                                              |

## Cisco XCP JSM IQ Namespaces

The following table contains information about the Cisco XCP JSM IQ Namespaces performance counters.

**Table 93: Cisco XCP JSM IQ Namespaces**

| Counter          | Counter description                                                                |
|------------------|------------------------------------------------------------------------------------|
| JSM IQ Namespace | This counter represents the number of IQ packets handles on a per-namespace basis. |

## Cisco XCP JSM Session

The following table contains information about the Cisco XCP JSM Session performance counters.

**Table 94: Cisco XCP JSM Session Counters**

| Counter               | Counter description                                                              |
|-----------------------|----------------------------------------------------------------------------------|
| JsmSessionIQIn        | This counter represents IQ packets received by JSM on a per-session basis.       |
| JsmSessionIQOut       | This counter represents IQ packets sent by JSM on a per-session basis.           |
| JsmSessionMessagesIn  | This counter represents message packets received by JSM on a per-session basis.  |
| JsmSessionMessagesOut | This counter represents message packets sent by JSM on a per-session basis.      |
| JsmSessionPresenceIn  | This counter represents presence packets received by JSM on a per-session basis. |
| JsmSessionPresenceOut | This counter represents presence packets sent by JSM on a per-session basis.     |
| JsmSessionRosterSize  | This counter represents the size of the user's roster on a per-session basis.    |

## Cisco XCP MA Basic

The following table contains information about the Cisco XCP Message Archiver Basic performance counters.

**Table 95: Cisco XCP MA Basic Counters**

| Counter             | Counter description                                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ReceivedPackets     | This counter represents the total number of packets received by IM and Presence and archived by the Message Archiver component. |
| SentPackets         | This counter represents the total number of packets sent from IM and Presence and archived by the Message Archiver component.   |
| SuccessfulDBWriters | This counter represents the confirmed IMs records written to the Database.                                                      |
| FailedDBWriters     | This counter represents the failed attempts to write to the Database.                                                           |

| Counter        | Counter description                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| PacketsDropped | This counter represents the number of packets Message Archiver receives but are not written to the Database, for example, isTyping packets. |
| DBQueueSize    | This counter represents the number of packets that Message Archiver has queued pending write to Database.                                   |

## Cisco XCP Router

The following table contains information about the Cisco XCP Router performance counters.

*Table 96: Cisco XCP Router Counters*

| Counter             | Counter description                                                                         |
|---------------------|---------------------------------------------------------------------------------------------|
| RouterNormalPackets | This counter represents the total number of normal packets handled by the Cisco XCP router. |
| RouterXdbPackets    | This counter represents the total number of xdb packets handled by the Cisco XCP router.    |
| RouterRoutePackets  | This counter represents the total number of route packets handled by the Cisco XCP router.  |
| RouterLogPackets    | This counter represents the total number of log packets handled by the Cisco XCP router.    |

## Cisco XCP SIP S2S

The following table contains information about Cisco XCP SIP Server-to-Server (S2S) performance counters.

*Table 97: Cisco SIP S2S counters*

| Counter                | Counter description                                                            |
|------------------------|--------------------------------------------------------------------------------|
| SIPS2SIncomingDomains  | This counter represents the total foreign domains with incoming subscriptions. |
| SIPS2SOutgoingDomains  | This counter represents the total foreign domains with outgoing subscriptions. |
| SIPS2SSubscriptionsOut | This counter represents the total active SIP outgoing subscriptions.           |
| SIPS2SSubscriptionsIn  | This counter represents the total active SIP incoming subscriptions.           |

| Counter                    | Counter description                                                   |
|----------------------------|-----------------------------------------------------------------------|
| SIPS2SSubscriptionsPending | This counter represents the total pending SIP outgoing subscriptions. |
| SIPS2SNotifyIn             | This counter represents the total SIP NOTIFY messages received.       |
| SIPS2SNotifyOut            | This counter represents the total SIP NOTIFY messages sent.           |
| SIPS2SMessageIn            | This counter represents the total SIP MESSAGE messages received.      |
| SIPS2SMessageOut           | This counter represents the total SIP MESSAGE messages sent.          |
| SIPS2SByeIn                | This counter represents the SIP BYE messages received.                |
| SIPS2SInviteIn             | This counter represents the SIP INVITE messages received.             |
| SIPS2SInviteOut            | This counter represents the SIP INVITE messages sent.                 |

## Cisco XCP S2S

The following table contains information about Cisco XCP Server-to-Server (S2S) performance counters.

**Table 98: Cisco XCP S2S Counters**

| Counters             | Counter description                                                            |
|----------------------|--------------------------------------------------------------------------------|
| S2SIncomingDomains   | This counter represents the total foreign domains with incoming subscriptions. |
| S2SOutgoingDomains   | This counter represents the total foreign domains with outgoing subscriptions. |
| S2SFailedDialbackIn  | This counter represents the total failed incoming dialback attempts.           |
| S2SFailedDialbackOut | This counter represents the total failed outgoing dialback attempts.           |

## Cisco XCP TC

The following table contains information about Cisco XCP Text Conferencing (TC) performance counters.

**Table 99: Cisco XCP TC Counters**

| Counter              | Counter description                                                                         |
|----------------------|---------------------------------------------------------------------------------------------|
| TcTotalRooms         | This counter represents the total number of all types of text chat rooms.                   |
| TcAdhocRooms         | This counter represents the total number of ad hoc text chat rooms.                         |
| TcPersistentRooms    | This counter represents the total number of permanent text chat rooms.                      |
| TcCreatedRooms       | This counter represents the total number of created text chat rooms.                        |
| TcDeletedRooms       | This counter represents the total number of deleted text chat rooms.                        |
| TcMessagesIn         | This counter represents the total number of group chat messages received.                   |
| TcMessagesOut        | This counter represents the total number of group chat messages sent.                       |
| TcDirectedMessagesIn | This counter represents the total number of private and invite messages received.           |
| TcMessagesPersisted  | This counter represents the total number of messages archived to the external database.     |
| TcMessagesIgnored    | This counter represents the total number of messages not archived to the external database. |

## Cisco XCP TC Room

The following table contains information about the Cisco XCP TC Room performance counters.

**Table 100: Cisco XCP TC Room Counters**

| Counter            | Counter description                                                        |
|--------------------|----------------------------------------------------------------------------|
| TCRoomNumOccupants | This counter represents the number of occupants on a per-chat room basis.  |
| TCRoomBytesSent    | This counter represents the number of bytes sent on a per-chat room basis. |

| Counter                   | Counter description                                                                       |
|---------------------------|-------------------------------------------------------------------------------------------|
| TCRoomBytesRecv           | This counter represents the number of bytes received on a per-chat room basis.            |
| TCRoomStanzasSent         | This counter represents the number of stanzas sent on a per-chat room basis               |
| TCRoomStanzasRecv         | This counter represents the number of stanzas received on a per-chat room basis.          |
| TCRoomMsgPacketSent       | This counter represents the number of messages sent on a per-chat room basis.             |
| TCRoomMsgPacketsRecv      | This counter represents the number of messages received on a per-chat room basis.         |
| TCRoomPresencePacketsSent | This counter represents the number of presence packets sent on a per-chat room basis.     |
| TCRoomPresencePacketsRecv | This counter represents the number of presence packets received on a per-chat room basis. |
| TCRoomIQPacketsSent       | This counter represents the number of IQ packets sent on a per-chat room basis.           |
| TCRoomIQPacketsRecv       | This counter represents the number of iq packets received on a per-chat room basis.       |

## Cisco XCP WebCM

The following table contains information about the Cisco XCP Web Connection Manager performance counters.

**Table 101: Cisco XCP WebCM Counters**

| Counter               | Counter description                                                                    |
|-----------------------|----------------------------------------------------------------------------------------|
| WebCMConnectedSockets | This counter represents the cumulative total number of connected XMPP client sessions. |
| WebCMFailedRequests   | This counter represents the total number of failed connection requests.                |

# Cisco Unity Connection Counters

## CUC Data Store

The CUC Data Store object provides information about registered database usage by Cisco Unity Connection. The following table contains information about CUC Data Store counters.

**Table 102: CUC Data Store**

| Counters              | Counter Descriptions                                                                    |
|-----------------------|-----------------------------------------------------------------------------------------|
| Allocated Memory [kb] | Amount of database server virtual-address space [in kilobytes].                         |
| Database Connections  | Total number of connections to the database server.                                     |
| Disk Reads            | Total number of disk read operations for all data chunks (rows) in the last 30 seconds. |
| Disk Reads/second     | Number of read operations from the disk per second.                                     |
| Disk Writes           | Number of write operations to the disk in the last 30 seconds.                          |
| Disk Writes/second    | Number of write operations to the disk per second.                                      |
| Shared Memory [kb]    | Amount of database server shared memory used [in kilobytes].                            |

## CUC Data Store: Databases

The CUC Data: Databases object provides information about the databases that Cisco Unity Connection uses.

**Table 103: CUC Data Store: Databases**

| Counters          | Counter Descriptions                                  |
|-------------------|-------------------------------------------------------|
| Disk Reads/chunk  | Number of read operations for the selected data chunk |
| Disk Writes/chunk | Number of write operations for the selected data      |

## CUC Digital Notifications

The CUC Digital Notifications object provides information about the total number of SMS and SMTP notifications. The following table contains information about CUC Digital Notification counters.

Table 104: CUC Digital Notifications

| Counters                                                                      | Counter Descriptions                                                                                                                               |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| SMS Notifications Failed                                                      | The total number of SMS notifications failing to connect.                                                                                          |
| SMS Notifications Total                                                       | The total number of SMS notifications sent to subscribers by Cisco Unity Connection.                                                               |
| SMTP Notifications Total                                                      | The total number of SMTP notifications that Cisco Unity Connection sent to subscribers.                                                            |
| HTML Notifications with Summary of voice messages                             | The counter to maintain count of summary notifications.                                                                                            |
| HTML Notifications with Summary of voice messages in Last One Minute          | The counter to maintain count of summary notifications sent in last one minute.                                                                    |
| Scheduled Notifications Total                                                 | The counter to maintain count of scheduled summary notifications sent.                                                                             |
| Scheduled Notifications in Last One Minute                                    | The counter to maintain count of scheduled summary notifications sent in last minute.                                                              |
| Scheduled Notifications dropped due to Parent Schedule off                    | The counter to maintain count of scheduled summary notifications dropped (not sent) because the parent schedule was turned off.                    |
| Scheduled Notifications dropped due to Parent Schedule off in Last One Minute | The counter to maintain count of scheduled summary notifications dropped (not sent) in last one minute because the parent schedule was turned off. |
| Missed Call Notifications Total                                               | The total number of missed call notifications sent from Cisco Unity Connection.                                                                    |

## CUC Directory Services

The CUC Directory Services object provides information about the performance of the directory services that Cisco Unity Connection uses.

The Directory Search Duration Average [s] counter represents the average time [in seconds] to complete a directory search request for the Cisco Unity Connection server.

## CUC Feeder

The CUC Feeder object keeps a count of total requests processed by the Feeder. The following table contains information about CUC Feeder counters.

| Counters                         | Counter Descriptions                                                  |
|----------------------------------|-----------------------------------------------------------------------|
| Total objects requests processed | The total number of HTTP[S]/CCI objects requests processed by Feeder. |

| Counters                                      | Counter Descriptions                                                                     |
|-----------------------------------------------|------------------------------------------------------------------------------------------|
| Objects requests processed in last 15 minutes | The total number of HTTP[S]/CCI objects requests processed by Feeder in last 15 minutes. |
| Total object requests processed               | The total number of HTTP[S]/CCI object requests processed by Feeder.                     |
| Object requests processed in last 15 minutes  | The total number of HTTP[S]/CCI object requests processed by Feeder in last 15 minutes.  |

## CUC Mailbox Sync

The Mailbox Sync service synchronizes messages between Unity Connection and Exchange.

The following table contains information about Mailbox Sync counters.

| Counters                  | Counter Description                                                                                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active thread count       | Cisco Unity Connection maintains threads for synchronization of voicemail from Cisco Unity Connection to Exchange server and vice-versa. At any moment, this counter specifies the number of threads that are actively in use for voicemail synchronization.                                 |
| Background queue size     | Mailbox sync has three types of priority queues: Background, Normal, and Time-Sensitive. Background queue is the lowest priority queue. This queue has items that are scheduled because of background re-synchronization of each mailbox hourly.                                             |
| Normal queue size         | Normal queue has moderate priority. This queue has items that are scheduled because of messaging operation (such as message CREATE, READ, UNREAD, DELETE) performed by user or any configuration update by administrator on Unified Messaging page on Cisco Unity Connection Administration. |
| Time sensitive queue size | Time sensitive queue has highest priority. This queue has such items that are scheduled because of keep-alive message sent by Cisco Unity Connection to Exchange server to keep subscription alive. This is applicable for 2003 Exchange server only.                                        |
| Total connection errors   | It specifies the number of times the CuMbxSync process fails to retrieve or update some data from database.                                                                                                                                                                                  |

| Counters              | Counter Description                                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Mailbox Adds    | It specifies the number of times a user mailbox has been setup for subscription. Any communication error between Unity Connection and Exchange, results in user mailbox remove and re-add.                                           |
| Total Mailbox Removes | It specifies the number of times a user mailbox has been setup for un-subscription. Any communication error between Unity Connection and Exchange, results in user mailbox remove and re-add.                                        |
| Total Resyncs         | It specifies the total number of times user mailbox is resynchronized with Exchange server. Cisco Unity Connection does background resynchronization for all the user mailboxes hourly.                                              |
| Total Retries         | Whenever there is a communication failure between Cisco Unity connection and Exchange server, Unity Connection does mailbox synchronization retry for particular user mailbox. This counter specifies the count of such occurrences. |
| Total Work Items      | It specifies number of times any messaging operation, such as CREATE, READ, UNREAD, and DELETE, has been performed on any user mailbox.                                                                                              |

## CUC Message Store

The CUC Message Store object provides information about the performance of the Cisco Unity Connection message store. The following table contains information about CUC Message Store counters.

**Table 105: CUC Message Store**

| Counters                                | Counter Descriptions                                                                                                   |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Bad Mail Total                          | Total number of messages sent to the Bad Mail folder since the last restart of the MTA server.                         |
| Delivery Receipts Total                 | Total number of delivery receipts since the last restart of the MTA server.                                            |
| Incoming Recalls                        | Number of incoming requests to recall local copies of messages initiated by remote senders on other network locations. |
| Intersite Messages Delivered Per Minute | Number of intersite messages delivered in the last minute.                                                             |
| Intersite Messages Delivered Total      | Total number of intersite messages delivered since the last restart of the MTA server.                                 |

| <b>Counters</b>                               | <b>Counter Descriptions</b>                                                                                                                                                                                                     |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intersite Messages Received Per Minute        | Number of intersite messages received in the last minute.                                                                                                                                                                       |
| Intersite Messages Received Total             | Total number of intersite messages received since the last restart of the MTA server.                                                                                                                                           |
| Intersite Messages Total                      | Total number of intersite messages that have been delivered and received since the last restart of the MTA server.                                                                                                              |
| Local Recalls                                 | Number of message recalls initiated by local senders on this server.                                                                                                                                                            |
| Message Size Average [kb]                     | The average size of the MTA at each sample in kilobytes.                                                                                                                                                                        |
| Messages Delivered Total                      | Total number of messages delivered since the last restart of the MTA server.                                                                                                                                                    |
| Messages Received Total                       | Total number of messages received since the last restart of the MTA server.                                                                                                                                                     |
| Non-delivery Receipts Total                   | Total number of non-delivery receipts since the last restart of the MTA server.                                                                                                                                                 |
| Number of Items Recalled                      | Total number of message recalls. This number includes each individual copy of a message that was sent to multiple recipients, so this number could be much larger than the Total Recalls, Local and Remote performance counter. |
| Queued Messages Current                       | The number of messages currently queued in the MTA.                                                                                                                                                                             |
| Read Receipts Total                           | Total number of read receipts since the last restart of the MTA server.                                                                                                                                                         |
| Retries Total                                 | Total number of retries since the last restart of the MTA server.                                                                                                                                                               |
| Total dispatch message folder items delivered | Total number of dispatch messages that have been delivered to individual user mailboxes since the MTA started. This number includes a count of each individual copy of a message sent to multiple recipients.                   |
| Total dispatch messages accepted              | Total number of dispatch messages that have been accepted since the last restart of the MTA server                                                                                                                              |

| Counters                                                   | Counter Descriptions                                                                                                                                                        |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Total dispatch messages delivered                          | Total number of dispatch messages that have been delivered since the MTA started. This number includes each message just once, regardless of the number of recipients.      |
| Total dispatch message items rejected                      | Total number of individual copies of dispatch messages that have been declined since the last restart of the MTA server.                                                    |
| Total dispatch messages removed due to acceptance          | Total number of dispatch messages that have been removed from user mailboxes due to the message being accepted by another user since the last restart of the MTA server     |
| Total recalls, local and remote                            | Total number of message recalls initiated by local and remote senders. This number should be equal to the total of Incoming Recalls and Local Recalls performance counters. |
| VPIM Message Decode Duration Average [s]                   | The average time [in seconds] to decode voice messages in MIME format to the original format.                                                                               |
| VPIM Message Encode Duration Average [s]                   | The average time [in seconds] to encode voice messages to MIME format.                                                                                                      |
| VPIM Messages Delivered Per Minute                         | The number of VPIM messages that the Cisco Unity Connection Messages Store delivered within a minute.                                                                       |
| VPIM Messages Delivered Total                              | The total number of VPIM messages that the Cisco Unity Connection Messages Store delivered.                                                                                 |
| VPIM Messages Received Per Minute                          | The number of VPIM messages that the Cisco Unity Connection Messages Store received per minute.                                                                             |
| VPIM Messages Received Total                               | The total number of VPIM messages that the Cisco Unity Connection Messages Store received.                                                                                  |
| VPIM Messages Total                                        | The total number of VPIM messages that the Cisco Unity Connection Message Store processed.                                                                                  |
| Messages Undelivered Mailbox Quota Full Notification Total | The total number of missed call notification sent when mailbox quota is full.                                                                                               |
| Video Messages Delivered Total                             | The total number of video messages delivered since the last restart of the MTA server.                                                                                      |
| Video Messages Delivered Per Minute                        | The total number of video messages delivered per minute since the last restart of the MTA server.                                                                           |
| Video Messages Processed by MTA Total                      | The total number of video messages processed (both successful and unsuccessful) by the MTA server since the last restart of the server.                                     |

| Counters                                   | Counter Descriptions                                                                                                                               |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Messages Processed by MTA Per Minute | The total number of video messages processed (both successful and unsuccessful) by the MTA server per minute since the last restart of the server. |

## CUC Message Store: Databases

The CUC Message Store: Databases object provides information about the message store database that Cisco Unity Connection uses.

The Messages Delivered Per Message Store counter represents the total number of messages that were delivered per message store since the last restart of the MTA server.

## CUC Personal Call Transfer Rules

The CUC Personal Call Transfer Rules object provides information about the numbers and usage of the personal call transfer rules (PCTR). The following table contains information about CUC Personal Call Transfer Rules counters.

**Table 106: CUC Personal Call Transfer Rules**

| Counters              | Counter Descriptions                                                                                                                                                                                                                                                                                                                  |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable Rule Found | Personal call transfer rule (PCTR) call resulted in rule processing, and an applicable transfer rule is found.                                                                                                                                                                                                                        |
| Destinations Tried    | Number of destinations tried while transfer rules were applied.                                                                                                                                                                                                                                                                       |
| PCTR Calls            | Calls that are subject to personal call transfer rule (PCTR) processing: user assigned COS is enabled for PCTR, user is a Unified Communications Manager user, user has not disabled PCTR.                                                                                                                                            |
| Rules Evaluated       | Number of rules that are evaluated during rule processing in a personal call transfer rule (PCTR) call.                                                                                                                                                                                                                               |
| Subscriber Reached    | Number of times that a subscriber was reached while transfer rules were applied.                                                                                                                                                                                                                                                      |
| Transfer Failed       | Number of times that Cisco Unity Connection fails to transfer a call to a destination while personal call transfer rules were applied. Transfer failures include all conditions except when the called destination is connected, busy, or RNA or times out. A caller hanging up during a transfer gets considered a transfer failure. |
| Voicemail Reached     | Number of times that voice mail was reached while transfer rules were applied.                                                                                                                                                                                                                                                        |

## CUC Phone System

The CUC Phone System object provides information about the performance of the phone system integration. The following table contains information about CUC Phone System counters.

**Table 107: CUC Phone System**

| Counters                            | Counter Descriptions                                                                                     |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|
| Call Count Current                  | The current number of incoming and outgoing calls to the Cisco Unity Connection server.                  |
| Call Count Total                    | The total number of incoming and outgoing calls to the Cisco Unity Connection server.                    |
| Call Duration Average [s]           | The average duration [in seconds] of incoming and outgoing calls from the Cisco Unity Connection server. |
| Call Duration Total [s]             | The total duration [in seconds] of incoming and outgoing calls from the Cisco Unity Connection server.   |
| Calls Unanswered Total              | The total number of unanswered calls on the Cisco Unity Connection server.                               |
| Incoming Calls CFB Current          | The current number of incoming calls that were received as Call Forward Busy.                            |
| Incoming Calls CFB Total            | The total number of incoming calls that were received as Call Forward Busy.                              |
| Incoming Calls CFNA Current         | The current number of incoming calls that were received as Call Forward No Answer.                       |
| Incoming Calls CFNA Total           | The total number of incoming calls that were received as Call Forward No Answer.                         |
| Incoming Calls Current              | The current number of incoming calls.                                                                    |
| Incoming Calls Direct Current       | The current number of incoming calls that were received as direct calls.                                 |
| Incoming Calls Direct Total         | The total number of incoming calls that were received as direct calls.                                   |
| Incoming Calls Duration Average [s] | The average duration [in seconds] of all incoming calls to the Cisco Unity Connection server.            |
| Incoming Calls Duration Total [s]   | The total duration [in seconds] of all incoming calls to the Cisco Unity Connection server.              |
| Incoming Calls No Info Total        | The total number of incoming calls without integration information.                                      |

| <b>Counters</b>                               | <b>Counter Descriptions</b>                                                                                               |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Incoming Calls Total                          | The total number of incoming calls.                                                                                       |
| Message Notification Duration Average [s]     | The average time [in seconds] to complete all message notifications from the Cisco Unity Connection server.               |
| Message Notification Duration Total [s]       | The total time [in seconds] to complete all message notifications from the Cisco Unity Connection server.                 |
| Message Notifications Failed                  | The total number of message notifications that failed to connect to a destination number.                                 |
| Message Notifications Total                   | The total number of message notifications that Cisco Unity Connection sent to subscribers.                                |
| MWI Request Duration Average [ms]             | The average duration [in milliseconds] of all MWI requests from the Cisco Unity Connection server.                        |
| MWI Request Duration Total [ms]               | The total duration [in milliseconds] of all MWI requests from the Cisco Unity Connection server.                          |
| MWI Requests Failed Total                     | The total number of MWI requests that failed to connect to a destination number or complete MWI operation.                |
| MWI Requests Total                            | The total number of MWI requests that Cisco Unity Connection sent.                                                        |
| Outgoing Calls Duration Average [s]           | The average duration [in seconds] of all outgoing calls from the Cisco Unity Connection server.                           |
| Outgoing Calls Duration Total [s]             | The total duration [in seconds] of all outgoing calls from the Cisco Unity Connection server.                             |
| Outgoing Calls Release Transfers Completed    | The number of completed release transfers from the Cisco Unity Connection server.                                         |
| Outgoing Calls Release Transfers Failed       | The number of release transfers from the Cisco Unity Connection server that failed to connect to a destination number.    |
| Outgoing Calls Release Transfers Total        | The total number of release transfers that were attempted from the Cisco Unity Connection server.                         |
| Outgoing Calls Supervised Transfers Completed | The number of completed supervised transfers from the Cisco Unity Connection server.                                      |
| Outgoing Calls Supervised Transfers Dropped   | The number of supervised transfers from the Cisco Unity Connection server that were dropped while in progress.            |
| Outgoing Calls Supervised Transfers Failed    | The number of supervised transfers from the Cisco Unity Connection server that failed to connect to a destination number. |

| Counters                                  | Counter Descriptions                                                                                                  |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Outgoing Calls Supervised Transfers Total | The total number of supervised transfers from the Cisco Unity Connection server.                                      |
| Outgoing Calls Transfers Total            | The total number of release and supervised transfers that Cisco Unity Connection attempted.                           |
| Pager Notifications Duration Average [s]  | The average time [in seconds] to complete all pager notifications from the Cisco Unity Connection server.             |
| Pager Notifications Duration Total [s]    | The total time [in seconds] to complete all pager notifications from the Cisco Unity Connection server.               |
| Pager Notifications Failed                | The total number of pager notifications that failed to connect to a destination number.                               |
| Pager Notifications Total                 | The total number of pager notifications that Cisco Unity Connection sent to subscribers.                              |
| Port Idle Duration [s]                    | The total time [in seconds] that any port remains idle between incoming calls to the Cisco Unity Connection server.   |
| Port Idle Duration Average [s]            | The average time [in seconds] that any port remains idle between incoming calls to the Cisco Unity Connection server. |
| Ports Idle Current                        | The current number of integration ports that are not in use by the Cisco Unity Connection server.                     |
| Ports In Use Current                      | The current number of integration ports that are in use by the Cisco Unity Connection server.                         |
| Ports Locked                              | The current count of the ports that no longer respond or are otherwise unusable by Cisco Unity Connection.            |
| Missed Call Total                         | The total number of missed call notifications triggered by the Cisco Unity Connection server.                         |

## CUC Phone System: Ports

The CUC Phone System: Ports object provides information about the voice messaging ports on Cisco Unity Connection. The following table contains information about CUC Phone System: Ports counters.

Table 108: CUC Phone System: Ports

| Counters                        | Counter Descriptions                                                                                                                                                                                                                           |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port Calls                      | The total number of calls that were received on this port since the Cisco Unity Connection server was last restarted. This includes all types of calls: Incoming calls, MWI dialouts, Notification dialouts, TRAP dialouts, and VPIM dialouts. |
| Port Idle Percent               | The distribution percentage of idle ports on the Cisco Unity Connection server.                                                                                                                                                                |
| Port Usage Duration Average [s] | The average time [in seconds] that a port has been actively processing calls.                                                                                                                                                                  |
| Port Usage Duration Total [s]   | The total time [in seconds] that a port has been actively processing calls.                                                                                                                                                                    |
| Port Usage Percent              | The distribution percentage of calls into ports on the Cisco Unity Connection server.                                                                                                                                                          |

## CUC Replication

The CUC Replication object provides information about the replication for Cisco Unity Connection redundancy. The following table contains information about CUC Replication counters.

Table 109: CUC Replication

| Counters                         | Counter Descriptions                                        |
|----------------------------------|-------------------------------------------------------------|
| File Replication Latency [s]     | How long file exists before replication starts.             |
| File Replication Latency Max [s] | Maximum file replication latency since the service started. |
| File Transfer Rate [kbytes/s]    | Transfer rate for each replicated file.                     |
| Files Replicated Total           | Number of files replicated since the service started.       |
| Transfer Rate [bytes/s]          | Number of bytes transferred each second.                    |

## CUC Replicator: Remote Connection Locations

The CUC Replicator: Remote Connection Locations object provides information about replication with remote Connection locations. The following table contains information about CUC Replicator: Remote Connection Locations counters.

Table 110: CUC Replicator: Remote Connection Locations

| Counters                       | Counter Descriptions                                                                                                                    |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Dependencies Requests Received | The number of replication dependencies requested received from the Connection location.                                                 |
| Dependencies Requests Sent     | The number of replication dependencies requests sent to the Connection location.                                                        |
| Message Receive Failures       | The number of replication messages from this Connection location that were not received because of failures.                            |
| Message Send Failures          | The number of replication messages to the Connection location that were not sent because of failures.                                   |
| Messages Received              | The number of replication messages received from the Connection location.                                                               |
| Messages Sent                  | The number of replication messages sent to the Connection location.                                                                     |
| NDR Messages Received          | The number of replication NDR messages received from the Connection location.                                                           |
| USN Requests Received          | The number of USN request received from the Connection location. This usually indicates that a USN timeout occurred on the remote node. |

## Connection REST Tomcat Connector

The Tomcat Hypertext Transport Protocol (HTTP) and HTTP Secure (HTTPS) Connector object provides information about Tomcat connectors.

Connection Rest Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when VMREST requests of application are accessed. The Secure Socket Layer (SSL) status of VMREST request URL's provide the basis for instance name for each Rest Tomcat Connector. For example, `https://<IP Address>:8443` for SSL or `http://<IP Address>:8080` for non-SSL.

The following table contains information about the Connection Rest Tomcat connector counters.

| Counter        | Counter Description                                                                             |
|----------------|-------------------------------------------------------------------------------------------------|
| Errors         | The total number of HTTP errors (for example, 401 Unauthorized) that the connector encountered. |
| MBytesReceived | The amount of data that the connector received.                                                 |
| MBytesSent     | The amount of data that the connector sent.                                                     |
| Requests       | The total number of request that the connector handled.                                         |

| Counter      | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ThreadsTotal | The current total number of request processing threads, including available and in-use threads, for the connector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ThreadsMax   | The maximum number of request processing threads for the connector.<br><br>Each incoming VMREST request requires a thread for the duration of that request. If more simultaneous requests are received than the currently available request processing threads can handle, additional threads are created up to the configured maximum shown in this counter. If still more simultaneous requests are received, they accumulate within the server socket that the connector created, up to an internally specified maximum number. Any further simultaneous requests receive connection refused messages until resources are available to process them. |
| ThreadsBusy  | This counter represents the current number of busy/in-use request processing threads for the connector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Connection REST Tomcat JVM

The Cisco Tomcat Java Virtual Machine (JVM) object provides information about the pool of common resource memory used by VMREST requests URL's. The dynamic memory block stores all objects that Tomcat and its VMREST requests create.

The following table contains information about the Connection REST Tomcat JVM counters.

| Counters         | Counter Description                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KBytesMemoryFree | The amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine.<br><br>When the amount of free dynamic memory is low, more memory is automatically allocated, and total memory size (represented by the KbytesMemoryTotal counter) increases but only up to the maximum (represented by the KbytesMemoryMax counter).<br><br>You can determine the amount of memory in use by subtracting KBytesMemoryFree from KbytesMemoryTotal. |
| KBytesMemoryMax  | The amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine.                                                                                                                                                                                                                                                                                                                                                                    |

| Counters          | Counter Description                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| KBytesMemoryTotal | The current total dynamic memory block size, including free and in-use memory, of Tomcat Java Virtual Machine. |

## Connection REST Tomcat Web Application

Cisco Rest Tomcat Web Application object provides information about how to run VMREST request URL's.

VMREST request URL's provide the basis for instance name for each Rest Tomcat Web Application, as explained in the following examples:

- Cisco Unified Communications Manager Administration (<https://<IP Address>:8443/ccmadmin>) is identified by ccmadmin.
- Cisco Unified Serviceability (<https://<IP Address>:8443/ccmservice>) is identified by ccmservice.
- Cisco Unified Communications Manager User Options (<https://<IP Address>:8443/ccmuser>) is identified by ccmuser.
- Cisco Unity Connection Administration (<https://<IP Address>:8443/cuadmin>) is identified by cuadmin.
- URLs that do not have an extension, such as <https://<IP Address>:8443> or <http://<IP Address>:8080>, are identified by \_root.

The following table contains information on the Connection Rest Tomcat Web Application counters.

| Counters       | Counter Description                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Errors         | The total number of HTTP errors (for example, 401 Unauthorized) that a Unified Communications Manager-related or Cisco Unity Connection-related web application encounters. |
| Requests       | The total number of VMREST requests that the web application handles. Each time that a web application is accessed, its Requests counter increments accordingly.            |
| SessionsActive | The number of active or in use sessions in the web application.                                                                                                             |

## CUC Sessions: Authz Server

*Table 111: CUC Sessions: Authz Server*

| Counters                                 | Counter Description                           |
|------------------------------------------|-----------------------------------------------|
| CUC Authz Total Validation Requests      | Total Number of Authz validation requests.    |
| CUC Authz Successful Validation Requests | Total Number of successful Authz validations. |
| CUC Authz Failed Validation Requests     | Total Number of failed Authz validations.     |

| Counters                                                | Counter Description                                          |
|---------------------------------------------------------|--------------------------------------------------------------|
| CUC Authz Total Validation Requests in Last minute      | Total Number of Authz validations in Last minute.            |
| CUC Authz Successful Validation Requests in Last minute | Total Number of successful Authz validations in last minute. |
| CUC Authz Failed Validation Requests in Last minute     | Total Number of failed Authz validations in last minute.     |

## CUC Sessions: Calendar Access

The CUC Sessions: Calendar Access object provides information about the Cisco Unity Connection calendar integration. The following contains information about CUC Sessions: Calendar Access counters.

**Table 112: CUC Sessions: Calendar Access**

| Counters                                | Counter Descriptions                                |
|-----------------------------------------|-----------------------------------------------------|
| Connections To Exchange Failure - Total | Total number of Exchange connection failures.       |
| Connections To MP Failure - Total       | Total number of MeetingPlace connection failures.   |
| Exchange Requests - Total               | Total number of Exchange calendar requests.         |
| Exchange Response Time [ms] - Current   | Current Exchange Response Time in milliseconds.     |
| Meeting Join Request - Total            | Total number of requests to join the meeting.       |
| MP Request - Total                      | Total number of MeetingPlace calendar requests.     |
| MP Response Time [ms] - Current         | Current MeetingPlace Response Time in milliseconds. |

## CUC Sessions: E-Mail Access

The CUC Sessions: E-mail Access object provides information about e-mail voice sessions. The following table contains information about CUC Sessions: E-mail Access counters.

**Table 113: CUC Sessions: E-Mail Access**

| Counters                      | Counter Descriptions                                                                                 |
|-------------------------------|------------------------------------------------------------------------------------------------------|
| Messages Read - Total         | The total number of e-mail messages that were read since the last restart of Cisco Unity Connection. |
| Session Duration Average [ms] | The average duration [in milliseconds] of all e-mail sessions as measured on a per-call basis.       |
| Session Duration Total [ms]   | The total duration [in milliseconds] of all e-mail sessions as measured on a per-call basis.         |
| Sessions - Current            | The number of active e-mail voice sessions.                                                          |

| Counters         | Counter Descriptions                                                                        |
|------------------|---------------------------------------------------------------------------------------------|
| Sessions - Total | The total number of e-mail voice sessions since the last restart of Cisco Unity Connection. |

## CUC Sessions: IMAP Server

The CUC Sessions: IMAP Server object provides information about the IMAP server. The following table contains information about CUC Sessions: IMAP Server counters.

**Table 114: CUC Sessions: IMAP Server**

| Counters                      | Counter Descriptions                                                                                                    |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Commands per minute           | The number of IMAP commands per minute.                                                                                 |
| Connection Length Average [s] | The average duration [in seconds] of the connections to the IMAP server in the previous minute.                         |
| Current IDLE Sessions         | The number of idle sessions on the IMAP server.                                                                         |
| Errors Total                  | The total number of IMAP errors that the IMAP server returned since the last restart of the IMAP server.                |
| EXAMINE Requests Total        | The total number of EXAMINE requests to the IMAP server since the last restart of the IMAP server.                      |
| Failed Login Requests Total   | The total number of failed LOGIN requests to the IMAP server since the last restart of the IMAP server.                 |
| FETCH Requests Total          | The total number of FETCH requests to the IMAP server since the last restart of the IMAP server.                        |
| Login Requests Total          | The total number of LOGIN requests to the IMAP server since the last restart of the IMAP server.                        |
| Logout Requests Total         | The total number of LOGOUT requests to the IMAP server since the last restart of the IMAP server.                       |
| Messages Read Total           | The total number of IMAP FETCH commands that have returned the body of the a message since the IMAP was last restarted. |
| Messages Read/hour            | The number of IMAP FETCH commands in the previous hour that returned the body of a message.                             |
| Messages/fetch Average        | Average number of messages that the IMAP FETCH command returned.                                                        |
| NOOP Requests Total           | The total number of NOOP requests to the IMAP server since the last restart of the IMAP server.                         |

| Counters                                      | Counter Descriptions                                                                                                                                                                 |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Response Time [ms]                            | The response time [in milliseconds] for IMAP commands.                                                                                                                               |
| SEARCH Requests Total                         | The total number of SEARCH requests to the IMAP server since the last restart of the IMAP server.                                                                                    |
| Socket Connections Current                    | The number of active socket connections to the IMAP server.                                                                                                                          |
| Socket Connections Total                      | The total number of socket connections that have been made to the IMAP server since it was last restarted.                                                                           |
| STARTTLS Requests Total                       | The total number of STARTTLS requests to the IMAP server since the last restart of the IMAP server. This counter also increments when clients connect to the IMAP SSL port directly. |
| STATUS Requests Total                         | The total number of STATUS requests to the IMAP server since the last restart of the IMAP server.                                                                                    |
| TLS Connections Current                       | The number of active Transport Layer Security connections to the IMAP server.                                                                                                        |
| TLS Errors Total                              | The total number of failed TLS connections to the IMAP server since the last restart of the IMAP server.                                                                             |
| Unsolicited Notify Response Time Average [ms] | Average Unsolicited Notify Response Time [in milliseconds] for the IMAP server.                                                                                                      |
| Unsolicited Notify Responses Total            | Total number of Unsolicited Notify Responses that the IMAP server made since it was last restarted.                                                                                  |

## CUC Sessions: RSS

The CUC Sessions: RSS object provides information about RSS sessions. The following table contains information about CUC Sessions: RSS counters.

**Table 115: CUC Sessions: RSS**

| Counters                    | Counter Descriptions                                                              |
|-----------------------------|-----------------------------------------------------------------------------------|
| RSS Messages Offered Total  | The total number of RSS messages that were offered for streaming.                 |
| RSS Messages Streamed Total | The total number of RSS messages that the Cisco Unity Connection server streamed. |
| RSS Sessions Current        | The current number of RSS sessions.                                               |
| RSS Sessions Total          | The total number of RSS sessions.                                                 |

## CUC Sessions: SMTP Server

The CUC Sessions: SMTP Server object provides information about SMTP server sessions. The following table contains information about CUC Sessions: SMTP Server counters.

**Table 116: CUC Sessions: SMTP Server**

| Counters                 | Counter Descriptions                                                             |
|--------------------------|----------------------------------------------------------------------------------|
| Total Delivered Messages | The number of SMTP messages that were delivered since the start of the system.   |
| Total Messages           | The number of SMTP messages delivered or received since the start of the system. |
| Total Received Messages  | The number of SMTP messages that were received since the start of the system.    |

## CUC Sessions: SpeechView Processor

The CUC Sessions: SpeechView Processor object provides information about the SpeechView Processor service. The following table contains information about CUC Sessions: SpeechView Processor counters.

**Table 117: CUC Sessions: SpeechView Processor**

| Counters             | Counter Descriptions                                                                                       |
|----------------------|------------------------------------------------------------------------------------------------------------|
| Average wait time    | The average time it takes to receive successful transcriptions from the external service.                  |
| Total failures       | The total number of failed transcriptions since the last restart of the SpeechView Processor service.      |
| Total timeouts       | The total number transcriptions that timed out since the last restart of the SpeechView Processor service. |
| Transcribed messages | The total number successful transcriptions since the last restart of the SpeechView Processor service.     |

## CUC Sessions: TRaP

The CUC Sessions: TRaP object provides information about telephone record and playback (TRaP) sessions. The following table contains information about CUC Sessions: TRaP counters.

**Table 118: CUC Sessions: TRaP**

| Counters                                  | Counter Descriptions                                            |
|-------------------------------------------|-----------------------------------------------------------------|
| Reverse TRaP Session Duration Average [s] | The average duration [in seconds] of all reverse TRaP sessions. |

| Counters                                | Counter Descriptions                                                                      |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Reverse TRaP Session Duration Total [s] | The total duration [in seconds] of all reverse TRaP sessions.                             |
| Reverse TRaP Sessions Current           | The current number of active reverse TRaP sessions.                                       |
| Reverse TRaP Sessions Total             | The total number of reverse TRaP sessions since the last start of Cisco Unity Connection. |
| TRaP Session Duration Average [s]       | The average duration [in seconds] of all TRaP sessions.                                   |
| TRaP Session Duration Total [s]         | The total duration [in seconds] of all TRaP sessions.                                     |
| TRaP Sessions Current                   | The current number of active TRaP sessions.                                               |
| TRaP Sessions Total                     | The total number of TRaP sessions since the last start of Cisco Unity Connection.         |

## CUC Sessions: TTS

The CUC Sessions: TTS object provides information about text-to-speech (TTS) sessions. The following table contains information about CUC Sessions: TTS counters.

**Table 119: CUC Sessions: TTS**

| Counters                     | Counter Descriptions                                                                   |
|------------------------------|----------------------------------------------------------------------------------------|
| Session Duration Average [s] | The average duration [in seconds] of all TTS sessions.                                 |
| Session Duration Total [s]   | The total duration [in seconds] of all TTS sessions.                                   |
| Sessions Current             | The current number of active TTS voice sessions.                                       |
| Sessions Total               | The total number of TTS voice sessions since the last start of Cisco Unity Connection. |

## CUC Sessions: Unified Client

The CUC Sessions: Unified Client object provides information about the Unified Client for Cisco Unity Connection.

The Connections Total counter represents the total number of Unified Client IMAP requests.

## CUC Sessions: Video

CUC Sessions Video: Video session object provides information about video sessions with video server. The following table contains information about CUC Sessions: Video

Table 120: CUC Sessions: Video

| Counters                                              | Counter Descriptions                                                                                                                             |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Audio calls Negotiated Total                          | The total number of Audio calls negotiated despite video offer.                                                                                  |
| Audio Calls Negotiated In Last One Minute             | The total number of audio calls negotiated despite video offer in last one minute.                                                               |
| Outgoing Video calls Release Transfer                 | The total number of outgoing video calls transferred as Release to Switch.                                                                       |
| Supervise Transfer Calls Total                        | The total number of Supervise transfers initiated from video calls since the last restart of Cisco Unity Connection.                             |
| Video calls downgraded to Audio Total                 | The total number of video calls downgraded to audio since the last restart of Unity Connection.                                                  |
| Video calls downgraded to Audio In Last One Minute    | The total number of video calls downgraded to audio in last one minute.                                                                          |
| Video calls downgraded with prompt total              | Total number of video calls downgraded with prompt "Video services are not available using audio only for duration of this call".                |
| Video calls downgraded with prompt in Last One Minute | Total number of video calls downgraded with prompt "Video services are not available using audio only for duration of this call" in last minute. |
| Video Sessions Total                                  | The total number of video session requests sent from Unity Connection to Video Server.                                                           |
| Video Sessions Current                                | The total number of current video session requests sent from Unity Connection to Video Server.                                                   |
| Video Session Playbacks Total                         | The total number of video session playbacks since the last restart of Cisco Unity Connection.                                                    |
| Video Session Playbacks Current                       | The total number of current video session playbacks.                                                                                             |
| Video Media File Playbacks Total                      | The total number of image playbacks from video server since the last restart of Unity Connection.                                                |
| Video Media File Playbacks Current                    | The current number of Video Media File playbacks from video server.                                                                              |
| Video Recordings Total                                | The total number of Video Recordings saved at video server since the last restart of Unity Connection.                                           |
| Video Recordings Current                              | The current number of Video Recordings saved at video server.                                                                                    |

| Counters                                                   | Counter Descriptions                                                                                                            |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Video Playback Completed Events from MS Total              | The total number of Video Playback completed events from video server since the last restart of Unity Connection.               |
| Video Playback Completed Events from MS In Last One Minute | The total number of Video Playback completed events from video server since last one minute.                                    |
| Video Keep Alive Total                                     | The total number of Keep Alive sent by Unity Connection to video server since the last restart of Unity Connection.             |
| Video Keep Alive In Last One Minute                        | The total number of Keep Alive sent by Unity Connection to video server since last one minute.                                  |
| Video Get Media Capabilities Total                         | The total number of GetMediaCapabilities sent by Unity Connection to video server since the last restart of Unity Connection.   |
| Video Get Media Capabilities In Last One Minute            | The total number of GetMediaCapabilities sent by Unity Connection to video server since last one minute.                        |
| Video SignIn Total                                         | The total number of SignIn request sent by Unity Connection to video server since the last restart of Unity Connection.         |
| Video SignIn Total In Last One Minute                      | The total number of SignIn sent by Unity Connection to video server since last one minute.                                      |
| KeyFrame Request sent Total                                | The total number of KeyFrame requests sent during video recording to EndPoint since the last restart of Cisco Unity Connection. |
| KeyFrame Request sent In Last One Minute                   | The total number of KeyFrame requests sent during video recording to EndPoint since the last restart of Cisco Unity Connection. |
| Video Record Successful Total                              | The total number of successful Video Recordings since the last restart of Cisco Unity Connection.                               |
| Video Sessions Failed Total                                | The total number of video sessions failed since the last restart of Cisco Unity Connection.                                     |
| Video Session Failed In Last One Minute                    | The total number of video sessions failed in last one minute.                                                                   |

| Counters                  | Counter Descriptions                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Media Sense Timeout Total | The total number of connection timeout errors while connecting to MediaSense server since the last restart of Cisco Unity Connection. This counter is applicable for the following events: <ul style="list-style-type: none"> <li>• During a video call</li> <li>• At the time of sign in</li> <li>• During exchange of media capabilities with the MediaSense server.</li> </ul> |
| Video Play Failed Total   | The total number of video messages that are played as audio messages since the last restart of Cisco Unity Connection.                                                                                                                                                                                                                                                            |

## CUC Sessions: Voice

The CUC Sessions: Voice object provides information about voice sessions. The following table contains information on CUC Sessions: Voice counters.

**Table 121: CUC Sessions: Voice**

| Counters                               | Counter Descriptions                                                                                                                                                                                                                            |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Delay - Directory Search [ms]          | The delay [in milliseconds] that a caller experienced when the caller attempted to search through the directory. This counter measures the time between the entered search criteria and the return results.                                     |
| Delay - Opening Greeting [ms]          | The delay [in milliseconds] that a caller experienced before any audio was received. This counter measures the time between the system receiving a call and the time audio begins streaming to the caller.                                      |
| Delay - Subscriber Delete Message [ms] | The delay [in milliseconds] that a Cisco Unity Connection subscriber experienced when the subscriber attempted to delete a message. This counter measures the time between the last delete message prompt and the confirmation of the deletion. |
| Delay - Subscriber Logon [ms]          | The delay [in milliseconds] that a Cisco Unity Connection subscriber experienced due to authentication.                                                                                                                                         |
| Delay - Subscriber Message Count [ms]  | The delay [in milliseconds] that a Cisco Unity Connection subscriber experienced during message counting in the subscriber message box.                                                                                                         |
| Delay - Subscriber Message Header [ms] | The delay [in milliseconds] that a caller experienced while Cisco Unity Connection is gathering message header information.                                                                                                                     |

| Counters                        | Counter Descriptions                                                                                                              |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Failsafes Total                 | The total number of times that the failsafe conversation has been played.                                                         |
| G.711a Sessions Current         | The current number of active G.711 (a-law) voice sessions.                                                                        |
| G.711a Sessions Total           | The total number of active G.711 (a-law) voice sessions since the last restart of Cisco Unity Connection.                         |
| G.711u Sessions Current         | The current number of active G.711 (u-law) voice sessions.                                                                        |
| G.711u Sessions Total           | The total number of active G.711 (u-law) voice sessions since the last restart of Cisco Unity Connection.                         |
| G.722 Sessions Current          | The current number of active G.722 voice sessions.                                                                                |
| G.722 Sessions Total            | The total number of active G.722 voice sessions since the last restart of Cisco Unity Connection.                                 |
| G.729 Sessions Current          | The current number of active G.729 voice sessions.                                                                                |
| G.729 Sessions Total            | The total number of active G.729 voice sessions since the last restart of Cisco Unity Connection.                                 |
| iLBC Sessions Current           | The current number of active iLBC voice sessions.                                                                                 |
| iLBC Sessions Total             | The total number of active iLBC voice sessions since the last restart of Cisco Unity Connection.                                  |
| Meeting search delay delay [ms] | The delay [in milliseconds] that a Cisco Unity Connection subscriber experienced due to looking up meetings.                      |
| Messages Deleted                | The total number of voice messages that were deleted through the TUI from the time Cisco Unity Connection was last restarted.     |
| Messages Forwarded              | The total number of voice messages that were forwarded through the TUI from the time Cisco Unity Connection was last restarted.   |
| Messages Read                   | The total number of voice messages that were read through the TUI from the time Cisco Unity Connection was last restarted.        |
| Messages Replied                | The total number of voice messages that received replies through the TUI from the time Cisco Unity Connection was last restarted. |

| Counters                               | Counter Descriptions                                                                                                                 |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Messages Sent                          | The total number of voice messages that were sent through the TUI from the time Cisco Unity Connection was last restarted.           |
| MRCP Define Grammar Delay [ms]         | The delay [in milliseconds] between an MRCP define-grammar request and its response.                                                 |
| MRCP Define Grammar Delay Average [ms] | The average delay [in milliseconds] between an MRCP define-grammar request and its response.                                         |
| MRCP Define Grammar Delay Max [ms]     | The maximum delay [in milliseconds] between an MRCP define-grammar request and its response.                                         |
| MRCP Delay [ms]                        | The delay [in milliseconds] between an MRCP request and its response.                                                                |
| MRCP Delay Average [ms]                | The average delay [in milliseconds] between an MRCP request and its response.                                                        |
| MRCP Delay Max [ms]                    | The maximum delay [in milliseconds] between an MRCP request and its response.                                                        |
| OPUS Sessions Current                  | This displays the current number of active OPUS voice sessions.                                                                      |
| OPUS Sessions Total                    | This displays the total number of OPUS voice sessions since the last restart of Cisco Unity Connection.                              |
| Sessions Current                       | The current number of all active voice sessions for any codec.                                                                       |
| Sessions Total                         | The total number of voice sessions for any codec - G.711 mu-law and G.729 - since the last restart of Cisco Unity Connection.        |
| Subscriber Lookup Delay [ms]           | The delay [in milliseconds] that a Cisco Unity Connection subscriber experienced due to finding and loading a subscriber by DTMF ID. |

## CUC Sessions: VUI

The CUC Sessions: VUI object provides information about the voice user interface (VUI). The following table contains information on CUC Sessions: VUI counters.

Table 122: CUC Sessions: VUI

| Counter                                | Counter Descriptions                                                                                                                                                                                                                       |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Delay - Subscriber Message Access [ms] | The delay [in milliseconds] that a user when experienced when the user attempted to access a message. This counter measures the time between the voice command of intending to listen to a message and the actual playback of the message. |
| Matches Total                          | The total number of matches in the VUI conversation.                                                                                                                                                                                       |
| Messages Read                          | The total number of messages that were read through the VUI from the time that Cisco Unity Connection was last restarted.                                                                                                                  |
| No-matches Total                       | The total number of no-matches in the VUI conversation.                                                                                                                                                                                    |
| Session Duration Average/call [s]      | The average duration [in seconds] of a VUI session as measured on a per-call basis.                                                                                                                                                        |
| Session Duration Total [s]             | The duration [in seconds] of all VUI sessions.                                                                                                                                                                                             |
| Sessions Current                       | The current number of active VUI sessions for any codec.                                                                                                                                                                                   |
| Sessions Total                         | The total number of VUI and voice sessions for any codec.                                                                                                                                                                                  |

## CUC Sessions: Web

The CUC Sessions: Web object provides information about the Cisco Personal Communications Assistant (CPCA) and Cisco Unity Connection Administration sessions. The following table contains information on CUC Sessions: Web counters.

Table 123: CUC Sessions: Web

| Counters                          | Counter Descriptions                                                                   |
|-----------------------------------|----------------------------------------------------------------------------------------|
| CPCA Authentication Delay Max [s] | The maximum delay [in seconds] in authentication to a user Inbox or Assistant.         |
| CPCA Failed Authentications Total | The number of failed authentications.                                                  |
| CPCA Pages Served Total           | The total number of CPCA pages that the Cisco Unity Connection server served.          |
| CPCA Requests In Queue Current    | The number of requests in CPCA queue waiting to be processed.                          |
| CPCA Server Busy Pages Total      | The total number of server busy pages that the Cisco Unity Connection server returned. |

| Counters                          | Counter Descriptions                                                                      |
|-----------------------------------|-------------------------------------------------------------------------------------------|
| CPCA Sessions Current             | The current number of CPCA sessions.                                                      |
| CPCA Sessions Total               | The total number of CPCA sessions.                                                        |
| CUCA Authentication Delay Max [s] | The maximum delay [in seconds] in authentication to the System Administrator window.      |
| CUCA Response Time Max [ms]       | The maximum time [in milliseconds] for the Tomcat server to respond to any given request. |

## CUC Sessions: Web E-Mail Access

The CUC Sessions: Web E-mail Access object provides information about web e-mail access sessions (IMAP). The following table contains information about CUC Sessions: Web E-mail Access counters.

**Table 124: CUC Sessions: Web E-Mail Access**

| Counters                      | Counter Descriptions                                                                                 |
|-------------------------------|------------------------------------------------------------------------------------------------------|
| Messages Read - Total         | The total number of e-mail messages that were read since the last restart of Cisco Unity Connection. |
| Session Duration Average [ms] | The average duration [in milliseconds] of all e-mail sessions as measured on a per-call basis.       |
| Session Duration Total [ms]   | The total duration [in milliseconds] of all e-mail sessions as measured on a per-call basis.         |
| Sessions - Current            | The number of active e-mail voice sessions.                                                          |
| Sessions - Total              | The total number of e-mail voice sessions since the last restart of Cisco Unity Connection.          |

## CUC System Agent

The CUC System Agent object records the information about the periodic system tasks. The following table contains information about CUC System Agent counters.

| Counters                                          | Counter Descriptions                                                   |
|---------------------------------------------------|------------------------------------------------------------------------|
| Message Related Files Shredded Total              | The total number of messaging related files that have been shredded.   |
| Message Related Files Shredded Failed             | The total number of messaging related files that have failed to shred. |
| Total Number of Requests sent by HTTP[S]/CCI Link | The cumulative number of HTTP(S) requests sent by the Reader.          |

| Counters                                                    | Counter Descriptions                                                                                                                             |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Number of successful response of HTTP[S]/CCI Requests | The cumulative number of HTTP(S) requests that were successfully processed by the Feeder.                                                        |
| Total Number of failure response of HTTP[S]/CCI Requests    | The cumulative number of HTTP(S) requests that were not successfully processed by the Feeder.                                                    |
| Total Number of Directory Objects Successfully Processed    | The cumulative number of Directory Objects that were successfully processed.                                                                     |
| Directory Objects Processed Successfully In Last One Minute | Directory objects successfully processed per minute.                                                                                             |
| Delete Request sent to Media Sense Total                    | The total number of delete requests sent to MediaSense server since the last restart of Unity Connection.                                        |
| Media Sense Timeout While Delete Total                      | The total number of connection timeouts in response to the delete requests sent to MediaSense server since the last restart of Unity Connection. |

## CUC VMREST

The CUC VMREST object provides information about internal VMREST requests.

The following table contains information about VMREST counters.

| Counters                                     | Counter Description                                                                       |
|----------------------------------------------|-------------------------------------------------------------------------------------------|
| Total VMREST active threads                  | To maintain Total Number of active VMREST threads.                                        |
| Total VMREST Throttled Requests              | To maintain Total Number of Throttled VMREST requests by Throttle Semaphore.              |
| Total VMREST Throttled Requests in last hour | To maintain Total Number of Throttled VMREST requests by Throttle Semaphore in last hour. |

## CUC VMREST Container

The CUC VMREST Container object provides information about REST container operations for handling VMREST requests from external clients.

The following table contains information about VMREST Container counters.

| Counters                              | Counter Description                                                   |
|---------------------------------------|-----------------------------------------------------------------------|
| Total VMREST CONTAINER active threads | To maintain Total Number of active VMREST threads for REST container. |

| Counters                                               | Counter Description                                                                                          |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Total VMREST CONTAINER throttled Requests              | To maintain Total Number of Throttled VMREST requests by Throttle Semaphore for REST container.              |
| Total VMREST CONTAINER throttled Requests in last hour | To maintain Total Number of Throttled VMREST requests by Throttle Semaphore in last hour for REST container. |

## System Alerts

### AuthenticationFailed

Authentication validates the user ID and password that are submitted during log in. An alarm gets raised when an invalid user ID and/or the password gets used.

#### Default Configuration

*Table 125: Default Configuration for the AuthenticationFailed RTMT Alert*

| Value                                              | Default Configuration                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                      |
| Severity                                           | Critical                                                                      |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                     |
| Threshold                                          | Number of AuthenticationFailed events exceeds:<br>1 time in the last 1 minute |
| Duration                                           | Trigger alert immediately                                                     |
| Frequency                                          | Trigger alert on every poll                                                   |
| Schedule                                           | 24 hours daily                                                                |
| Enable Email                                       | Selected                                                                      |
| Trigger Alert Action                               | Default                                                                       |

### CiscoDRFFailure

This alert occurs when the DRF backup or restore process encounters errors.

## Default Configuration

**Table 126: Default Configuration for the CiscoDRFFailure RTMT Alert**

| Value                                              | Default Configuration                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                       |
| Severity                                           | Critical                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoDRFFailure event generated |
| Duration                                           | Trigger alert immediately                                                      |
| Frequency                                          | Trigger alert on every poll                                                    |
| Schedule                                           | 24 hours daily                                                                 |
| Enable Email                                       | Selected                                                                       |
| Trigger Alert Action                               | Default                                                                        |

## CiscoHAProxyServiceDown

The HAProxy Service Down alarm indicates when the incoming web traffic into Unified Communications Manager and IM and Presence Service is down.

The following table contains information about the CiscoHAProxyServiceDown counter.

**Table 127: CiscoHAProxyServiceDown**

| Counters                                              | Counter Description                                                                      |
|-------------------------------------------------------|------------------------------------------------------------------------------------------|
| Enable Alert                                          | Selected                                                                                 |
| Severity                                              | Warning                                                                                  |
| Enable or Disable this alert on the following servers | Enabled on listed servers                                                                |
| Threshold                                             | Trigger alert when following condition met: when<br>HAProxy service down event generated |
| Duration                                              | Trigger alert immediately                                                                |
| Frequency                                             | Trigger alert on every poll                                                              |
| Schedule                                              | 24 hours daily                                                                           |
| Enable Email                                          | Selected                                                                                 |
| Trigger Alert Action                                  | Default                                                                                  |

## CoreDumpFileFound

This alert occurs when the CoreDumpFileFound event gets generated. This indicates that a core dump file exists in the system.

### Default Configuration

*Table 128: Default Configuration for the CoreDumpFileFound RTMT Alert*

| Value                                              | Default Configuration                                                            |
|----------------------------------------------------|----------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                         |
| Severity                                           | Critical                                                                         |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                        |
| Threshold                                          | Trigger alert when following condition met:<br>CoreDumpFileFound event generated |
| Duration                                           | Trigger alert immediately                                                        |
| Frequency                                          | Trigger alert on every poll                                                      |
| Schedule                                           | 24 hours daily                                                                   |
| Trace download Parameters                          | Not Selected                                                                     |
| Enable Email                                       | Selected                                                                         |
| Trigger Alert Action                               | Default                                                                          |

## CpuPegging

CPU usage gets monitored based on configured thresholds. If the usage goes above the configured threshold, this alert gets generated.

### Default Configuration

*Table 129: Default Configuration for the CpuPegging RTMT Alert*

| Value                                              | Default Configuration                              |
|----------------------------------------------------|----------------------------------------------------|
| Enable Alert                                       | Selected                                           |
| Severity                                           | Critical                                           |
| Enable/Disable this alert on the following servers | Enabled on listed servers                          |
| Threshold                                          | Trigger alert when following condition met:<br>99% |

| Value                | Default Configuration                                                           |
|----------------------|---------------------------------------------------------------------------------|
| Duration             | Trigger alert only when value constantly below or over threshold for 60 seconds |
| Frequency            | Trigger up to 3 alerts within 30 minutes                                        |
| Schedule             | 24 hours daily                                                                  |
| Enable Email         | Selected                                                                        |
| Trigger Alert Action | Default                                                                         |

## CriticalServiceDown

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

### Default Configuration

*Table 130: Default Configuration for the CriticalServiceDown RTMT Alert*

| Value                                              | Default Configuration                                                 |
|----------------------------------------------------|-----------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                              |
| Severity                                           | Critical                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                             |
| Threshold                                          | Trigger alert when following condition met:<br>Service status is DOWN |
| Duration                                           | Trigger alert immediately                                             |
| Frequency                                          | Trigger alert on every poll                                           |
| Schedule                                           | 24 hours daily                                                        |
| Trace download Parameters                          | Enable Trace Download not selected                                    |
| Enable Email                                       | Selected                                                              |
| Trigger Alert Action                               | Default                                                               |

## DBChangeNotifyFailure

This alert occurs when the Cisco Database Notification Service experiences problems and might stop. This condition indicates change notification requests that are queued in the database got stuck and changes made to the system will not take effect. Ensure that the Cisco Database Layer Monitor is running on the node where the alert exists. If it is, restart the service. If that does not return this alert to safe range, collect the output of **show tech notify** and **show tech dbstateinfo** and contact TAC for information about how to proceed.

## Default Configuration

**Table 131: Default Configuration for the DBChangeNotifyFailure RTMT Alert**

| Value                                              | Default Configuration                                                                    |
|----------------------------------------------------|------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                 |
| Severity                                           | Critical                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                |
| Threshold                                          | Trigger alert when following condition met:<br>DBChangeNotify queue delay over 2 minutes |
| Duration                                           | Trigger alert immediately                                                                |
| Frequency                                          | Trigger up to 1 alert within 30 minutes                                                  |
| Schedule                                           | 24 hours daily                                                                           |
| Enable Email                                       | Selected                                                                                 |
| Trigger Alert Action                               | Default                                                                                  |

## DBReplicationFailure

This alarm indicates a failure in IDS replication and requires database administrator intervention.



**Note** Be aware that DBReplicationFailure is based on the replication status perfmon counter (instead of DBReplicationFailure alarm as was previously the case). This alert gets triggered whenever the corresponding replication status perfmon counter specifies a value of **3** (Bad Replication) or **4** (Replication Setup Not Successful).

## Default Configuration

**Table 132: Default Configuration for the DBReplicationFailure RTMT Alert**

| Value                                              | Default Configuration                                                        |
|----------------------------------------------------|------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                     |
| Severity                                           | Critical                                                                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                    |
| Threshold                                          | Trigger alert when following condition met:<br>DBReplicationFailure occurred |
| Duration                                           | Trigger alert immediately                                                    |

| Value                | Default Configuration                   |
|----------------------|-----------------------------------------|
| Frequency            | Trigger up to 1 alert within 60 minutes |
| Schedule             | 24 hours daily                          |
| Enable Email         | Selected                                |
| Trigger Alert Action | Default                                 |

## DBReplicationTableOutOfSync

### Default Configuration

*Table 133: Default Configuration for the DBReplicationTableOutOfSync RTMT Alert*

| Value                                              | Default Configuration                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                    |
| Severity                                           | Critical                                                                                                    |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                   |
| Threshold                                          | Trigger alert when following condition met:<br>IDSReplicationFailure event with alarm number 888 generated. |
| Duration                                           | Trigger alert immediately                                                                                   |
| Frequency                                          | Trigger up to 1 alert within 60 minutes                                                                     |
| Schedule                                           | 24 hours daily                                                                                              |
| Enable Email                                       | Selected                                                                                                    |
| Trigger Alert Action                               | Default                                                                                                     |

## HardwareFailure

This alert occurs when a hardware failure event (disk drive failure, power supply failure, and others) has occurred.

### Default Configuration

*Table 134: Default Configuration for the HardwareFailure RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |

| Value                                              | Default Configuration                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------|
| Severity                                           | Critical                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>HardwareFailure event generated |
| Duration                                           | Trigger alert immediately                                                      |
| Frequency                                          | Trigger alert on every poll                                                    |
| Schedule                                           | 24 hours daily                                                                 |
| Enable Email                                       | Selected                                                                       |
| Trigger Alert Action                               | Default                                                                        |

## LogFileSearchStringFound

This alert occurs when the LogFileSearchStringFound event gets generated. This indicates that the search string was found in the log file.

### Default Configuration

*Table 135: Default Configuration for the LogFileSearchStringFound RTMT Alert*

| Value                                              | Default Configuration                                                                   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                |
| Severity                                           | Warning                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                               |
| Threshold                                          | Trigger alert when following condition met:<br>LogFileSearchStringFound event generated |
| Duration                                           | Trigger alert immediately                                                               |
| Frequency                                          | Trigger alert on every poll                                                             |
| Schedule                                           | 24 hours daily                                                                          |
| Enable Email                                       | Selected                                                                                |
| Trigger Alert Action                               | Default                                                                                 |

## LogPartitionHighWaterMarkExceeded

This alert occurs when the percentage of used disk space in the log partition exceeds the configured high water mark. When this alert gets generated, LPM deletes files in the log partition (down to low water mark) to avoid running out of disk space.



**Note** LPM may delete files that you want to keep. You should act immediately when you receive the LogPartitionLowWaterMarkExceeded alert.



**Note** In the case, when **logpartitionhighwatermarkexceeded** is set to a lower percentage and deletes the cdr/cmr files from the temporary folder then use **RTMT** to ensure that the alert parameter is set back to the default value of 95%.

### Default Configuration

*Table 136: Default Configuration for the LogPartitionHighWaterMarkExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                                      |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                   |
| Severity                                           | Critical                                                                                                   |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                  |
| Threshold                                          | Trigger alert when following condition met:<br>Log Partition Used Disk Space Exceeds High Water Mark (95%) |
| Duration                                           | Trigger alert immediately                                                                                  |
| Frequency                                          | Trigger alert on every poll                                                                                |
| Schedule                                           | 24 hours daily                                                                                             |
| Enable Email                                       | Selected                                                                                                   |
| Trigger Alert Action                               | Default                                                                                                    |

## LogPartitionLowWaterMarkExceeded

This alert occurs when the LogPartitionLowWaterMarkExceeded event gets generated. This indicates that the percentage of used disk space in the log partition has exceeded the configured low water mark.



**Note** Be aware that this alert is an early warning. The administrator should start freeing up disk space. Using RTMT/TLC, you can collect trace/log files and delete them from the server. The administrator should adjust the number of trace files that are kept to avoid hitting the low water mark again.

### Default Configuration

*Table 137: Default Configuration for the LogPartitionLowWaterMarkExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                                     |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                  |
| Severity                                           | Critical                                                                                                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                 |
| Threshold                                          | Trigger alert when following condition met:<br>Log Partition Used Disk Space Exceeds Low Water Mark (90%) |
| Duration                                           | Trigger alert immediately                                                                                 |
| Frequency                                          | Trigger alert on every poll                                                                               |
| Schedule                                           | 24 hours daily                                                                                            |
| Enable Email                                       | Selected                                                                                                  |
| Trigger Alert Action                               | Default                                                                                                   |

## LowActivePartitionAvailableDiskSpace

This alert occurs when the percentage of available disk space on the active partition is lower than the configured value.

### Default Configuration

*Table 138: Default Configuration for the LowActivePartitionAvailableDiskSpace RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Critical                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>Active Partition available disk space below (4%)<br><br><b>Note</b> In customer environments, virtual machines configured with 80 GB disk space and where 91% or more space has been reserved for disk space/active partition, a 6% increase in utilization results in automatic trigger of the LowActivePartitionAvailableDiskSpace alert after the Unified Communications Manager upgrade. Here, the alert is triggered when the Active Partition available disk space is below (2%). You must log in to RTMT to fix this issue manually. |
| Duration             | Trigger alert immediately                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Frequency            | Trigger up to 3 alerts within 30 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Schedule             | 24 hours daily                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Enable Email         | Selected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Trigger Alert Action | Default                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## LowAvailableVirtualMemory

RTMT monitors virtual memory usage. When memory runs low, a LowAvailableVirtualMemory alert is generated.

### Default Configuration

*Table 139: Default Configuration for the LowAvailableVirtualMemory RTMT Alert*

| Value                                              | Default Configuration                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                            |
| Severity                                           | Critical                                                                            |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                           |
| Threshold                                          | Trigger alert when following condition met:<br>Available virtual memory below (30%) |
| Duration                                           | Trigger alert immediately                                                           |

| Value                | Default Configuration                    |
|----------------------|------------------------------------------|
| Frequency            | Trigger up to 3 alerts within 30 minutes |
| Schedule             | 24 hours daily                           |
| Enable Email         | Selected                                 |
| Trigger Alert Action | Default                                  |

## LowInactivePartitionAvailableDiskSpace

This alert occurs when the percentage of available disk space of the inactive partition equals less than the configured value.

### Default Configuration

*Table 140: Default Configuration for the LowInactivePartitionAvailableDiskSpace RTMT Alert*

| Value                                              | Default Configuration                                                                             |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                          |
| Severity                                           | Critical                                                                                          |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                         |
| Threshold                                          | Trigger alert when following condition met:<br>Inactive Partition available disk space below (4%) |
| Duration                                           | Trigger alert immediately                                                                         |
| Frequency                                          | Trigger up to 3 alerts within 30 minutes                                                          |
| Schedule                                           | 24 hours daily                                                                                    |
| Enable Email                                       | Selected                                                                                          |
| Trigger Alert Action                               | Default                                                                                           |

## LowSwapPartitionAvailableDiskSpace

This alert indicates that the available disk space on the swap partition is low.



**Note** The swap partition is part of virtual memory, so low available swap partition disk space means low virtual memory as well.

## Default Configuration

**Table 141: Default Configuration for the LowSwapPartitionAvailableDiskSpace RTMT Alert**

| Value                                              | Default Configuration                                                                          |
|----------------------------------------------------|------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                       |
| Severity                                           | Critical                                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>Swap Partition available disk space below (10%) |
| Duration                                           | Trigger alert immediately                                                                      |
| Frequency                                          | Trigger up to 3 alerts within 30 minutes                                                       |
| Schedule                                           | 24 hours daily                                                                                 |
| Enable Email                                       | Selected                                                                                       |
| Trigger Alert Action                               | Default                                                                                        |

## ServerDown

This alert occurs when a remote node cannot be reached.



**Note** Unified Communications Manager clusters only: The ServerDown alert is generated when the currently active AMC (primary AMC or the backup AMC, if the primary is not available) cannot reach another server in a cluster. This alert identifies network connectivity issues in addition to a server down condition.

## Default Configuration

**Table 142: Default Configuration for the ServerDown RTMT Alert**

| Value                                              | Default Configuration                                              |
|----------------------------------------------------|--------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                           |
| Severity                                           | Critical                                                           |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                          |
| Threshold                                          | Trigger alert when following condition met:<br>ServerDown occurred |
| Duration                                           | Trigger alert immediately                                          |

| Value                | Default Configuration                   |
|----------------------|-----------------------------------------|
| Frequency            | Trigger up to 1 alert within 60 minutes |
| Schedule             | 24 hours daily                          |
| Enable Email         | Selected                                |
| Trigger Alert Action | Default                                 |

## SparePartitionHighWaterMarkExceeded

This alert occurs when the SparePartitionHighWaterMarkExceeded event gets generated. This indicates that the percentage of used disk space in the spare partition exceeds the configured high water mark.

### Default Configuration

*Table 143: Default Configuration for the SparePartitionHighWaterMarkExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                                        |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                     |
| Severity                                           | Critical                                                                                                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                    |
| Threshold                                          | Trigger alert when following condition met:<br>Spare Partition Used Disk Space Exceeds High Water Mark (95%) |
| Duration                                           | Trigger alert immediately                                                                                    |
| Frequency                                          | Trigger alert on every poll                                                                                  |
| Schedule                                           | 24 hours daily                                                                                               |
| Enable Email                                       | Selected                                                                                                     |
| Trigger Alert Action                               | Default                                                                                                      |

## SparePartitionLowWaterMarkExceeded

This alert occurs when the SparePartitionLowWaterMarkExceeded event gets generated. This indicates that the percentage of used disk space in the spare partition has exceeded the low water mark threshold.

## Default Configuration

**Table 144: Default Configuration for the SparePartitionLowWaterMarkExceeded RTMT Alert**

| Value                                              | Default Configuration                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                    |
| Severity                                           | Critical                                                                                                    |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                   |
| Threshold                                          | Trigger alert when following condition met:<br>Spare Partition Used Disk Space Exceeds Low Water Mark (90%) |
| Duration                                           | Trigger alert immediately                                                                                   |
| Frequency                                          | Trigger alert on every poll                                                                                 |
| Schedule                                           | 24 hours daily                                                                                              |
| Enable Email                                       | Selected                                                                                                    |
| Trigger Alert Action                               | Default                                                                                                     |

## SyslogSeverityMatchFound

This alert occurs when the SyslogSeverityMatchFound event gets generated. This indicates that a syslog message with the matching severity level exists.

### Default Configuration

**Table 145: Default Configuration for the SyslogSeverityMatchFound RTMT Alert**

| Value                                              | Default Configuration                                                                   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                |
| Severity                                           | Critical                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                               |
| Threshold                                          | Trigger alert when following condition met:<br>SyslogSeverityMatchFound event generated |
| Duration                                           | Trigger alert immediately                                                               |
| Frequency                                          | Trigger alert on every poll                                                             |
| Schedule                                           | 24 hours daily                                                                          |
| Syslog Severity Parameters                         | Critical                                                                                |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## SyslogStringMatchFound

This alert occurs when the SyslogStringMatchFound event gets generated. The alert indicates that a syslog message with the matching search string exists.

### Default Configuration

*Table 146: Default Configuration for the SyslogStringMatchFound RTMT Alert*

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                              |
| Severity                                           | Critical                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>SyslogStringMatchFound event generated |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Syslog Alert Parameters                            | (Text box for search string)                                                          |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## SystemVersionMismatched

This alert occurs when a mismatch in system version exists.

### Default Configuration

*Table 147: Default Configuration for the SystemVersionMismatched RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |
| Severity     | Critical              |

| Value                                              | Default Configuration                                                           |
|----------------------------------------------------|---------------------------------------------------------------------------------|
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                       |
| Threshold                                          | Trigger alert when following condition met:<br>SystemVersionMismatched occurred |
| Duration                                           | Trigger alert immediately                                                       |
| Frequency                                          | Trigger up to 1 alert within 60 minutes                                         |
| Schedule                                           | 24 hours daily                                                                  |
| Enable Email                                       | Selected                                                                        |
| Trigger Alert Action                               | Default                                                                         |

## TotalProcessesAndThreadsExceededThreshold

This alert occurs when the TotalProcessesAndThreadsExceededThreshold event gets generated. The alert indicates that the current total number of processes and threads exceeds the maximum number of tasks that are configured for the Cisco RIS Data Collector Service Parameter. This situation could indicate that a process is leaking or that a process has thread leaking.

### Default Configuration

*Table 148: Default Configuration for the TotalProcessesAndThreadsExceededThreshold RTMT Alert*

| Value                                              | Default Configuration                                                                                    |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                 |
| Severity                                           | Critical                                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                |
| Threshold                                          | Trigger alert when following condition met:<br>TotalProcessesAndThreadsExceededThreshold event generated |
| Duration                                           | Trigger alert immediately                                                                                |
| Frequency                                          | Trigger alert on every poll                                                                              |
| Schedule                                           | 24 hours daily                                                                                           |
| Enable Email                                       | Selected                                                                                                 |
| Trigger Alert Action                               | Default                                                                                                  |

# Voice and Video Alerts

## BeginThrottlingCallListBLFSubscriptions

This alert occurs when the BeginThrottlingCallListBLFSubscriptions event gets generated. This indicates that the Unified Communications Manager initiated a throttling of the CallList BLF Subscriptions to prevent a system overload.

### Default Configuration

*Table 149: Default Configuration for the BeginThrottlingCallListBLFSubscriptions RTMT Alert*

| Value                                              | Default Configuration                                                                                  |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                               |
| Severity                                           | Critical                                                                                               |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                              |
| Threshold                                          | Trigger alert when following condition met:<br>BeginThrottlingCallListBLFSubscriptions event generated |
| Duration                                           | Trigger alert immediately                                                                              |
| Frequency                                          | Trigger alert on every poll                                                                            |
| Schedule                                           | 24 hours daily                                                                                         |
| Enable Email                                       | Selected                                                                                               |
| Trigger Alert Action                               | Default                                                                                                |

## CallAttemptBlockedByPolicy

### Default Configuration

*Table 150: Default Configuration for the CallAttemptBlockedByPolicy RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Warning                   |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                                         |
|----------------------|-----------------------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>CallAttemptBlockedByPolicy event(s) generated. |
| Duration             | Trigger alert immediately                                                                     |
| Frequency            | Trigger up to 3 alerts every 30 minutes                                                       |
| Schedule             | 24 hours daily                                                                                |
| Enable Email         | Selected                                                                                      |
| Trigger Alert Action | Default                                                                                       |

## CallProcessingNodeCpuPegging

This alert occurs when the percentage of CPU load on a call processing server exceeds the configured percentage for the configured time.

If the administrator takes no action, high CPU pegging can lead to a Unified Communications Manager crash, especially in CallManager service. The CallProcessingNodeCpuPegging alert gives you time to work proactively to avoid a crash.

During CPU usage spikes, other alarms that may be issued in addition to the CallProcessingNodeCpuPegging alert include: CoreDumpFound, CriticalServiceDown, SDLLinkOutOfService, and NumberOfRegisteredPhonesDropped alarms.



**Note** Unified Communications Manager VMware installations can experience high CPU usage spikes while performing tasks such as DRF backups and Bulk Administration Tool exports. The processes that are commonly responsible for CPU usage spikes are gzip and DRFLocal.

If your system is generating CallProcessingNodeCpuPegging alarms, add an additional vCPU for the support of 7500 Unified Communications Manager users following the Open Virtualization Archives (OVA) template specifications for your system.

### Default Configuration

*Table 151: Default Configuration for the CallProcessingNodeCpuPegging RTMT Alert*

| Value                                              | Default Configuration                                                    |
|----------------------------------------------------|--------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                 |
| Severity                                           | Critical                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                |
| Threshold                                          | Trigger alert when following condition met:<br>Processor load over (90%) |

| Value                | Default Configuration                                                           |
|----------------------|---------------------------------------------------------------------------------|
| Duration             | Trigger alert only when value constantly below or over threshold for 60 seconds |
| Frequency            | Trigger up to 3 alerts within 30 minutes                                        |
| Schedule             | 24 hours daily                                                                  |
| Enable Email         | Selected                                                                        |
| Trigger Alert Action | Default                                                                         |

## CARIDSEngineCritical

### Default Configuration

*Table 152: Default Configuration for the CARIDSEngineCritical RTMT Alert*

| Value                                              | Default Configuration                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                          |
| Severity                                           | Critical                                                                          |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                         |
| Threshold                                          | Trigger alert when following condition met: CARIDSEngineCritical event generated. |
| Duration                                           | Trigger alert immediately                                                         |
| Frequency                                          | Trigger alert on every poll                                                       |
| Schedule                                           | 24 hours daily                                                                    |
| Enable Email                                       | Selected                                                                          |
| Trigger Alert Action                               | Default                                                                           |

## CARIDSEngineFailure

### Default Configuration

*Table 153: Default Configuration for the CARIDSEngineFailure RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |
| Severity     | Error                 |

| Value                                              | Default Configuration                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                           |
| Threshold                                          | Trigger alert when following condition met:<br>CARIDSEngineFailure event generated. |
| Duration                                           | Trigger alert immediately                                                           |
| Frequency                                          | Trigger alert on every poll                                                         |
| Schedule                                           | 24 hours daily                                                                      |
| Enable Email                                       | Selected                                                                            |
| Trigger Alert Action                               | Default                                                                             |

## CARSchedulerJobFailed

### Default Configuration

*Table 154: Default Configuration for the CARSchedulerJobFailed RTMT Alert*

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                              |
| Severity                                           | Error                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>CARSchedulerJobFailed event generated. |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## CDRAgentSendFileFailed

This alert gets raised when the CDR Agent cannot send CDR files from a Unified Communications Manager node to a CDR repository node within the Unified Communications Manager cluster.

### Default Configuration

*Table 155: Default Configuration for the CDRAgentSendFileFailed RTMT Alert*

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                              |
| Severity                                           | Critical                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>CDRAgentSendFileFailed event generated |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## CDRFileDeliveryFailed

This alert gets raised when FTP delivery of CDR files to the outside billing server fails.

### Default Configuration

*Table 156: Default Configuration for the CDRFileDeliveryFailed RTMT Alert*

| Value                                              | Default Configuration                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                             |
| Severity                                           | Critical                                                                             |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                            |
| Threshold                                          | Trigger alert when following condition met:<br>CDRFileDeliveryFailed event generated |
| Duration                                           | Trigger alert immediately                                                            |
| Frequency                                          | Trigger alert on every poll                                                          |
| Schedule                                           | 24 hours daily                                                                       |
| Enable Email                                       | Selected                                                                             |
| Trigger Alert Action                               | Default                                                                              |

## CDRHighWaterMarkExceeded

This alert gets raised when the high water mark for CDR files gets exceeded. It also indicates that some successfully delivered CDR files got deleted.

### Default Configuration

*Table 157: Default Configuration for the CDRHighWaterMarkExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                |
| Severity                                           | Critical                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                               |
| Threshold                                          | Trigger alert when following condition met:<br>CDRHighWaterMarkExceeded event generated |
| Duration                                           | Trigger alert immediately                                                               |
| Frequency                                          | Trigger alert on every poll                                                             |
| Schedule                                           | 24 hours daily                                                                          |
| Enable Email                                       | Selected                                                                                |
| Trigger Alert Action                               | Default                                                                                 |

## CDRMaximumDiskSpaceExceeded

This alarm gets raised when the CDR files disk usage exceeds the maximum disk allocation. It also indicates that some undelivered files got deleted.

### Default Configuration

*Table 158: Default Configuration for the CDRMaximumDiskSpaceExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                   |
| Severity                                           | Critical                                                                                   |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                  |
| Threshold                                          | Trigger alert when following condition met:<br>CDRMaximumDiskSpaceExceeded event generated |
| Duration                                           | Trigger alert immediately                                                                  |

| Value                | Default Configuration       |
|----------------------|-----------------------------|
| Frequency            | Trigger alert on every poll |
| Schedule             | 24 hours daily              |
| Enable Email         | Selected                    |
| Trigger Alert Action | Default                     |

## CiscoElmNotConnected

### Default Configuration

*Table 159: Default Configuration for the CiscoElmNotConnected RTMT Alert*

| Value                                              | Default Configuration                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                             |
| Severity                                           | Warning                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                            |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoElmNotConnected event generated. |
| Duration                                           | Trigger alert immediately                                                            |
| Frequency                                          | Trigger alert on every poll                                                          |
| Schedule                                           | 24 hours daily                                                                       |
| Enable Email                                       | Selected                                                                             |
| Trigger Alert Action                               | Default                                                                              |

## CiscoGraceTimeLeft

### Default Configuration

*Table 160: Default Configuration for the CiscoGraceTimeLeft RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Informational             |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                              |
|----------------------|------------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>CiscoGraceTimeLeft event generated. |
| Duration             | Trigger alert immediately                                                          |
| Frequency            | Trigger alert on every poll                                                        |
| Schedule             | 24 hours daily                                                                     |
| Enable Email         | Selected                                                                           |
| Trigger Alert Action | Default                                                                            |

## CiscoNoProvisionTimeout

### Default Configuration

*Table 161: Default Configuration for the CiscoNoProvisionTimeout RTMT Alert*

| Value                                              | Default Configuration                                                                   |
|----------------------------------------------------|-----------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                |
| Severity                                           | Error                                                                                   |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                               |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoNoProvisionTimeout event generated. |
| Duration                                           | Trigger alert immediately                                                               |
| Frequency                                          | Trigger alert on every poll                                                             |
| Schedule                                           | 24 hours daily                                                                          |
| Enable Email                                       | Selected                                                                                |
| Trigger Alert Action                               | Default                                                                                 |

## CiscoSystemInDemo

### Default Configuration

*Table 162: Default Configuration for the CiscoSystemInDemo RTMT Alert*

| Value                                              | Default Configuration                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                          |
| Severity                                           | Warning                                                                           |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                         |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoSystemInDemo event generated. |
| Duration                                           | Trigger alert immediately                                                         |
| Frequency                                          | Trigger alert on every poll                                                       |
| Schedule                                           | 24 hours daily                                                                    |
| Enable Email                                       | Selected                                                                          |
| Trigger Alert Action                               | Default                                                                           |

## CiscoSystemInOverage

### Default Configuration

*Table 163: Default Configuration for the CiscoSystemInOverage RTMT Alert*

| Value                                              | Default Configuration                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                             |
| Severity                                           | Warning                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                            |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoSystemInOverage event generated. |
| Duration                                           | Trigger alert immediately                                                            |
| Frequency                                          | Trigger alert on every poll                                                          |
| Schedule                                           | 24 hours daily                                                                       |
| Enable Email                                       | Selected                                                                             |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Trigger Alert Action | Default               |

## CiscoSystemSecurityMismatch

### Default Configuration

*Table 164: Default Configuration for the CiscoSystemSecurityMismatch RTMT Alert*

| Value                                              | Default Configuration                                                                       |
|----------------------------------------------------|---------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                    |
| Severity                                           | Warning                                                                                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                   |
| Threshold                                          | Trigger alert when following condition met:<br>CiscoSystemSecurityMismatch event generated. |
| Duration                                           | Trigger alert immediately                                                                   |
| Frequency                                          | Trigger alert on every poll                                                                 |
| Schedule                                           | 24 hours daily                                                                              |
| Enable Email                                       | Selected                                                                                    |
| Trigger Alert Action                               | Default                                                                                     |

## CodeYellow

The AverageExpectedDelay counter represents the current average expected delay to handle any incoming message. If the value exceeds the value that is specified in Code Yellow Entry Latency service parameter, the CodeYellow alarm gets generated. You can configure the CodeYellow alert to download trace files for troubleshooting purposes.

### Default Configuration

*Table 165: Default Configuration for the CodeYellow RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Critical                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                     | Default Configuration                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------|
| Threshold                 | Trigger alert when following condition met:<br>Cisco CallManager CodeYellowEntry event generated |
| Duration                  | Trigger alert immediately                                                                        |
| Frequency                 | Trigger alert on every poll                                                                      |
| Schedule                  | 24 hours daily                                                                                   |
| Trace Download Parameters | Enable Trace Download not selected                                                               |
| Enable Email              | Selected                                                                                         |
| Trigger Alert Action      | Default                                                                                          |

## DDRBlockPrevention

This alert gets triggered when the `IDSReplicationFailure` alarm with alarm number 31 occurs, which invokes a proactive procedure to avoid denial of service. This procedure does not impact call processing; you can ignore replication alarms during this process.

The procedure takes up to 60 minutes to finish. Check that RTMT replication status equals 2 on each node to make sure that the procedure is complete. Do not perform a system reboot during this process.

### Default Configuration

*Table 166: Default Configuration for the DDRBlockPrevention RTMT Alert*

| Value                                              | Default Configuration                                                                                                  |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                               |
| Severity                                           | Critical                                                                                                               |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                              |
| Threshold                                          | Trigger alert when following condition met:<br><code>IDSReplicationFailure</code> alarm with alarm number 31 generated |
| Duration                                           | Trigger alert immediately                                                                                              |
| Frequency                                          | Trigger up to 1 alert within 60 minutes                                                                                |
| Schedule                                           | 24 hours daily                                                                                                         |
| Enable Email                                       | Selected                                                                                                               |
| Trigger Alert Action                               | Default                                                                                                                |

## DDRDown

This alert gets triggered when the IDSReplicationFailure alarm with alarm number 32 occurs. An auto recover procedure runs in the background and no action is needed.

The procedure takes about 15 minutes to finish. Check that RTMT replication status equals 2 on each node to make sure the procedure is complete.

### Default Configuration

*Table 167: Default Configuration for the DDRDown RTMT Alert*

| Value                                              | Default Configuration                                                                                     |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                  |
| Severity                                           | Critical                                                                                                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                 |
| Threshold                                          | Trigger alert when following condition met:<br>IDSReplicationFailure alarm with alarm number 32 generated |
| Duration                                           | Trigger alert immediately                                                                                 |
| Frequency                                          | Trigger up to 1 alert within 60 minutes                                                                   |
| Schedule                                           | 24 hours daily                                                                                            |
| Enable Email                                       | Selected                                                                                                  |
| Trigger Alert Action                               | Default                                                                                                   |

## EMCCFailedInLocalCluster

### Default Configuration

*Table 168: Default Configuration for the EMCCFailedInLocalCluster RTMT Alert*

| Value                                              | Default Configuration                                                                       |
|----------------------------------------------------|---------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                    |
| Severity                                           | Error                                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                   |
| Threshold                                          | Trigger alert when following condition met:<br>EMCCFailedInLocalCluster event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                   |

| Value                | Default Configuration                   |
|----------------------|-----------------------------------------|
| Frequency            | Trigger up to 3 alerts every 30 minutes |
| Schedule             | 24 hours daily                          |
| Enable Email         | Selected                                |
| Trigger Alert Action | Default                                 |

## EMCCFailedInRemoteCluster

### Default Configuration

*Table 169: Default Configuration for the EMCCFailedInRemoteCluster RTMT Alert*

| Value                                              | Default Configuration                                                                        |
|----------------------------------------------------|----------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                     |
| Severity                                           | Warning                                                                                      |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                    |
| Threshold                                          | Trigger alert when following condition met:<br>EMCCFailedInRemoteCluster event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                    |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                      |
| Schedule                                           | 24 hours daily                                                                               |
| Enable Email                                       | Selected                                                                                     |
| Trigger Alert Action                               | Default                                                                                      |

## ExcessiveVoiceQualityReports

This alert gets generated when the number of QRT problems that are reported during the configured time interval exceed the configured value. The default threshold specifies 0 within 60 minutes.

### Default Configuration

*Table 170: Default Configuration for the ExcessiveVoiceQualityReports RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |
| Severity     | Critical              |

| Value                                              | Default Configuration                                                                                               |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                           |
| Threshold                                          | Trigger alert when following condition met:<br>Number of quality reports exceeds 0 times within the last 60 minutes |
| Duration                                           | Trigger alert immediately                                                                                           |
| Frequency                                          | Trigger alert on every poll                                                                                         |
| Schedule                                           | 24 hours daily                                                                                                      |
| Enable Email                                       | Selected                                                                                                            |
| Trigger Alert Action                               | Default                                                                                                             |

## ILSHubClusterUnreachable

### Default Configuration

*Table 171: Default Configuration for the ILSHubClusterUnreachable RTMT Alert*

| Value                                              | Default Configuration                                                                                          |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                       |
| Severity                                           | Alert                                                                                                          |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>A connection to the remote ILS server could not be established. |
| Duration                                           | Trigger alert immediately                                                                                      |
| Frequency                                          | Trigger alert on every poll                                                                                    |
| Schedule                                           | 24 hours daily                                                                                                 |
| Enable Email                                       | Selected                                                                                                       |
| Trigger Alert Action                               | Default                                                                                                        |

## ILSPwdAuthenticationFailed

### Default Configuration

*Table 172: Default Configuration for the ILSPwdAuthenticationFailed RTMT Alert*

| Value                                              | Default Configuration                                                                                      |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                   |
| Severity                                           | Alert                                                                                                      |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                  |
| Threshold                                          | Trigger alert when following condition met:<br>Password Authentication Failure with ILS at remote cluster. |
| Duration                                           | Trigger alert immediately                                                                                  |
| Frequency                                          | Trigger alert on every poll                                                                                |
| Schedule                                           | 24 hours daily                                                                                             |
| Enable Email                                       | Selected                                                                                                   |
| Trigger Alert Action                               | Default                                                                                                    |

## ILSTLSAuthenticationFailed

### Default Configuration

*Table 173: Default Configuration for the ILSTLSAuthenticationFailed RTMT Alert*

| Value                                              | Default Configuration                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                             |
| Severity                                           | Alert                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                            |
| Threshold                                          | Trigger alert when following condition met:<br>TLS Failure to ILS at remote cluster. |
| Duration                                           | Trigger alert immediately                                                            |
| Frequency                                          | Trigger alert on every poll                                                          |
| Schedule                                           | 24 hours daily                                                                       |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## IMEDistributedCacheInactive

This alarm gets generated when a Unified Communications Manager attempts to connect to the Cisco IME server, but the IME distributed cache is not currently active.

Ensure that the certificate for the Cisco IME server is provisioned and that the IME distributed cache has been activated through the CLI.

### Default Configuration

*Table 174: Default Configuration for the IMEDistributedCacheInactive Alert*

| Value                                              | Default Configuration                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                      |
| Severity                                           | Error                                                                         |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                     |
| Threshold                                          | Trigger alert when following condition met:<br>Inactive IME Distributed Cache |
| Duration                                           | Trigger alert immediately                                                     |
| Frequency                                          | Trigger alert on every poll                                                   |
| Schedule                                           | 24 hours daily                                                                |
| Enable Email                                       | Selected                                                                      |
| Trigger Alert Action                               | Default                                                                       |

## IMEOverQuota

This alert indicates that the Unified Communications Manager servers that use this Cisco IME service have exceed the quota for published direct inward dialing numbers (DIDs) to the IME distributed cache. The alert includes the name of the Cisco IME server as well as the current and target quota values.

Ensure that you have correctly provisioned the DID prefixes on all of the Unified Communications Manager servers that use this Cisco IME service.

If you have provisioned the prefixes correctly, you have exceeded the capacity of your Cisco IME service, and you need to configure another service and divide the DID prefixes across the Cisco IME client instances (Unified Communications Managers) on different Cisco IME services.

## Default Configuration

*Table 175: Default Configuration for the IMEOverQuota Alert*

| Value                                              | Default Configuration                                         |
|----------------------------------------------------|---------------------------------------------------------------|
| Enable Alert                                       | Selected                                                      |
| Severity                                           | Alert                                                         |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                     |
| Threshold                                          | Trigger alert when following condition met:<br>VAP over quota |
| Duration                                           | Trigger alert immediately                                     |
| Frequency                                          | Trigger alert on every poll                                   |
| Schedule                                           | 24 hours daily                                                |
| Enable Email                                       | Selected                                                      |
| Trigger Alert Action                               | Default                                                       |

## IMEQualityAlert

This alert gets generated when Unified Communications Manager determines that a substantial number of Cisco IME calls fail back to PSTN or fail to be set up due to IP network quality problems. Two types of events trigger this alert:

- A large number of the currently active Cisco IME calls have all requested fallback or have fallen back to the PSTN.
- A large number of the recent call attempts have gone to the PSTN and not been made over IP.

When you receive this alert, check your IP connectivity. If no problems exist with the IP connectivity, you may need to review the CDRs, CMRs, and logs from the firewalls to determine why calls have fallen back to the PSTN or have not been made over IP.

## Default Configuration

*Table 176: Default Configuration for the IMEQualityAlert Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Error                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                         |
|----------------------|-------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>Cisco IME link quality problem |
| Duration             | Trigger alert immediately                                                     |
| Frequency            | Trigger alert on every poll                                                   |
| Schedule             | 24 hours daily                                                                |
| Enable Email         | Selected                                                                      |
| Trigger Alert Action | Default                                                                       |

## IMEServiceStatus

This alert indicates the overall health of the connection to the Cisco IME services for a particular Cisco IME client instance (Unified Communications Manager). The alert indicates the following states:

- 0—Unknown. Likely indicates that the Cisco IME service has not been activated.
- 1—Healthy. Indicates that the Unified Communications Manager has successfully established a connection to its primary and backup servers for the Cisco IME client instance, if configured.
- 2—Unhealthy. Indicates that the Cisco IME has been activated but has not successfully completed handshake procedures with the Cisco IME server. Note that this counter reflects the handshake status of both the primary and the secondary IME servers.

### Default Configuration

*Table 177: Default Configuration for the IMEServiceStatus Alert*

| Value                                              | Default Configuration                                                 |
|----------------------------------------------------|-----------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                              |
| Severity                                           | Critical                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                             |
| Threshold                                          | Trigger alert when following condition met:<br>VAP Connection Problem |
| Duration                                           | Trigger alert immediately                                             |
| Frequency                                          | Trigger up to 1 alert every 60 minutes                                |
| Schedule                                           | 24 hours daily                                                        |
| Enable Email                                       | Selected                                                              |
| Trigger Alert Action                               | Default                                                               |

## InsufficientFallbackIdentifiers

This alert gets generated when too many Cisco IME calls that are currently in progress use the same fallback DID and no more DTMF digit sequences exist to allocate to a new Cisco IME call that Unified Communications Manager is processing. The new call continues, but the call cannot fallback to the PSTN if voice-quality deteriorates.

If this alert gets generated, note the fallback profile that associates with this call. Check that profile in Cisco Unified Communications Manager Administration, and examine the current setting for the “Fallback Number of Correlation DTMF Digits” field. Increase the value of that field by one, and check whether the new value eliminates these alerts. In general, this parameter should be large enough so that the number of simultaneous Cisco IME calls that are made to enrolled numbers that associate with that profile is always substantially less than 10 raised to the power of this number. For example, if you always have fewer than 10,000 simultaneous Cisco IME calls for the patterns that associate with this fallback profile, setting this value to 5 (10 to the power of 5 equals 100,000) should keep Unified Communications Manager from generating this alert.

However, increasing this value results in a small increase in the amount of time it takes to perform the fallback. As such, you should set the “Fallback Number of Correlation DTMF Digits” field to a value just large enough to prevent this alert from getting generated.

Instead of increasing the value of the DTMF digits field, you can add another fallback profile with a different fallback DID and associate that fallback profile with a smaller number of enrolled patterns. If you use this method, you can use a smaller number of digits.

### Default Configuration

**Table 178: Default Configuration for the InsufficientFallbackIdentifiers Alert**

| Value                                              | Default Configuration                                                              |
|----------------------------------------------------|------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                           |
| Severity                                           | Error                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                          |
| Threshold                                          | Trigger alert when following condition met:<br>Cannot allocate fallback identifier |
| Duration                                           | Trigger alert immediately                                                          |
| Frequency                                          | Trigger up to 1 alerts within one minute                                           |
| Schedule                                           | 24 hours daily                                                                     |
| Enable Email                                       | Selected                                                                           |
| Trigger Alert Action                               | Default                                                                            |

## InvalidCredentials

The alert indicates that the Unified Communications Manager cannot connect to the Cisco IME server because the username and/or password configured on Unified Communications Manager do not match those configured on the Cisco IME server.

The alert includes the username and password that were used to connect to the Cisco IME server as well as the IP address and name of the target Cisco IME server. To resolve this alert, log into the Cisco IME server and check that the configured username and password match the username and password that are configured in Unified Communications Manager.

### Default Configuration

**Table 179: Default Configuration for the InvalidCredentials Alert**

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                              |
| Severity                                           | Alert                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>Credential Failure to Cisco IME server |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## LocationOutOfResource

This alert occurs when the number of LocationOutOfResource events exceeds the configure threshold during the configured time interval. This indicates that one or all of audio or video or immersive bandwidth for a location or link is used up.

### Default Configuration

**Table 180: Default Configuration for the LocationOutOfResource Alert**

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |
| Severity     | Warning               |

| Value                                              | Default Configuration                                                                                          |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>LocationOutOfResource event generated 5 times within 60 seconds |
| Duration                                           | Trigger alert immediately                                                                                      |
| Frequency                                          | Trigger alert on every poll                                                                                    |
| Schedule                                           | 24 hours daily                                                                                                 |
| Enable Email                                       | Selected                                                                                                       |
| Trigger Alert Action                               | Default                                                                                                        |

## MaliciousCallTrace

This indicates that a malicious call exists in Unified Communications Manager. The malicious call identification (MCID) feature gets invoked.

### Default Configuration

*Table 181: Default Configuration for the MaliciousCallTrace RTMT Alert*

| Value                                              | Default Configuration                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                      |
| Severity                                           | Critical                                                                      |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                     |
| Threshold                                          | Trigger alert when following condition met:<br>Malicious call trace generated |
| Duration                                           | Trigger alert immediately                                                     |
| Frequency                                          | Trigger alert on every poll                                                   |
| Schedule                                           | 24 hours daily                                                                |
| Enable Email                                       | Selected                                                                      |
| Trigger Alert Action                               | Default                                                                       |

## MediaListExhausted

This alert occurs when the number of MediaListExhausted events exceeds the configured threshold during the configured time interval. This indicates that all available media resources that are defined in the media list are busy. The default specifies 0 within 60 minutes.

### Default Configuration

*Table 182: Default Configuration for the MediaListExhausted RTMT Alert*

| Value                                              | Default Configuration                                                                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                                      |
| Severity                                           | Warning                                                                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                                     |
| Threshold                                          | Trigger alert when following condition met:<br>Number of MediaListExhausted events exceeds 0 times within the last 60 minutes |
| Duration                                           | Trigger alert immediately                                                                                                     |
| Frequency                                          | Trigger alert on every poll                                                                                                   |
| Schedule                                           | 24 hours daily                                                                                                                |
| Enable Email                                       | Selected                                                                                                                      |
| Trigger Alert Action                               | Default                                                                                                                       |

## MgcpDChannelOutOfService

This alert gets triggered when the BRI D-Channel remains out of service.

### Default Configuration

*Table 183: Default Configuration for the MgcpDChannelOutOfService RTMT Alert*

| Value                                              | Default Configuration                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                       |
| Severity                                           | Critical                                                                       |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                      |
| Threshold                                          | Trigger alert when following condition met:<br>MGCP DChannel is out-of-service |
| Duration                                           | Trigger alert immediately                                                      |

| Value                | Default Configuration       |
|----------------------|-----------------------------|
| Frequency            | Trigger alert on every poll |
| Schedule             | 24 hours daily              |
| Enable Email         | Selected                    |
| Trigger Alert Action | Default                     |

## NumberOfRegisteredDevicesExceeded

This alert occurs when the NumberOfRegisteredDevicesExceeded event gets generated.

### Default Configuration

*Table 184: Default Configuration for the NumberOfRegisteredDevicesExceeded RTMT Alert*

| Value                                              | Default Configuration                                                                            |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                         |
| Severity                                           | Critical                                                                                         |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                        |
| Threshold                                          | Trigger alert when following condition met:<br>NumberOfRegisteredDevicesExceeded event generated |
| Duration                                           | Trigger alert immediately                                                                        |
| Frequency                                          | Trigger alert on every poll                                                                      |
| Schedule                                           | 24 hours daily                                                                                   |
| Enable Email                                       | Selected                                                                                         |
| Trigger Alert Action                               | Default                                                                                          |

## NumberOfRegisteredGatewaysDecreased

This alert occurs when the number of registered gateways in a cluster decreases between consecutive polls.

### Default Configuration

*Table 185: Default Configuration for the NumberOfRegisteredGatewaysDecreased RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Severity                                           | Critical                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>Number of registered gateway decreased |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## NumberOfRegisteredGatewaysIncreased

This alert occurs when the number of registered gateways in the cluster increased between consecutive polls.

### Default Configuration

*Table 186: Default Configuration for the NumberOfRegisteredGatewaysIncreased RTMT Alert*

| Value                | Default Configuration                                                                  |
|----------------------|----------------------------------------------------------------------------------------|
| Enable Alert         | Selected                                                                               |
| Severity             | Critical                                                                               |
| Threshold            | Trigger alert when following condition met:<br>Number of registered gateways increased |
| Duration             | Trigger alert immediately                                                              |
| Frequency            | Trigger alert on every poll                                                            |
| Schedule             | 24 hours daily                                                                         |
| Enable Email         | Selected                                                                               |
| Trigger Alert Action | Default                                                                                |

## NumberOfRegisteredMediaDevicesDecreased

This alert occurs when the number of registered media devices in a cluster decreases between consecutive polls.

### Default Configuration

*Table 187: Default Configuration for the NumberOfRegisteredMediaDevicesDecreased RTMT Alert*

| Value                | Default Configuration                                                                       |
|----------------------|---------------------------------------------------------------------------------------------|
| Enable Alert         | Selected                                                                                    |
| Severity             | Critical                                                                                    |
| Threshold            | Trigger alert when following condition met:<br>Number of registered media devices decreased |
| Duration             | Trigger alert immediately                                                                   |
| Frequency            | Trigger alert on every poll                                                                 |
| Schedule             | 24 hours daily                                                                              |
| Enable Email         | Selected                                                                                    |
| Trigger Alert Action | Default                                                                                     |

## NumberOfRegisteredMediaDevicesIncreased

This alert occurs when the number of registered media devices in a cluster increases between consecutive polls.

### Default Configuration

*Table 188: Default Configuration for the NumberOfRegisteredMediaDevicesIncreased RTMT Alert*

| Value                | Default Configuration                                                                       |
|----------------------|---------------------------------------------------------------------------------------------|
| Enable Alert         | Selected                                                                                    |
| Severity             | Critical                                                                                    |
| Threshold            | Trigger alert when following condition met:<br>Number of registered media devices increased |
| Duration             | Trigger alert immediately                                                                   |
| Frequency            | Trigger alert on every poll                                                                 |
| Schedule             | 24 hours daily                                                                              |
| Enable Email         | Selected                                                                                    |
| Trigger Alert Action | Default                                                                                     |

## NumberOfRegisteredPhonesDropped

This alert occurs when the number of registered phones in a cluster drops more than the configured percentage between consecutive polls.

### Default Configuration

*Table 189: Default Configuration for the NumberOfRegisteredPhonesDropped RTMT Alert*

| Value                | Default Configuration                                                                                 |
|----------------------|-------------------------------------------------------------------------------------------------------|
| Enable Alert         | Selected                                                                                              |
| Severity             | Critical                                                                                              |
| Threshold            | Trigger alert when following condition met:<br>Number of registered phones in the cluster drops (10%) |
| Duration             | Trigger alert immediately                                                                             |
| Frequency            | Trigger alert on every poll                                                                           |
| Schedule             | 24 hours daily                                                                                        |
| Enable Email         | Selected                                                                                              |
| Trigger Alert Action | Default                                                                                               |

## RecordingCallSetupFail

### Default Configuration

*Table 190: Default Configuration for the RecordingCallSetupFail RTMT Alert*

| Value                                              | Default Configuration                                                                    |
|----------------------------------------------------|------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                 |
| Severity                                           | Error                                                                                    |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                |
| Threshold                                          | Trigger alert when following condition met:<br>RecordingCallSetupFail event(s) generated |
| Duration                                           | Trigger alert immediately                                                                |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                  |
| Schedule                                           | 24 hours daily                                                                           |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## RecordingGatewayRegistrationRejected

### Default Configuration

*Table 191: Default Configuration for the RecordingGatewayRegistrationRejected RTMT Alert*

| Value                                              | Default Configuration                                                                                   |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                |
| Severity                                           | Error                                                                                                   |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                               |
| Threshold                                          | Trigger alert when following condition met:<br>RecordingGatewayRegistrationRejected event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                               |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                                 |
| Schedule                                           | 24 hours daily                                                                                          |
| Enable Email                                       | Selected                                                                                                |
| Trigger Alert Action                               | Default                                                                                                 |

## RecordingGatewayRegistrationTimeout

### Default Configuration

*Table 192: Default Configuration for the RecordingGatewayRegistrationTimeout RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Error                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                                                  |
|----------------------|--------------------------------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>RecordingGatewayRegistrationTimeout event(s) generated. |
| Duration             | Trigger alert immediately                                                                              |
| Frequency            | Trigger up to 3 alerts every 30 minutes                                                                |
| Schedule             | 24 hours daily                                                                                         |
| Enable Email         | Selected                                                                                               |
| Trigger Alert Action | Default                                                                                                |

## RecordingGatewaySessionFailed

### Default Configuration

*Table 193: Default Configuration for the RecordingGatewaySessionFailed RTMT Alert*

| Value                                              | Default Configuration                                                                            |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                         |
| Severity                                           | Error                                                                                            |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                        |
| Threshold                                          | Trigger alert when following condition met:<br>RecordingGatewaySessionFailed event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                        |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                          |
| Schedule                                           | 24 hours daily                                                                                   |
| Enable Email                                       | Selected                                                                                         |
| Trigger Alert Action                               | Default                                                                                          |

## RecordingResourcesNotAvailable

### Default Configuration

*Table 194: Default Configuration for the RecordingResourcesNotAvailable RTMT Alert*

| Value                                              | Default Configuration                                                                                  |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                               |
| Severity                                           | Warning                                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                              |
| Threshold                                          | Trigger alert when following condition met:<br>RecordingGatewayRegistrationTimeout event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                              |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                                |
| Schedule                                           | 24 hours daily                                                                                         |
| Enable Email                                       | Selected                                                                                               |
| Trigger Alert Action                               | Default                                                                                                |

## RecordingSessionTerminatedUnexpectedly

### Default Configuration

*Table 195: Default Configuration for the RecordingSessionTerminatedUnexpectedly RTMT Alert*

| Value                                              | Default Configuration                                                                     |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                  |
| Severity                                           | Error                                                                                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                 |
| Threshold                                          | Trigger alert when following condition met:<br>RecordingCallSetupFail event(s) generated. |
| Duration                                           | Trigger alert immediately                                                                 |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                                   |
| Schedule                                           | 24 hours daily                                                                            |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## RouteListExhausted

This alert occurs when the number of RouteListExhausted events exceeds the configured threshold during the configured time interval. This indicates that all available channels that are defined in the route list are busy. The default specifies 0 within 60 minutes.

### Default Configuration

*Table 196: Default Configuration for the RouteListExhausted RTMT Alert*

| Value                                              | Default Configuration                                                                                                  |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                               |
| Severity                                           | Warning                                                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                              |
| Threshold                                          | Trigger alert when following condition met:<br>Number of RouteListExhausted exceeds 0 times within the last 60 minutes |
| Duration                                           | Trigger alert immediately                                                                                              |
| Frequency                                          | Trigger alert on every poll                                                                                            |
| Schedule                                           | 24 hours daily                                                                                                         |
| Enable Email                                       | Selected                                                                                                               |
| Trigger Alert Action                               | Default                                                                                                                |

## RTMTSessionsExceedsThreshold

### Default Configuration

*Table 197: Default Configuration for the RTMTSessionsExceedsThreshold RTMT Alert*

| Value                                              | Default Configuration     |
|----------------------------------------------------|---------------------------|
| Enable Alert                                       | Selected                  |
| Severity                                           | Alert                     |
| Enable/Disable this alert on the following servers | Enabled on listed servers |

| Value                | Default Configuration                                                                       |
|----------------------|---------------------------------------------------------------------------------------------|
| Threshold            | Trigger alert when following condition met:<br>When number of ast session is more than 250. |
| Duration             | Trigger alert immediately                                                                   |
| Frequency            | Trigger alert on every poll                                                                 |
| Schedule             | 24 hours daily                                                                              |
| Enable Email         | Selected                                                                                    |
| Trigger Alert Action | Default                                                                                     |

## SDLLinkOutOfService

This alert occurs when the SDLLinkOutOfService event gets generated. This event indicates that the local Unified Communications Manager cannot communicate with the remote Unified Communications Manager. This event usually indicates network errors or a non-running remote Unified Communications Manager.

### Default Configuration

*Table 198: Default Configuration for the SDLLinkOutOfService RTMT Alert*

| Value                                              | Default Configuration                                                              |
|----------------------------------------------------|------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                           |
| Severity                                           | Critical                                                                           |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                          |
| Threshold                                          | Trigger alert when following condition met:<br>SDLLinkOutOfService event generated |
| Duration                                           | Trigger alert immediately                                                          |
| Frequency                                          | Trigger alert on every poll                                                        |
| Schedule                                           | 24 hours daily                                                                     |
| Enable Email                                       | Selected                                                                           |
| Trigger Alert Action                               | Default                                                                            |

## SmartLicense\_SLR\_InEval

This alert occurs when Cisco Unified Communications Manager running in the Evaluation period is enabled for Specified License Reservation and pending installation of reserved authorization code.

## Default Configuration

*Table 199: Default Configuration for the SmartLicense\_SLR\_InEval RTMT Alert*

| Value                                                 | Default Configuration                                                                         |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Enable Alert                                          | Selected                                                                                      |
| Severity                                              | Warning                                                                                       |
| Enable or Disable this alert on the following servers | Enabled on listed servers                                                                     |
| Threshold                                             | Trigger alert when following condition met:<br><b>SmartLicense_SLR_InEval</b> event generated |
| Duration                                              | Trigger alert immediately                                                                     |
| Frequency                                             | Trigger alert on every poll                                                                   |
| Schedule                                              | 24 hours daily                                                                                |
| Enable Email                                          | Selected                                                                                      |
| Trigger Alert Action                                  | Default                                                                                       |

## SmartLicense\_SLR\_NoProvision\_EvalExpired

This alert occurs when the Unified Communications Manager license Evaluation period is expired and pending installation of Specified license reservation authorization code.

### Default Configuration

*Table 200: Default Configuration for the SmartLicense\_SLR\_NoProvision\_EvalExpired RTMT Alert*

| Value                                                 | Default Configuration                                                                                          |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Enable Alert                                          | Selected                                                                                                       |
| Severity                                              | Critical                                                                                                       |
| Enable or Disable this alert on the following servers | Enabled on listed servers                                                                                      |
| Threshold                                             | Trigger alert when following condition met:<br><b>SmartLicense_SLR_NoProvision_EvalExpired</b> event generated |
| Duration                                              | Trigger alert immediately                                                                                      |
| Frequency                                             | Trigger alert on every poll                                                                                    |
| Schedule                                              | 24 hours daily                                                                                                 |
| Enable Email                                          | Selected                                                                                                       |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Trigger Alert Action | Default               |

## SmartLicense\_SLR\_ExportControlNotAllowed

This alert occurs when Unified Communication Manager has mixed-mode and Specific License Reservation is enabled, and also when Unified Communication Manager in Evaluation mode, Evaluation period expired, and Registered-Specific License Reservation states.

### Default Configuration

*Table 201: Default Configuration for the SmartLicense\_SLR\_ExportControlNotAllowed RTMT Alert*

| Value                                                 | Default Configuration                                                                                          |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Enable Alert                                          | Selected                                                                                                       |
| Severity                                              | Alert                                                                                                          |
| Enable or Disable this alert on the following servers | Enabled on listed servers                                                                                      |
| Threshold                                             | Trigger alert when following condition met:<br><b>SmartLicense_SLR_ExportControlNotAllowed</b> event generated |
| Duration                                              | Trigger alert immediately                                                                                      |
| Frequency                                             | Trigger alert on every poll                                                                                    |
| Schedule                                              | 24 hours daily                                                                                                 |
| Enable Email                                          | Selected                                                                                                       |
| Trigger Alert Action                                  | Default                                                                                                        |

## TCPSetupToIMEFailed

This alert occurs when Unified Communications Manager cannot establish a TCP connection to a Cisco IME server. This alert typically occurs when the IP address and port of the Cisco IME server are misconfigured in Unified Communications Manager or when an Intranet connectivity problem exists and prevents the connection from being set up.

Ensure that the IP address and port of the Cisco IME server in the alert are valid. If the problem persists, test the connectivity between the Unified Communications Manager servers and the Cisco IME server.

## Default Configuration

*Table 202: Default Configuration for the TCPSetupToIMEFailed Alert*

| Value                                              | Default Configuration                                                                 |
|----------------------------------------------------|---------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                              |
| Severity                                           | Critical                                                                              |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>Connection Failure to Cisco IME server |
| Duration                                           | Trigger alert immediately                                                             |
| Frequency                                          | Trigger alert on every poll                                                           |
| Schedule                                           | 24 hours daily                                                                        |
| Enable Email                                       | Selected                                                                              |
| Trigger Alert Action                               | Default                                                                               |

## TLSConnectionToIMEFailed

This alert occurs when a TLS connection to the Cisco IME service could not be established because the certificate presented by the Cisco IME service has expired or is not in the Unified Communications Manager CTL.

Ensure that the Cisco IME service certificate has been configured into the Unified Communications Manager.

## Default Configuration

*Table 203: Default Configuration for the TLSConnectionToIMEFailed Alert*

| Value                                              | Default Configuration                                                           |
|----------------------------------------------------|---------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                        |
| Severity                                           | Alert                                                                           |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                       |
| Threshold                                          | Trigger alert when following condition met:<br>TLS Failure to Cisco IME service |
| Duration                                           | Trigger alert immediately                                                       |
| Frequency                                          | Trigger alert on every poll                                                     |
| Schedule                                           | 24 hours daily                                                                  |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## UserInputFailure

### Default Configuration

*Table 204: Default Configuration for the UserInputFailure RTMT Alert*

| Value                                              | Default Configuration                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                            |
| Severity                                           | Warning                                                                             |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                           |
| Threshold                                          | Trigger alert when following condition met:<br>UserInputFailure event(s) generated. |
| Duration                                           | Trigger alert immediately                                                           |
| Frequency                                          | Trigger up to 3 alerts every 30 minutes                                             |
| Schedule                                           | 24 hours daily                                                                      |
| Enable Email                                       | Selected                                                                            |
| Trigger Alert Action                               | Default                                                                             |

## IM and Presence Service Alerts

### CTIGWModuleNotEnabled

#### Alert Description

This alert indicates that the Cisco CTI Gateway application is either not fully configured or enabled.

#### Unified RTMT Default Threshold

Not applicable.

#### Recommended Actions

Configure and enable the Cisco CTI Gateway application using the Unified Communications Manager IM and Presence CTI Gateway Settings page.

## CTIGWProviderFailedtoOpen

**Type**

IM and Presence Service

**Alert Description**

This alert indicates that the CTI Provider failed to open due to a configuration error.

**Unified RTMT Default Threshold**

Not Applicable.

**Recommended Actions**

Verify the Unified Communications Manager addresses and application user credentials on the Administration GUI CTI Settings page.

## CTIGWQBFailedRequest

**Alert Description**

This alert indicates that the Cisco CTI Gateway application received a failed response to a request.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## CTIGWSystemError

**Alert Description**

This alert indicates Cisco CTI Gateway application system errors.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## CTIGWUserNotAuthorized

**Alert Description**

This alert indicates that the user failed to authorized due to wrong device or line DN.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify user device configuration and MOC settings.

## CTIGWUserNotLicenced

**Alert Description**

This alert indicates that the user failed to authorize due to no license available.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco CTI Gateway application license and user configuration.

## EspConfigAgentFileWriteError

**Alert Description**

This alert indicates that the Cisco Config Agent service cannot write to the file system.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Using Unified RTMT, verify whether the disk space is low or exhausted. This alarm may indicate that the system is overloaded, which may require reassigning users to other nodes in the IM and Presence Service cluster. You can reassign users to other nodes using the Topology page on the IM and Presence Service Administration GUI.

## EspConfigAgentHighCPUUtilization

**Alert Description**

This alert indicates that CPU utilization has exceeded the configured threshold.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Unified RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## EspConfigAgentHighMemoryUtilization

**Alert Description**

This alert indicates that the virtual memory utilization has exceeded the configured threshold.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Unified RTMT to monitor memory utilization and reduce system load to improve performance if necessary.

## EspConfigAgentLocalDBAccessError

**Alert Description**

This alert indicates that the Cisco Config Agent service failed to read or write to the local IM and Presence Service database.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify the system health using Cisco RTMT. Verify that the service A Cisco DB is running.

## EspConfigAgentMemAllocError

**Alert Description**

This alert indicates that the Cisco Config Agent service cannot allocate memory.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Using Unified RTMT, verify if the system memory is low or exhausted. This alarm may indicate that the system is overloaded which may require reassigning users to other nodes in the IM and Presence Service cluster. You can reassign users to other nodes using the Topology page on the IM and Presence Service Administration GUI.

## EspConfigAgentNetworkOutage

**Alert Description**

This alert indicates Cisco Config Agent network outage.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify system health and network connectivity using Cisco RTMT.

## EspConfigAgentNetworkRestored

**Alert Description**

This alert indicates that Cisco Config Agent network is restored.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify system health and network connectivity using Cisco RTMT.

## EspConfigAgentProxyDomainNotConfigured

**Alert Description**

This alert indicates that the Cisco Config Agent service is not configured. Cisco Config Agent service uses the proxy domain to properly generate ACLs. If not configured it could lead to routing failures.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Go to the Service Parameters drop-down menu on the IM and Presence Service publisher. Select the Cisco SIP Proxy service. Enter the IM and Presence Service domain into the Proxy Domain service parameter and save.

## EspConfigAgentRemoteDBAccessError

**Alert Description**

This alert indicates that the Cisco Config Agent service cannot access a remote IM and Presence Service database.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify that the service A Cisco DB is running on the node specified in the alert. Sometimes these errors can be transient. In some cases the Config Agent may be accessing remote nodes that are not available for some reason. If that is the case, then this error is expected. This result would happen in a user reassignment to a node that is not installed or available.

## EspConfigAgentSharedMemoryStaticRouteError

**Alert Description**

This alert indicates that the Cisco Config Agent service failed to access static routes in shared memory. This may indicate that the system is out of memory.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Using Cisco RTMT, verify if the system shared memory is low or exhausted. This alarm may indicate the system is overloaded which may require reassigning users to other nodes in the IM and Presence Service cluster. You can reassign users to other nodes using the Topology page on the Administration GUI.

## ESPConfigError

**Alert Description**

This alert indicates Cisco SIP Proxy service configuration file error.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify that the Cisco Config Agent service is running. This service is responsible for writing the proxy configuration file.

## ESPConfigNotFound

**Alert Description**

This alert indicates that Cisco SIP Proxy service configuration file is not found.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Verify that the configuration files `/usr/local/sip/conf/sipd.conf` and `/usr/local/sip/conf/dynamic.sipd.conf` exist on the IM and Presence server.

## ESPCreateLockFailed

**Alert Description**

This alert indicates that lock file has not been created.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPLoginError

**Alert Description**

This alert indicates that an error occurred while communicating with the login datastore.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPMallocFailure

**Alert Description**

This alert indicates that memory allocation has failed. This may indicate a low or no memory issue with the server.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Unified RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESP NAPTR Invalid Record

**Alert Description**

This alert indicates that NAPTR record format error.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESP Passed Param Invalid

**Alert Description**

This alert indicates that invalid parameters were specified. This could be because the parameters were NULL.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Unified RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESP Registry Error

**Alert Description**

This alert indicates that it is not possible to add registration to the SIP Registry because a resource limit was exceeded.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESP Routing Error

**Alert Description**

This alert indicates SIP Route Interface resource limit exceeded error.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPSharedMemAllocFailed

**Alert Description**

This alert indicates that the Cisco SIP Proxy service failed to allocate shared memory segments while trying to initialize tables.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages and contact Cisco TAC for assistance.

## ESPSharedMemCreateFailed

**Alert Description**

This alert indicates that the Cisco SIP Proxy service failed to create shared memory segments while trying to initialize tables.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages, and contact Cisco TAC for assistance.

## ESPSharedMemSetPermFailed

**Alert Description**

This alert indicates that the Cisco SIP Proxy service failed to set permissions on shared memory segments while trying to initialize tables.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages, and contact Cisco TAC for assistance.

## ESPSocketError

**Alert Description**

This alert indicates network socket errors that could be caused by binding errors such as get socket address failures.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPStatsLogFileOpenFailed

**Alert Description**

This alert indicates that the Cisco SIP Proxy service stats log file has failed to open.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPStopped

**Alert Description**

This alert indicates that the Cisco SIP Proxy service child process has stopped.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

If the administrator has not manually stopped the Proxy service, this may indicate a problem. Use Unified RTMT to check for any related alarms and contact Cisco TAC for assistance.

## ESPVirtualProxyError

**Alert Description**

This alert indicates Virtual\_Proxy\_Domain related error.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPWrongHostName

**Alert Description**

This alert indicates an invalid IP address or an unresolvable hostname.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ESPWrongIPAddress

**Alert Description**

This alert indicates that an invalid IP address has been provided.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## ICSACertificateCASignedTrustCertFound

**Alert Description**

This alert indicates that the Cisco Intercluster Sync Agent service has detected a signed CA trust certificate.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Allow only unsigned CA trust certificates.

## ICSACertificateFingerPrintMisMatch

**Alert Description**

This alert indicates that the Cisco Intercluster Sync Agent service detected a fingerprint mismatch on the certificate being processed.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Use the IM and Presence Service OS Administration GUI to compare the certificates that are loaded on this server with the certificates on the source server. You might need to delete the problem certificates and reload them.

## ICSACertificateValidationFailure

**Alert Description**

This alert indicates that the Cisco Intercluster Sync Agent service detected a validation error on the certificate being processed.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Use the IM and Presence OS Administration GUI to compare the certificates that are loaded on this server with the certificates on the source server. You might need to delete the problem certificates and reload them.

## InterclusterSyncAgentAXLConnectionFailed

**Alert Description**

This alert indicates that the Cisco Intercluster Sync Agent service failed authentication to the remote IM and Presence Service cluster and therefore cannot connect.

**Unified RTMT Default Threshold**

Not Applicable.

**Recommended Actions**

Verify that the AXL credentials are correct and whether the Cisco AXL Web service is running on the remote IM and Presence Service cluster.

## InterclusterSyncAgentPeerDuplicate

**Alert Description**

This alert indicates that the Cisco Intercluster Sync Agent service failed to sync user location data from a remote peer. The remote peer is from an IM and Presence Service cluster that already has a peer in the local cluster.

**Unified RTMT Default Threshold**

Not Applicable.

**Recommended Actions**

Verify that the hostname of the remote peer is not a secondary node from the identified existing peer. If the new peer is a secondary node, then remove this peer from the IM and Presence Service Administration GUI Inter-cluster details page. You can also run the System Troubleshooter for more details.

## LegacyCUPCLogin

**Alert Description**

This alert indicates that a legacy Cisco Unified Personal Communicator client has attempted to login to the Cisco Client Profile Agent service.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Upgrade the legacy Cisco Unified Personal Communicator client as it is currently not supported.

## NotInCucmServerListError

**Alert Description**

This alert indicates that the Cisco Sync Agent failed to start because the IM and Presence node is not in the server list on the Unified Communications Manager publisher.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Add the IM and Presence node to the server list on the Unified Communications Manager server and start the Cisco Sync Agent service.

## PEAutoRecoveryFailed

**Alert Description**

This alert indicates that an error occurred during the startup sequence of the Cisco Presence Engine service.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

This error may indicate a possible configuration issue. Correct the problem identified in the failure message.

## PEDatabaseError

**Alert Description**

This alert indicates that the Cisco Presence Engine service encountered an error while retrieving information from the database. This may indicate a problem with the Cisco DB service.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Verify that the Cisco DB service is running. Use Unified RTMT to check the Cisco Presence Engine service logs for errors. Consult Cisco TAC for guidance.

## PEIDSQueryError

**Alert Description**

This alert indicates that the Cisco Presence Engine service has detected an error while querying the IM and Presence Service database.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Restart the Cisco Presence Engine service when convenient. See the associated error message and log files and consult Cisco TAC if the problem persists.

## PEIDSSubscribeError

**Alert Description**

This alert indicates that the Cisco Presence Engine service was unable to subscribe for IM and Presence Service database change notifications.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Restart the Cisco Presence Engine service when convenient. See the associated error message and log files and consult Cisco TAC if the problem persists.

## PEIDStoIMDBDatabaseSyncError

**Alert Description**

This alert indicates that synchronization between the IM and Presence database and the Cisco Presence Engine and a database service has failed (Cisco Login Datastore, Cisco Route Datastore, Cisco Presence Datastore, and Cisco SIP Registration Datastore).

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Restart the Cisco Presence Engine service when convenient. See associated error message and log files and consult Cisco TAC if the problem persists.

## PELoadHighWaterMark

### Alert Description

This alert indicates that the Cisco Presence Engine service has exceeded CPU utilization threshold.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Inspect the number of active subscription counters using Cisco RTMT: ActiveSubscriptions, ActiveViews, SubscriptionActiveReceivedFromForeign, and SubscriptionActiveSentForeign. If this condition persists, you may consider moving users to a different IM and Presence Service node in the cluster.

## PEMemoryHighCondition

### Alert Description

This alert indicates that the Cisco Presence Engine service has hit a high memory threshold.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Check the number of active subscription counters: ActiveSubscriptions, ActiveViews, SubscriptionActiveReceivedFromForeign, and SubscriptionActiveSentForeign using Unified RTMT. If this condition persists, offload some users to a different IM and Presence node in the cluster.

## PEPeerNodeFailure

### Alert Description

This alert indicates that Cisco Presence Engine service on the peer node of a subcluster has failed.

### Unified RTMT Default Threshold

Not Applicable

### Recommended Actions

Use Cisco Unified Serviceability to verify that the Cisco Presence Engine service is running. Consult Cisco TAC for further assistance.

## PEsipSocketBindFailure

### Alert Description

This alert indicates that the Cisco Presence Engine service cannot connect to the indicated configured interface. No SIP traffic can be processed on this interface.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Verify that the Cisco Presence Engine service listen interface is configured correctly on the IM and Presence Service Administration GUI Application Listener page. Verify that no other process is listening on the same port using netstat.

## PEStateDisabled

### Alert Description

This alert indicates that the Cisco Presence Engine service is inoperable and cannot process traffic.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the log files and monitor the Cisco Presence Engine service with Unified RTMT.

## PEStateLocked

**Alert Description**

This alert indicates that the Cisco Presence Engine service is administratively prohibited from processing traffic.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

This alert is only for notification purpose. No action is required.

## PEWebDAVInitializationFailure

**Alert Description**

This alert indicates that the Cisco Presence Engine service has failed to initialize the WebDAV library.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Restart the Cisco Presence Engine service.

## PWSAboveCPULimit

**Alert Description**

This alert indicates that the Presence Web Service module running in the Cisco SIP Proxy service has detected that the CPU utilization has exceeded the configured threshold. During this time, new requests are blocked until the CPU utilization drops below the configured threshold.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Using Unified RTMT, inspect the Cisco SIP Proxy service logs for more details.

## PWSAboveSipSubscriptionLimit

**Alert Description**

This alert indicates that the Presence Web Service running in the Cisco SIP Proxy service has detected that the subscription count has exceeded the configured limit. During this time the Presence Web Service will block new incoming SIP subscriptions until the subscription count drops below the configured limit.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Using Cisco RTMT, inspect the Cisco SIP Proxy service logs for more details.

## PWSRequestLimitReached

**Alert Description**

This alert indicates that the Cisco SIP Proxy service request per second limit has been reached.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

You may need to throttle back the incoming request rate.

## PWSSCBFindFailed

**Alert Description**

This alert indicates that a call to find\_scb() returned NULL which indicates the SCB lookup failed.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## PWSSCBInitFailed

**Alert Description**

This alert indicates that SCB init has failed.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Restart the Cisco SIP Proxy service.

## SRMFailover

**Type**

IM and Presence Service

**Alert Description**

This alert indicates that the Server Recovery Manager is performing an automatic failover.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Verify that the failed node is up and that critical services are running.

## SRMFailed

**Alert Description**

This alert indicates that the Server Recovery Manager is in the Failed state.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

When it is convenient restart the Server Recovery Manager.

## UASCBFindFailed

**Alert Description**

This alert indicates that a call to `find_scb()` returned NULL which indicates the SCB lookup failed.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## UASCBGetFailed

**Alert Description**

This alert indicates that a call to `tchtable_acquire_tcb()` returned NULL which indicates a SCB get/create failure.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Use Cisco RTMT to check the Cisco SIP Proxy service trace log file for any detailed error messages.

## XcpCmComponentConnectError

**Alert Description**

This alert indicates that the Cisco XCP Connection Manager is shutting down because it failed to connect to the Cisco XCP Router.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP Connection Manager log file for more details.

## XcpCmPauseSockets

**Alert Description**

This alert indicates that the outstanding XCP internal packet or database requests have reached configured limit. Client connections will be paused until pending requests have dropped back below threshold. Users will experience lag until issue is resolved. Users may be disconnected if configured timeout is reached before resolution.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the XCP Router log file for more details. Monitor client disconnecting due to timeout from the XCP Connection Managers.

## XcpCmStartupError

**Alert Description**

This alert indicates that the XCP Connection Manager service failed to startup.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the CM log file for more details.

## XcpCmXmppdError

**Alert Description**

This alert indicates that the XCP Connection Manager (CM) service has errors in the XMPP interface.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the CM log file for more details.

## XCPConfigMgrConfigurationFailure

**Alert Description**

This alert indicates that the Cisco XCP Config Manager failed to successfully update XCP configuration.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

See the Cisco XCP Config Manager logs for the root cause. Contact Cisco TAC for assistance.

## XCPConfigMgrHostNameResolutionFailed

**Alert Description**

This alert indicates that the Cisco XCP Config Manager could not resolve a DNS name to allow Cisco XCP Routers to connect to that node.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Verify DNS resolvability of all hostnames and FQDNs in both local and remote clusters. Restart the Cisco XCP Config Manager and then restart the Cisco XCP Router after DNS is resolvable.

## XCPConfigMgrJabberRestartRequired

**Alert Description**

This alert indicates that the Cisco XCP Config Manager has regenerated XCP XML files after system halt due to buffer size. The Cisco XCP Router must now be restarted to apply changes.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

When it is convenient to do so, restart the Cisco XCP Router.

## XCPConfigMgrR2RPasswordEncryptionFailed

### Alert Description

This alert indicates that the Cisco XCP Config Manager was unable to encrypt the password that is associated with an Inter-cluster Router-to-Router configuration.

### Unified RTMT Default Threshold

Not Applicable

### Recommended Actions

When it is convenient to do so, restart the Cisco XCP Config Manager and then restart the Cisco XCP Router.

## XCPConfigMgrR2RRequestTimedOut

### Alert Description

This alert indicates that Cisco XCP Config Manager sent an R2R configuration request to the XCP Router, but the XCP Router did not acknowledge the request in the time allowed.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Restart the Cisco XCP Config Manager and then restart the XCP Router.

## XcpDBConnectError

### Alert Description

Cisco XCP data access layer was unable to connect to the DB. This may indicate that the local or external database is down or the network connectivity to the external database is lost.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Check the System Troubleshooter for more information. Also check that the external database is running healthy and if there is any problem with the network connectivity to the external database server.

## XcpMdnsStartError

### Alert Description

This alert indicates that the XCP Router failed to startup the Multicast Domain Name Service (MDNS). This can cause connectivity failures to other routers in the cluster.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Check the XCP Router log file for more details.

## XcpSIPFedCmComponentConnectError

### Alert Description

This alert indicates that the Cisco XCP SIP Federation Connection Manager is shutting down as it failed to connect to the Cisco XCP Router.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP SIP Federation Connection Manager log file for more details.

## XcpSIPFedCmStartupError

**Alert Description**

This alert indicates that the Cisco XCP SIP Federation Connection Manager service has failed to start.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP SIP Federation Connection Manager log file for more details.

## XcpSIPGWStackResourceError

**Alert Description**

This alert indicates that the maximum supported concurrent SIP Federation subscriptions or SIP Federation IM sessions has been reached, and the Cisco XCP SIP Federation Connection Manager does not have the resources that are required to handle any addition subscriptions or IM sessions.

**Unified RTMT Default Threshold**

Not Applicable

**Recommended Actions**

Increase the Pre-allocated SIP stack memory Service Parameter for the Cisco XCP SIP Federation Connection Manager. Note: If you are changing this setting, make sure that you have the memory available. If you do not have enough memory, you may have reached the limit of your hardware capability.

## XcpThirdPartyComplianceConnectError

**Alert Description**

This alert indicates that Cisco XCP Router is unable to connect to the Third Party Compliance Server. This may be because of a network problem or a Third Party Compliance Server configuration or licensing problem.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

This is a serious error that breaks IM on the IM and Presence Service. Check network connection to and configuration(including licensing) on Third Party Compliance Server. To restore IM services set the Compliance Settings option in the Administration GUI to Not Configured until the connection failure cause is identified.

## XcpTxtConfDBConnectError

**Alert Description**

This alert indicates that the Cisco XCP Text Conferencing data access layer was unable to connect to the external database.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the system troubleshooter for more information. Also check if the external database is running properly and if there is any problem with the network connectivity to the external database server.

## XcpTxtConfGearError

**Alert Description**

This alert indicates that the XCP Text Conference Manager (TC) Service has failed to load a configured component. This can prevent the service to start or behave as expected.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the XCP Text Conference log file for more details.

## XcpWebCmComponentConnectError

**Alert Description**

This alert indicates that the Cisco XCP Web Connection Manager is shutting down as it failed to connect to the Cisco XCP Router.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP Web Connection Manager log file for more details.

## XcpWebCmHttpdError

**Alert Description**

This alert indicates that the Cisco XCP Web Connection Manager service has errors in the HTTP interface.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP Web Connection Manager log file for more details.

## XcpWebCmStartupError

**Alert Description**

This alert indicates that the Cisco XCP Web Connection Manager service has failed to start.

**Unified RTMT Default Threshold**

Not applicable.

**Recommended Actions**

Check the Cisco XCP Web Connection Manager log file for more details.

## XcpXMPPFedCmComponentConnectError

### Alert Description

This alert indicates that the Cisco XCP XMPP Federation Connection Manager is shutting down because it failed to connect to the Cisco XCP Router.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Check the Cisco XCP XMPP Federation Connection Manager log file for more details.

## XcpXMPPFedCmStartupError

### Alert Description

This alert occurs when the XCP XMPP Federation Connection Manager service failed to startup.

### Unified RTMT Default Threshold

Not applicable.

### Recommended Actions

Please check the CM log file for more details.

## Intercompany Media Engine Alerts

### BannedFromNetwork

This alert indicates that network administrators have banned this Cisco IME server from the network (IME distributed cache ring), making this Cisco IME service fully or partly inoperative. Network administrators rarely ban servers but do so if they detect that the server is being used to launch malicious attacks into the network. If you receive this alert in error, contact TAC immediately.

### Default Configuration

*Table 205: Default Configuration for the BannedFromNetwork Alert*

| Value                                              | Default Configuration                                                                |
|----------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                             |
| Severity                                           | Alert                                                                                |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                            |
| Threshold                                          | Trigger alert when following condition met:<br>Cisco IME service banned from network |
| Duration                                           | Trigger alert immediately                                                            |
| Frequency                                          | Trigger alert on every poll                                                          |
| Schedule                                           | 24 hours daily                                                                       |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## IMEDistributedCacheCertificateExpiring

This alert indicates the number of days that remain until the certificate that is used for the IME distributed cache expires. You must replace the certificate prior to expiration.

### Default Configuration

*Table 206: Default Configuration for the IMEDistributedCacheCertificateExpiring Alert*

| Value                                              | Default Configuration                                                                                            |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                         |
| Severity                                           | Warning                                                                                                          |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                        |
| Threshold                                          | Trigger alert when following condition met:<br>Cisco IME distributed cache certificate about to expire. 14 days. |
| Duration                                           | Trigger alert immediately                                                                                        |
| Frequency                                          | Trigger up to 1 alerts within 1440 minutes                                                                       |
| Schedule                                           | 24 hours daily                                                                                                   |
| Enable Email                                       | Selected                                                                                                         |
| Trigger Alert Action                               | Default                                                                                                          |

## IMEDistributedCacheFailure

This alert indicates the health of the IME distributed cache. A value of zero (red) means that the IME distributed cache is suffering from a significant problem such as one of the following conditions:

- The Cisco IME cannot resolve issues after the network was partitioned. In this case, validation attempts may fail.
- The Cisco IME service is not connected to the network at all and is unable to reach the bootstrap servers.

A value of one (yellow) indicates that the Cisco IME network is experiencing minor issues, such as connectivity between bootstrap servers or other Cisco IME network issues. Check for any alarms that may indicate why this counter is 1. A value of two indicates that IME distributed cache is functioning normally and the system is considered healthy.

## Default Configuration

**Table 207: Default Configuration for the IMEDistributedCacheFailure Alert**

| Value                                              | Default Configuration                                                                                                                                 |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                                                                              |
| Severity                                           | Alert                                                                                                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                                                                             |
| Threshold                                          | Trigger alert when following condition met:<br>IME distributed cache failure in states<br>1: network experience minor issues<br>0: network in trouble |
| Duration                                           | Trigger alert immediately                                                                                                                             |
| Frequency                                          | Trigger 1 alert within 60 minutes                                                                                                                     |
| Schedule                                           | 24 hours daily                                                                                                                                        |
| Enable Email                                       | Selected                                                                                                                                              |
| Trigger Alert Action                               | Default                                                                                                                                               |

## IMESdLinkOutOfService

This alert indicates that the Cisco IME service has lost communication with Cisco IME Config Manager services, such as the Cisco AMC Service or the Cisco CallManager Service.

This alert usually indicates that one of these services has gone down (either intentionally, for maintenance; or unintentionally, due to a service failure or connectivity failure).

## Default Configuration

**Table 208: Default Configuration for the IMESdLinkOutOfService Alert**

| Value                                              | Default Configuration                                                     |
|----------------------------------------------------|---------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                  |
| Severity                                           | Critical                                                                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                 |
| Threshold                                          | Trigger alert when following condition met:<br>SDLLinkOOS event generated |
| Duration                                           | Trigger alert immediately                                                 |

| Value                | Default Configuration       |
|----------------------|-----------------------------|
| Frequency            | Trigger alert on every poll |
| Schedule             | 24 hours daily              |
| Enable Email         | Selected                    |
| Trigger Alert Action | Default                     |

## InvalidCertificate

This alert indicates that the administrator enabled the IME distributed cache on the Cisco IME server but omitted the configuration of a valid certificate or configured an incorrect certificate.

### Default Configuration

*Table 209: Default Configuration for the InvalidCertificate Alert*

| Value                                              | Default Configuration                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                      |
| Severity                                           | Alert                                                                         |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                     |
| Threshold                                          | Trigger alert when following condition met:<br>Invalid certificate configured |
| Duration                                           | Trigger alert immediately                                                     |
| Frequency                                          | Trigger alert on every poll                                                   |
| Schedule                                           | 24 hours daily                                                                |
| Enable Email                                       | Selected                                                                      |
| Trigger Alert Action                               | Default                                                                       |

## InvalidCredentials

The alert indicates that the Unified Communications Manager cannot connect to the Cisco IME server, because the username and password that are configured on Unified Communications Manager do not match those configured on the Cisco IME server.

The alert includes the username and password that were used to connect to the Cisco IME server as well as the IP address and name of the target Cisco IME server. To resolve this alert, log into the Cisco IME server and check that the username and password that are configured match those configured in Unified Communications Manager.

### Default Configuration

**Table 210: Default Configuration for the InvalidCredentials Alert**

| Value                                              | Default Configuration                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                          |
| Severity                                           | Error                                                                             |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                         |
| Threshold                                          | Trigger alert when following condition met:<br>Invalid or mismatched credentials. |
| Duration                                           | Trigger alert immediately                                                         |
| Frequency                                          | Trigger alert on every poll                                                       |
| Schedule                                           | 24 hours daily                                                                    |
| Enable Email                                       | Selected                                                                          |
| Trigger Alert Action                               | Default                                                                           |

## MessageOfTheDay

The Cisco IME service generates this alert when the administrators of the Cisco IME network have a message for you.

### Default Configuration

**Table 211: Default Configuration for the MessageOfTheDay Alert**

| Value                                              | Default Configuration                                                              |
|----------------------------------------------------|------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                           |
| Severity                                           | Notice                                                                             |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                          |
| Threshold                                          | Trigger alert when following condition met:<br>Message from network administrators |
| Duration                                           | Trigger alert immediately                                                          |
| Frequency                                          | Trigger up to 1 alert within 1440 minutes                                          |
| Schedule                                           | 24 hours daily                                                                     |
| Enable Email                                       | Selected                                                                           |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Trigger Alert Action | Default               |

## SWUpdateRequired

The Cisco IME server generates this alert when a new version of the Cisco IME server software is required. This alert repeats until you perform the upgrade. To obtain more information about the software update, go to the Cisco website. You should install critical updates within days of receiving this alert.

These upgrades address security vulnerabilities or key functional outages. In some cases, if you do not apply a critical upgrade immediately, the Cisco IME server may become unable to connect to the network.

### Default Configuration

*Table 212: Default Configuration for the SWUpdateRequired Alert*

| Value                                              | Default Configuration                                                   |
|----------------------------------------------------|-------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                |
| Severity                                           | Warning                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                               |
| Threshold                                          | Trigger alert when following condition met:<br>Software update required |
| Duration                                           | Trigger alert immediately                                               |
| Frequency                                          | Trigger up to 1 alerts within 60 minutes                                |
| Schedule                                           | 24 hours daily                                                          |
| Enable Email                                       | Selected                                                                |
| Trigger Alert Action                               | Default                                                                 |

## TicketPasswordChanged

The Cisco IME server generates this alert when the administrator changes the password that is used to generate the validation tickets.

Verify that an authorized administrator changed the password. Unauthorized changes may indicate compromise to the administrative interfaces on the Cisco IME service. If you determine that unauthorized changes have been made, change the administrative passwords on the Cisco IME server immediately to prevent further unauthorized access. To change the administrative password, type **set password admin** in the Cisco IME server CLI.

## Default Configuration

*Table 213: Default Configuration for the TicketPasswordChanged Alert*

| Value                                              | Default Configuration                                                  |
|----------------------------------------------------|------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                               |
| Severity                                           | Notice                                                                 |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                              |
| Threshold                                          | Trigger alert when following condition met:<br>Ticket password changed |
| Duration                                           | Trigger alert immediately                                              |
| Frequency                                          | Trigger on every poll                                                  |
| Schedule                                           | 24 hours daily                                                         |
| Enable Email                                       | Selected                                                               |
| Trigger Alert Action                               | Default                                                                |

## ValidationsPendingExceeded

This alert indicates the number of pending validations on the Cisco IME server. This number provides an indicator of the backlog of work on the Cisco IME server.

### Default Configuration

*Table 214: Default Configuration for the ValidationsPendingExceeded Alert*

| Value                                              | Default Configuration                                                                     |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Enable Alert                                       | Selected                                                                                  |
| Severity                                           | Critical                                                                                  |
| Enable/Disable this alert on the following servers | Enabled on listed servers                                                                 |
| Threshold                                          | Trigger alert when following condition met:<br>Cisco IME pending validations exceeded 100 |
| Duration                                           | Trigger alert immediately                                                                 |
| Frequency                                          | Trigger up to 1 alerts within 60 minutes                                                  |
| Schedule                                           | 24 hours daily                                                                            |
| Enable Email                                       | Selected                                                                                  |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Trigger Alert Action | Default               |

## Cisco Unity Connection Alerts

### NoConnectionToPeer

(Cisco Unity Connection cluster configuration) This alert is generated when the servers of a Cisco Unity Connection cluster cannot communicate with each other (for example, when the network connection is lost).



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

#### Default Configuration

*Table 215: Default Configuration for the NoConnectionToPeer RTMT Alert*

| Value                                            | Default Configuration                                                             |
|--------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                          |
| Severity                                         | Critical                                                                          |
| Enable/Disable this alert on following server(s) | Enabled                                                                           |
| Threshold                                        | Trigger alert when following condition met:<br>NoConnectionToPeer event generated |
| Duration                                         | Trigger alert immediately                                                         |
| Frequency                                        | Trigger alert on every poll                                                       |
| Schedule                                         | 24 hours daily                                                                    |
| Enable Email                                     | Selected                                                                          |
| Trigger Alert Action                             | Default                                                                           |

### AutoFailoverSucceeded

(Cisco Unity Connection cluster configuration) This alert is generated in the following conditions:

- When the server with the Secondary status automatically changes its status to Primary (for example, when a critical failure occurs on the server with the Primary status) and assumes responsibility for handling the voice messaging functions and database for the cluster. This alert signals that the following events occurred:

- The server that originally had the Primary status experienced a serious failure.
- The server that originally had the Secondary status now has the Primary status and is handling all calls successfully.
- When the server that stopped functioning (described above) is brought back online and the server status automatically changes so that both servers resume sharing responsibility for handling the voice messaging functions and replication.



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

### Default Configuration

*Table 216: Default Configuration for the AutoFailoverSucceeded RTMT Alert*

| Value                                            | Default Configuration                                                                |
|--------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                             |
| Severity                                         | Informational                                                                        |
| Enable/Disable this alert on following server(s) | Enabled                                                                              |
| Threshold                                        | Trigger alert when following condition met:<br>AutoFailoverSucceeded event generated |
| Duration                                         | Trigger alert immediately                                                            |
| Frequency                                        | Trigger alert on every poll                                                          |
| Schedule                                         | 24 hours daily                                                                       |
| Enable Email                                     | Selected                                                                             |
| Trigger Alert Action                             | Default                                                                              |

## AutoFailoverFailed

(Cisco Unity Connection cluster configuration) This alert is generated in the following conditions:

- When the server with the Secondary status attempts to automatically change its status to Primary (for example, when a critical failure occurs on the server with the Primary status), but the automatic server status change fails so that the server with the Secondary status keeps the Secondary status.
- When a server that has stopped functioning (for example, a critical failure occurred) is not brought back online. Only one server in the cluster is functioning.



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

### Default Configuration

*Table 217: Default Configuration for the AutoFailoverFailed RTMT Alert*

| Value                                            | Default Configuration                                                             |
|--------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                          |
| Severity                                         | Error                                                                             |
| Enable/Disable this alert on following server(s) | Enabled                                                                           |
| Threshold                                        | Trigger alert when following condition met:<br>AutoFailoverFailed event generated |
| Duration                                         | Trigger alert immediately                                                         |
| Frequency                                        | Trigger alert on every poll                                                       |
| Schedule                                         | 24 hours daily                                                                    |
| Enable Email                                     | Selected                                                                          |
| Trigger Alert Action                             | Default                                                                           |

## AutoFailbackSucceeded

(Cisco Unity Connection cluster configuration) This alert is generated when the problem that caused the server with the Primary status to stop functioning (causing the server with the Secondary status to change its status to Primary) is resolved and both servers are again online. Then, the servers automatically change status so that the server that had stopped functioning has the Primary status and the other server has the Secondary status.



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

### Default Configuration

*Table 218: Default Configuration for the AutoFailbackSucceeded RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |
| Severity     | Informational         |

| Value                                            | Default Configuration                                                                |
|--------------------------------------------------|--------------------------------------------------------------------------------------|
| Enable/Disable this alert on following server(s) | Enabled                                                                              |
| Threshold                                        | Trigger alert when following condition met:<br>AutoFailbackSucceeded event generated |
| Duration                                         | Trigger alert immediately                                                            |
| Frequency                                        | Trigger alert on every poll                                                          |
| Schedule                                         | 24 hours daily                                                                       |
| Enable Email                                     | Selected                                                                             |
| Trigger Alert Action                             | Default                                                                              |

## AutoFailbackFailed

(Cisco Unity Connection cluster configuration): This alert occurs when the publisher node is not online and the server with the Primary status fails to automatically change status.



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

### Default Configuration

*Table 219: Default Configuration for the AutoFailbackFailed RTMT Alert*

| Value                                            | Default Configuration                                                             |
|--------------------------------------------------|-----------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                          |
| Severity                                         | Error                                                                             |
| Enable/Disable this alert on following server(s) | Enabled                                                                           |
| Threshold                                        | Trigger alert when following condition met:<br>AutoFailbackFailed event generated |
| Duration                                         | Trigger alert immediately                                                         |
| Frequency                                        | Trigger alert on every poll                                                       |
| Schedule                                         | 24 hours daily                                                                    |
| Enable Email                                     | Selected                                                                          |
| Trigger Alert Action                             | Default                                                                           |

## SbrFailed (Split Brain Resolution Failed)

When a Cisco Unity Connection cluster is configured, if two servers cannot communicate with each other, they will both have the Primary status at the same time (a “split brain” condition), handle voice messaging functions, save messages to their own message stores, but not perform any replication. Users can retrieve their messages, but only one server knows that these messages have been retrieved.

When both servers are able to communicate with each other, they resolve this split brain condition by determining the correct contents and state of each user mailbox:

- Whether new messages that have been received.
- Whether MWIs for new messages have already been sent.
- Which messages have been listened to.
- Which messages have been deleted.

If the resolution of the split brain condition fails, this alert occurs.



**Note** Cisco Business Edition 5000 does not support a Cisco Unity Connection cluster and this alert.

### Default Configuration

*Table 220: Default Configuration for the SbrFailed RTMT Alert*

| Value                | Default Configuration                                                    |
|----------------------|--------------------------------------------------------------------------|
| Enable Alert         | Selected                                                                 |
| Severity             | Informational                                                            |
| Threshold            | Trigger alert when following condition met:<br>SbrFailed event generated |
| Duration             | Trigger alert immediately                                                |
| Frequency            | Trigger alert on every poll                                              |
| Schedule             | 24 hours daily                                                           |
| Enable Email         | Selected                                                                 |
| Trigger Alert Action | Default                                                                  |

## DiskConsumptionCloseToCapacityThreshold

This alert is generated when the hard disk usage on the Cisco Unity Connection server reaches ten percent below the percentage limit that the **System Settings > Advanced > Disk Capacity** window in Cisco Unity Connection Administration specifies. For example, with a capacity threshold limit of 95 percent, the alert gets triggered when usage reaches at least 85 percent.

### Default Configuration

**Table 221: Default Configuration for the DiskConsumptionCloseToCapacityThreshold RTMT Alert**

| Value                                            | Default Configuration                                                                                  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                                               |
| Severity                                         | Error                                                                                                  |
| Enable/Disable this alert on following server(s) | Enabled                                                                                                |
| Threshold                                        | Trigger alert when following condition met:<br>DiskConsumptionCloseToCapacityThreshold event generated |
| Duration                                         | Trigger alert immediately                                                                              |
| Frequency                                        | Trigger alert on every poll                                                                            |
| Schedule                                         | 24 hours daily                                                                                         |
| Enable Email                                     | Selected                                                                                               |
| Trigger Alert Action                             | Default                                                                                                |

## DiskConsumptionExceedsCapacityThreshold

This alert is generated when the hard disk usage on the Cisco Unity Connection server meets or exceeds the percentage limit that the **System Settings > Advanced > Disk Capacity** window in Cisco Unity Connection Administration specifies.

### Default Configuration

**Table 222: Default Configuration for the DiskConsumptionExceedsCapacityThresholdRTMT Alert**

| Value                                            | Default Configuration                                                                                  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                                               |
| Severity                                         | Error                                                                                                  |
| Enable/Disable this alert on following server(s) | Enabled                                                                                                |
| Threshold                                        | Trigger alert when following condition met:<br>DiskConsumptionExceedsCapacityThreshold event generated |
| Duration                                         | Trigger alert immediately                                                                              |
| Frequency                                        | Trigger alert on every poll                                                                            |
| Schedule                                         | 24 hours daily                                                                                         |

| Value                | Default Configuration |
|----------------------|-----------------------|
| Enable Email         | Selected              |
| Trigger Alert Action | Default               |

## LicenseExpirationWarning

Cisco Unity Connection licenses several features, including users and ports. The system enforces these licenses. If a customer uses a time-limited license to sample a feature, this license includes an expiration date. Before the license expiration date is reached, the system sends a message, and this alert occurs. The log indicates how many days remain until the license expires.

### Default Configuration

*Table 223: Default Configuration for the LicenseExpirationWarning RTMT Alert*

| Value                                            | Default Configuration                                                                   |
|--------------------------------------------------|-----------------------------------------------------------------------------------------|
| Enable Alert                                     | Selected                                                                                |
| Severity                                         | Critical                                                                                |
| Enable/Disable this alert on following server(s) | Enabled                                                                                 |
| Threshold                                        | Trigger alert when following condition met:<br>LicenseExpirationWarning event generated |
| Duration                                         | Trigger alert immediately                                                               |
| Frequency                                        | Trigger alert on every poll                                                             |
| Schedule                                         | 24 hours daily                                                                          |
| Enable Email                                     | Selected                                                                                |
| Trigger Alert Action                             | Default                                                                                 |

## LicenseExpired

Cisco Unity Connection licenses several features, including users and ports. The system enforces these licenses. If a customer uses a time-limited license to sample a feature, this license includes an expiration date. When the license expiration date is reached, the license becomes invalid, and this alert occurs.

### Default Configuration

*Table 224: Default Configuration for the LicenseExpired RTMT Alert*

| Value        | Default Configuration |
|--------------|-----------------------|
| Enable Alert | Selected              |

| Value                                            | Default Configuration                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------|
| Severity                                         | Informational                                                                 |
| Enable/Disable this alert on following server(s) | Enabled                                                                       |
| Threshold                                        | Trigger alert when following condition met:<br>LicenseExpired event generated |
| Duration                                         | Trigger alert immediately                                                     |
| Frequency                                        | Trigger alert on every poll                                                   |
| Schedule                                         | 24 hours daily                                                                |
| Enable Email                                     | Selected                                                                      |
| Trigger Alert Action                             | Default                                                                       |

## System Error Messages

### System Error Messages

For a complete list of system error messages, see the *System Error Messages for Cisco Unified Communications Manager* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-system-message-guides-list.html>.