



Cisco Unified CCX Administration Guide, Release 11.0(1)

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CONTENTS

PREFACE

Preface	xix
Change History	xix
About This Guide	xxii
Audience	xxii
Related Documents	xxiii
Documentation and Support	xxiii
Documentation Feedback	xxiii

CHAPTER 1

Unified CCX Introduction	1
Unified CCX Components	1
Unified CCX Product Family	3
Unified IP IVR	3
Unified Contact Center Express	3
Unified CCX Cluster Architecture	4
Unified CCX Active Server	5
Unified CCX Engine	6
Set Up Unified CCX	7
Provision Telephony and Media Subsystems	7
Configure Unified CCX Subsystems	8
Provision Unified CCX Subsystem	8
Provision Additional Unified CCX Subsystems	9
View License Information	9
Upload Licenses	10
Configure Unified CCX Applications	11
Available Applications	11
Manage Scripts Prompts, Grammars, and Documents	11

Configure Unified CCX Historical Reporting 11
 Manage Unified CCX 12

CHAPTER 2

Unified CCX Administration Web Interface 13

Access Unified CCX Administration Web Interface 13
 Cisco Unified CCX Administration Menu Bar and Menus 14
 Cisco Unified CCX Administration Navigation 15
 Unified CCX Configuration Web Pages 17
 Details for Advanced Configuration 17
 Toolbar and Buttons 18
 Application and RmCm Wizards 18

CHAPTER 3

Unified CCX Provision Checklist 19

Unified CCX 19
 Provision Unified CCX 20
 Change Licensing Packages 21

CHAPTER 4

Provision Unified CM for Unified CCX 23

Configure Unified Communications Manager Information 23
 Modify AXL Information 24
 Modify Unified Communications Manager Telephony Information 25
 Modify RmCm Provider Information 27
 Unified Communications Manager for Unified CCX Configuration 28
 Invoke Unified Communications Manager Administration 28
 Unified Communications Manager Users as Unified CCX Agents 29
 Guidelines for Agent Phone Configuration 31
 Modify Existing Unified Communications Manager Users 32
 Assign Unified Communications Manager Users as Cisco TelePresence Virtual Agents 35
 Configure Tool for Auto-Registered Phones Support (TAPS) 36

CHAPTER 5

Update Unified CM IP Address Change in Unified CCX 39

Update Unified CM IP Address Change in Unified CCX 39

CHAPTER 6

Cisco Applications Configuration 41

About Unified CCX Applications	41
Configure Script Applications	41
Add New Cisco Script Application	42
Configure Busy Application	44
Configure Ring-No-Answer Application	45
Application Triggers	46
Unified CM Telephony Trigger	47
Add Unified CM Telephony Triggers from Application Web Page	47
Add Unified CM Telephony Triggers from Unified CCX	47
HTTP Trigger Provision	48
Add HTTP Trigger from Application Web Page	48
Add HTTP Trigger from HTTP Subsystem	49
Script Management	50
Upload New Scripts	51
Download Script File	52
Refresh Scripts	53
Refresh Scripts Individually	53
Refresh Bulk Scripts	53
Rename Script or Folder	54
Delete Script or Folder	55
Sample Scripts	55

CHAPTER 7
Telephony and Media Provision 57

Unified CCX Telephony and Media	57
Media Termination Groups	58
Channels Required to Process Calls	58
Provision Telephony and Media Resources	59
Provision Unified CM Telephony Subsystem	59
Resynchronize Cisco JTAPI Client	60
Resynchronize Unified CM Telephony Data	60
Configure Unified CM Telephony Provider	61
Add New Call Control Group	62
Add Unified CM Telephony Trigger	70

Additional Unified CM Telephony Information	74
Unified CM Telephony Triggers for Unified CCX Queuing	74
Unified CM Telephony Information Resynchronization	75
Cisco Media Subsystem	75
Add CMT Dialog Control Group	76
ASR and TTS in Unified CCX	77
Prepare to Provision ASR/TTS	77
Provision of MRCP ASR Subsystem	78
Provision MRCP ASR Providers	78
Provision MRCP ASR Servers	79
Provision MRCP ASR Dialog Groups	81
MRCP TTS Subsystem	83
Provision MRCP TTS Providers	83
Provision MRCP TTS Servers	84
Provision MRCP TTS Default Genders	86

CHAPTER 8

Provision of Unified CCX	89
RmCm Provider Configuration	89
RmCm Provider Modification	90
Associating Agent Extensions with the RmCm Provider	90
Resource Groups	91
Create Resource Group	91
Modify Resource Group Name	91
Delete Resource Group	92
Skills Configuration	92
Create a Skill	92
Modify a Skill Name	93
Delete a Skill	93
Agent Configuration	94
Implications of Deleting Agents in Unified CM	95
Assign Resource Groups and Skills to One Agent	95
Assign Resource Groups and Skills to Multiple Agents	97
Remove Skills from Agents	98
Contact Service Queue Configuration	98

Create a Contact Service Queue	99
Contact Service Queue Configuration Web Page	101
Modify a Contact Service Queue	102
Delete a Contact Service Queue	103
Resource Pool Selection Criteria: Skills and Groups	104
Resource Skill Selection Criteria within a Contact Service Queue	105
Configure Agent-Based Routing	106
Wrap-Up Data Usage	107
Teams Configuration	107
Assign Supervisor Privilege to a User	107
Create Team Supervisor	108
Create Teams	108
Modify Agents on Teams	109
Delete a Team	109

CHAPTER 9

Provision of Additional Subsystems	111
About Additional Subsystems	111
Provision of HTTP Subsystem	112
Configure HTTP Triggers	112
Provision of Database Subsystem	113
Database Subsystem Configuration	113
Add New Datasource	114
Datasource Configuration Web Page	114
Poll Database Connectivity	115
Provision eMail Subsystem	116

CHAPTER 10

Management of Prompts, Grammars, Documents, and Custom Files	119
Manage Prompt Files	119
Manage Grammar Files	121
Manage Document Files	122
Language Management	123
Create New Language	124
Rename Language	124
Delete Language	125

Upload Zip Files to Language Folder	125
Upload of Prompt Files	126
Record a Prompt	127
Add Spoken-Name Prompts	128
Management of Custom Files	129
Specify Custom Classpath Entries	129
AAR File Management	129
AAR File Creation	131
Upload AAR Files	131
META-INF Directory	132
Directories for Prompts, Grammars, Documents, and Scripts	132
Prompts Directory	132
Grammars Directory	133
Documents Directory	133
Scripts Directory	133
AAR Manifest	133
Attribute Types	134
Main Attributes	135
Per-entry Attributes	137
META-INF Directory Attributes	137
CHAPTER 11	Unified CCX System Management 141
Basic Terminology	141
High Availability and Automatic Failover	142
Network Partitions	143
Unified CCX CDS Information Management	143
Manage System Parameters	143
System Parameters Configuration Web Page	144
Unified CCX IP Address/hostname Management	147
Prepare System for IP Address/host name Change	147
IP Address Modification	149
Change IP Address for Server in Single-Node Deployment	149
IP Address Modification in High-Availability (HA) Deployment	151
Host Name Modification	155

Change Host Name for Server in a Single-Node Deployment	155
Host Name Modification in High-Availability (HA) Deployment	156
Verify Proper Function of System after IP Address/host name Change	160
Exit Unified CCX Administration	160

CHAPTER 12**Unified CCX Reporting 163**

Reporting Administration on Unified CCX	163
Import of Stock Reports	163
Unified CCX Historical Reports	163
Unified CCX Historical Datastore	163
Historical Reporting Configuration	164
Purge of Historical Data	165
File Restore	168
Unified CCX Real-Time Reports	168
Available Unified CCX Real-Time Reports	168
Open Real-Time Reports	170
Run Reports	171
View Detailed Subreports	171
Print Reports	171
Reset Report Statistics	172
Clear Contact Option for Stuck Calls	172
Set Report Options	172
Set Report Appearance	173
Application Reporting User Interface	173
Reporting Administration on Unified Intelligence Center	206
Overview	206
Start Unified Intelligence Center	206
Administrator Overview	207
Security Overview	207
User List	207
Create a User	208
User Groups	209
About User Groups	210
Create a User Group	211

- Manage User Permissions 212
 - About Permissions 212
 - User Roles and Permissions 213
 - Assigned Group Permissions 213
 - Assigned User Permissions 214
- Run As 215
- Audit Trail Logging in Cisco Unified Intelligence Center 215
 - View Audit Trail Logging in Unified Intelligence Center 216
- Audit Trail Report 216
- Security Considerations 216

CHAPTER 13

Unified CCX Outbound Dialer Configuration 217

- Outbound Feature for Unified CCX 217
 - Outbound Characteristics 217
 - Unified CCX Requirements 218
 - Outbound Components 220
- Supported Dialers and Dialing Modes for Outbound 220
 - Unified CCX Outbound Dialing Modes 221
 - Direct Preview Dialing Mode 221
 - Progressive Dialing Mode 221
 - Predictive Dialing Mode 221
- Configure Outbound Subsystem in Unified CCX 222
- Configure General Outbound Properties 222
 - Callbacks 225
 - Outbound Area Code Functionality 226
 - Configuration Updates 226
 - CSQ Agent Pool Allocation 227
- Configure Application and Trigger for Outbound Campaign 227
- Add New Campaign 228
- Import Contacts for Campaign 237
- Enable Campaigns 238
- Outbound Subsystem and Time Detection 239
- Add Area Codes 240
- Call Status Values 240

Contact States Reset at Midnight	241
Call Result Values	242
Reclassification Status Behavior	244
Call Retrieval Priority	244
Failover and System Restarts	245

CHAPTER 14
Cisco Unified Contact Center Express Supervisor and User Options Plug-Ins 247

About User Management	247
About Unified CCX User Capabilities	247
Administrator Privileges	248
Supervisor Privileges	248
Historical Report User Privileges	248
Agent Privileges	249
Unified CCX Supervisor Web Interface	249
Access Unified CCX Supervisor Web Page	249
Unified CCX User Options Web Interface	250
Access Unified CCX User Options Web Page	250
Add Alternative Pronunciations	250
Access Unified CM User Options Page	251

CHAPTER 15
System Menu 253

Access Server Menu	253
Configure Server	254
Configure IPv6 Address	254
Unified CM Configuration	255
Recording Configuration	255
Custom File Configuration	256
Standalone Cisco Unified Intelligence Center Configuration	256
License Information	256
Add Licenses	257
Display Licenses	257
Language Information	258
Logout Menu	258

CHAPTER 16**Applications Menu 261**

Access Application Management Menu 261

Manage Scripts 262

Prompt Management 262

Grammar Management 263

Document Management 263

AAR Management 264

CHAPTER 17**Subsystems Menu 265**

Unified CM Telephony Menu 266

Unified CM Telephony Provider Configuration 266

Unified CM Telephony Call Control Group Configuration 266

Unified CM Telephony Triggers Configuration 267

Synchronize Unified CM Telephony Data 267

Unified CM Telephony Cisco JTAPI Resync 268

Unified CM Telephony Advanced Settings 268

RmCm Menu 269

Skill Configuration 269

Add New Skill 269

Modify Skills 270

Resources Configuration 270

Modify Resource 270

Resource Group Configuration 271

Add New Resource Group 271

Modify Existing Resource Groups 271

Contact Service Queues Configuration 271

Add a CSQ 271

RmCm Provider Configuration 272

Skills Configuration Assignment 272

Add Skills 272

Remove Skills 272

Agent Based Routing Settings Configuration 272

Teams Configuration 272

Add New Team	272
Chat and Email Menu Options	273
SocialMiner Configuration	273
Reinject Email Contacts	276
Chat Transcripts	277
Mail Server Configuration	277
Contact Service Queues	278
Predefined Responses	281
Predefined Responses	281
Channel Parameters	282
List Chat Web Forms	284
Chat Web Form Configuration	284
Teams	286
Outbound Menu	286
General Configuration	286
Campaign Configuration	286
Add New Campaigns	287
Import Contacts	287
Delete Contacts	287
Area Code Management	287
Add New Area Code	287
Configure SIP Gateway	288
SIP Gateway Configuration Web Page	288
Dial Peer Configuration for Outbound	289
Database Menu	291
DataSource	291
New DataSource	291
Add New Database Driver	291
Driver	292
Add New Database Driver	292
HTTP Menu	293
HTTP Trigger Configuration	293
Add New HTTP Trigger	294
eMail Menu	294

- Cisco Media 294
- MRCP ASR Menu 295
 - MRCP ASR Provider 295
 - MRCP ASR Servers 295
 - MRCP ASR Dialog Groups 295
- MRCP TTS Menu 296
 - MRCP TTS Providers 296
 - MRCP TTS Servers 296
 - MRCP TTS Default Genders 296

CHAPTER 18

Wizards Menu 297

- Application Wizard 297
- RmCm Wizard 298

CHAPTER 19

Tools Menu 301

- Plug-Ins Menu 301
- Real-Time Reporting Menu 302
- Real-Time Snapshot Config Menu 302
 - Create System DSN for Wallboard 304
 - Wallboard Software in High Availability (HA) Deployment 305
- Historical Reporting Menu 306
 - Database Server Configuration 307
 - SMTP Configuration 307
 - Purge Schedule Configuration Option 308
 - Purge Now Option 308
 - File Restore Option 308
- User Management Menu 309
 - User Configuration 309
 - Name Grammar Generator Configuration 310
 - Spoken Name Upload Submenu 311
 - Administrator Capability View Menu 311
 - Supervisor Capability View Menu 311
 - Reporting Capability View Menu 312
 - Agent Capability View Menu 312

Password Management 313

CHAPTER 20

Help Menu 315

Contents and Index 315
 For This Page Menu 316
 Troubleshooting Tips Menu 316
 Unified CCX Documentation Link 316
 About Menu 317

CHAPTER 21

Cisco Mobile Skill Manager 319

Access Mobile Skill Manager 319
 Adding Skills Using Cisco Mobile Skill Manager 320
 Searching Skills Using Cisco Mobile Skill Manager 320
 View Details of Resources Assigned to Supervisor 321
 View Resources Assigned to Supervisor 321
 Search Resources Using Cisco Mobile Skill Manager 321
 Modify Resource Team 322
 Assign Skill Competency to Resource 322
 Unassign Skill Competency of Resource 323

CHAPTER 22

Cisco Finesse 325

Introduction 325
 Cisco Finesse Administration Console 325
 Getting Started 325
 Administration Tools 326
 Manage System Settings 327
 Manage Call Variables Layouts 327
 Call Variables Layouts 327
 Call Variables 328
 Configure Call Variables Layouts 328
 Add ECC Variables to Call Variables Layout 330
 Assign Call Variables Layouts 330
 Manipulate Call Variables Layouts with a Workflow 331
 Manage Desktop Layout 331

Finesse Desktop Layout XML	331
Default Layout XML	332
Update Default Desktop Layout	336
XML Schema Definition	337
Add Web Chat and Email to Finesse	339
Live Data Gadgets	346
Live Data Reports	351
Manage Phone Books	353
Phone Books and Contacts	353
Add Phone Book	354
Edit Phone Book	355
Delete Phone Book	355
Import Contacts	355
Export Contacts	356
Add Contact	357
Edit Contact	357
Delete Contact	357
Manage Reasons	358
Not Ready Reason Codes	358
Sign Out Reason Codes	361
Wrap-Up Reasons	363
Manage Team Resources	365
Team Resources	365
Assign Phone Books and Reasons to Team	367
Unassign Phone Books and Reasons from Team	367
Assign Custom Desktop Layout to Team	368
Assign Workflows to Team	368
Unassign Workflows from Team	369
Manage Workflows	369
Workflows and Workflow Actions	369
Add Browser Pop Workflow Action	373
Add HTTP Request Workflow Action	374
Edit Workflow Action	375
Delete Workflow Action	375

Add Workflow	376
Edit Workflow	376
Delete Workflow	377
Manage Security	377
HSTS	377
Trust Self-Signed Certificate	378
Obtain and Upload CA Certificate	379
Add Certificate for HTTPS Gadget	381
Add Certificate for Multi-session Chat and Email	382
Manage Finesse IP Phone Agent	382
Finesse IP Phone Agent	382
One Button Sign In	383
Finesse IP Phone Service Subscription Options	384
Set Up Application User, Web Access, and HTTPS Server Parameters	385
Configure Finesse IP Phone Service in Unified CM	386
Add Service Parameters for One Button Sign In	388
Subscribe Agent Phones to Manual Subscription Service	390
Set Up Agent Access to the Self Care Portal	391
CTI Failover	391
Finesse IP Phone Agent Failover	392
Backup and Restore	392
Additional Language Support	393
Cisco Finesse Agent and Supervisor Desktop	393
Call Manager-Based Call Recording Using Cisco MediaSense	393
Configure Cisco MediaSense with Unified CM	393
Upload Cisco MediaSense Certificate to Unified CCX Server	394
Upload MediaSense Recording License	394
Configure MediaSense as a Recording Server	395
Call Recording Through Workflow	395
Configure MediaSense Search and Play Gadget	396
CHAPTER 23	Extend and Connect 399
Overview	399
Server Configuration	399

Persistent Connection 401

APPENDIX A

Cisco Unified Contact Center Express License Packages 403

Application Availability by License Package 403

Trigger Availability by License Package 403

Subsystem Availability by License Package 404

Unified CCX Services Availability by License Package 404

Unified CCX Component Availability by License Package 405



Preface

- [Change History](#), on page xix
- [About This Guide](#), on page xxii
- [Audience](#), on page xxii
- [Related Documents](#), on page xxiii
- [Documentation and Support](#), on page xxiii
- [Documentation Feedback](#), on page xxiii

Change History

Change	See	Date
Manage Finesse IP Phone Agent added	Manage Finesse IP Phone Agent, on page 382	Initial release of document for 11.0(1)
Allow Duplicate Contacts added	Import Contacts for Campaign	Initial release of document for 11.0(1)
Standalone CUIC Configuration added	Standalone Cisco Unified Intelligence Center Configuration, on page 256	Initial release of document for 11.0(1)
Purge Enhancement added	Configure Purge Schedule Configuration Parameters, on page 166	Initial release of document for 11.0(1)

Change	See	Date
Removal of Cisco Agent Desktop		Initial release of document for 11.0(1)

Change	See	Date
	<p>The following Cisco Agent Desktop related sections and chapter references have been removed from this version:</p> <ul style="list-style-type: none"> • Unified CCX Introduction • Provision Telephony and Media Subsystem • Unified CCX Provision Checklist • Configure Remote Monitoring Application • System Parameters Configuration Web Page • Unified CCX Real-Time Reports • Outbound Characteristics • Unified CCX Outbound Dialing Modes • Direct Preview Dialing Mode • Configure General Outbound Properties • Communication with Agents Desktops • Supervisor Privileges • Cisco Unified CCX Desktop Client Configuration Tool • System Parameters • Obtaining CA-Signed Certificate for Web Chat • Unified CCX Web Chat • Guidelines for Agent Phone Configuration • Do Not Call Contact • Provision Unified CCX • Configure Remote Monitoring Application • Remote Monitoring Use and Configuration • Remote Monitor Configuration • Unified CCX Services Availability by License Package 	

Change	See	Date
	<ul style="list-style-type: none"> • Subsystem Availability by License Package • System Parameters Configuration Web Page • Contact Service Queue Configuration Web Page 	

About This Guide

Cisco Unified Contact Center Express (Unified CCX), a member of the Cisco Unified Communications family of products, manages customer voice contact centers for departments, branches, or small to medium-size companies planning to deploy an entry-level or mid-market contact center solution.

The *Cisco Unified CCX Administration Guide* provides instructions for using the Administration web interface to provision the subsystems of the Unified CCX package and to configure Unified CCX applications.

This guide shows you how to implement the following two systems that integrate with the Unified CCX:

- Cisco Unified Contact Center Express (Unified CCX)
- Cisco Unified IP IVR

This guide also includes a reference section that describes all the menus and menu options of the Unified CCX Administration web interface.

This guide will help you to:

- Perform initial configuration tasks
- Administer applications such as the Unified CCX Engine and other components of the Cisco Unified Communications family of products
- Familiarize yourself with the menus and menu options of the Unified CCX Administration web interface

Audience

The *Cisco Unified CCX Administration Guide* is written for business analysts and application designers who have the domain-specific knowledge required to create multimedia and telephony customer response applications. Experience or training with Java is not required but is useful for making best use of the capabilities of the Cisco Unified Communications family of products.

Related Documents

Document or Resource	Link
<i>Cisco Unified Contact Center Express Documentation Guide</i>	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_documentation_roadmaps_list.html
cisco.com site for Unified CCX documentation	http://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd_products_support_series_home.html
Troubleshooting tips for Unified CCX	http://docwiki.cisco.com/wiki/Troubleshooting_Unified_Contact_Center_Express
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CHAPTER 1

Unified CCX Introduction

Unified CCX provides a multimedia (voice, data, and web) IP-enabled customer-care application environment that enhances the efficiency of contact centers by simplifying business integration, easing agent administration, increasing agent flexibility, and enhancing network hosting.

All configuration values in Unified CCX must be entered in English language unless explicitly mentioned on the administration screen.

The following sections provide an overview of the configuration and management components of the Unified CCX product family:

- [Unified CCX Components, on page 1](#)
- [Unified CCX Product Family, on page 3](#)
- [Unified CCX Cluster Architecture, on page 4](#)
- [Unified CCX Engine, on page 6](#)
- [Set Up Unified CCX, on page 7](#)
- [Manage Unified CCX, on page 12](#)

Unified CCX Components

This section describes the following components of the Unified CCX system:

- **Unified Gateway**—Connects the Cisco Unified Communications family of products to the Public Switched Telephone Network (PSTN) and to other private telephone systems such as PBX.
- **Unified CM Server**—The Cisco Unified Communications Manager (Unified CM) provides the features required to implement IP phones, manage gateways, provide failover and redundancy service for the telephony system, and direct Voice over IP (VoIP) traffic to the Unified CCX system.



Note Cisco Unified Communications Manager was previously known as Unified Call Manager. This guide uses Cisco Unified Communications Manager at the first occurrence and Unified CM for later occurrences.

- **Unified CCX Server**—Contains the Unified CCX Engine that runs applications, including Cisco script applications, Busy applications, Ring No Answer applications, and Voice Extensible Markup Language (VXML) 2.0 applications.

You can position your Unified CCX application server anywhere on the IP network and administer your applications from a web browser on any computer on the IP network. Because Unified CCX uses an open architecture that supports industry standards, you can integrate your applications with a wide variety of technologies and products, such as Enterprise databases. The Unified CCX Server has the following components:

- Unified CCX Configuration Datastore (CDS)—Manages configuration, component, and application information within the Unified CCX cluster and communicates with Unified CM. See the *Cisco Unified Contact Center Express Serviceability Administration Guide*.
- Historical Reports Database Server—Dedicated server that stores Unified CCX database for the following datastores: Configuration Datastore (CDS), Historical Datastore (HDS), and Repository Datastore (RDS).



Note If you are using Microsoft Internet Explorer Version 6.0 or later or Mozilla Firefox Version 2.0 or 3.0 browser, verify that the popup blocker is disabled.

- Cisco SocialMiner—Acts as the endpoint that hosts the widgets that end users and agents use during chat and email sessions. SocialMiner accepts chat request, communicates with Unified CCX to allocate an agent for the chat and then establishes the chat session between agent and end user.

SocialMiner fetches email messages from the email server, communicates with Unified CCX to allocate an agent, and provides the email management user interface components via the Finesse desktop.

- Unified CCX Editor—Allows application developers to use a simple Graphical User Interface (GUI) to create, modify, and debug Unified CCX scripts for automating customer interactions. Each script consists of a series of steps, implemented as Java Beans.
- Unified CCX Administration and Unified CCX Serviceability web interfaces—Provides access through a web browser for administrators to configure and manage Unified CCX datastores, servers, and applications.
- Cisco IP Agent and Supervisor Desktops—Desktop programs that allow Unified CCX agents and supervisors to log in to the system, change agent states, and monitor status.
- Media Resource Control Protocol (MRCP) Automatic Speech Recognition (ASR) server—(optional) Dedicated server that performs real-time speech recognition.
- MRCP Text-to-Speech (TTS) server—(optional) Dedicated server that converts text into speech and plays it back to the caller.



Note Support for high availability and remote servers is available only in multiple-server deployments.

- Cisco Unified Intelligence Center—A web-based reporting solution for historical reports that provides detailed Call Contact Call Detail Records (CCDRs), application performance, and traffic analysis information.

Unified CCX Product Family

The Unified CCX product family provides contact-processing functions for your Cisco Unified Communications solution.

The software package that you choose determines which steps, components, and subsystems you receive. Each Unified CCX product includes Unified CCX Engine and Unified CCX Editor.

Unified IP IVR

The Unified IP IVR is a multimedia (voice, data, web) IP-enabled interactive voice response solution that offers an open and feature-rich foundation for the creation and delivery of Unified IP IVR applications through Internet technology.

Unified IP IVR automates call handling by autonomously interacting with contacts. Using Unified IP IVR, you can create applications that answer calls, provide menu choices for callers, obtain caller data such as passwords or account identification, and transfer calls to caller-selected extensions. You can also create Unified IP IVR applications that respond to HTTP requests, perform outbound calling, send e-mail, and process VXML 2.0 commands.

The Unified IP IVR package provides the following features:

- Java Database Connectivity (JDBC) support—Unified IP IVR applications can access Oracle, Sybase, and IBM DB2 databases.
- Real-time reporting client—Unified IP IVR applications can generate a variety of reports that provide detailed information about the real-time status of your system.
- Cisco Unified Intelligence Center—A web-based reporting solution for historical reports that provides detailed Call Contact Call Detail Records (CCDRs), application performance, and traffic analysis information.
- Automatic Speech Recognition (ASR)—Unified IP IVR applications can take advantage of ASR to provide callers with the option to use speech to navigate through menu options.
- Text-to-Speech (TTS)—Unified IP IVR applications can use TTS to read back documents and prescribed prompts to callers.

Unified Contact Center Express

Cisco Unified Contact Center Express (Unified CCX) is an IP-based Automated Call Distribution (ACD) system that queues and distributes incoming calls to Unified CCX agents, who can be groups of Unified CM users for Unified CM integration.

You can use Unified CCX applications to route calls to specific agents. You can also integrate Unified CCX with Unified IP IVR to gather caller data and classify incoming calls.

Unified CCX includes a web-based real-time and historical reporting system that you can use to monitor system, Contact Service Queue (CSQ), and resource performance.

The Unified CCX system consists of the following major components:

- Resource Manager—Application program that monitors Unified CCX agent phones and allows you to organize agents into resource groups or skills-based partitions according to the types of calls each group can handle.
- CSQ—Application program that places incoming calls in a queue and distributes them to the appropriate set of agents as the agents become available.

The following licensing options are available for the Unified CCX system:

-
-
- Unified CCX Premium—Adds full Unified IP IVR support (except for Unified ICM integration) including database integration, Voice eXtensible Markup Language (VoiceXML), HTML web integration, custom Java extensions, and e-Notification services. The outbound feature is now bundled with the Premium package. You will receive one outbound seat free with each premium seat. The maximum number of outbound seats supported will be based on the hardware type.
- Unified CCX Outbound—You need to have a Unified CCX Outbound license in addition to a Unified CCX Premium license to enable the IVR and agent outbound feature. You can increase the number of ports and agents for an existing Outbound license. For all the IVR and agent based outbound campaigns that are running currently in your Unified CCX, the Display License submenu option displays these IVR ports and agent seats:
 - The licensed IVR ports for outbound.
 - The licensed agent seats for outbound.
 - The sum of the dedicated IVR ports configured for IVR-based outbound campaigns.
 - The agent seats that currently in use for agent-based outbound campaigns.



Note

- The dedicated outbound IVR ports for a campaign is the number of IVR ports that you want to reserve for a campaign from the total number of CTI ports available in the outbound call control group.
-



Note

The Unified CCX Enhanced package and the Unified CCX Premium package are provisioned in the same way.

Unified CCX Cluster Architecture



Note

Support for high availability and remote servers is available only in multiple-server deployments.

The Unified CCX cluster consists of one or more servers (nodes) that are running Unified CCX components in your Unified CCX deployment.

If you deploy Unified CCX components on a single server, the Unified CCX cluster (often referred to as *cluster* in this manual) consists of that server. If you deploy Unified CCX on multiple servers, the cluster

includes the Unified CCX server and standby server on which you installed Unified CCX. The Unified CCX cluster can support up to two Unified CCX Servers, one designated as the *active Unified CCX Server* and the other designated as the *standby Unified CCX Server* for high availability purposes.

When you install or upgrade Unified CCX on a server, you designate the cluster to which the server will belong by designating the cluster profile for that cluster.

Cluster architecture accommodates high availability and failover because if a component fails, a secondary server will take over the functionality lost by that failed component.

All Unified CCX servers within the cluster are configured identically and installed with the same features. One server is designated the *active server*.

Unified CCX Active Server



Note Support for high availability and remote servers is available only in multiple-server deployments.

The Unified CCX active server makes global decisions for the cluster and keeps track of calls in the CSQs, agent states (if Unified CCX is installed) and generating historical detail records.



Note Only one server in the cluster can be the active server at any given time.

If the active server fails, the Unified CCX provides automatic failover to the standby server. If the active server fails (for example, in the event a hardware failure occurs or the Unified CCX Engine process terminates), some calls being handled by the server are lost. The lost calls are restricted to those being handled by the system (those in the IVR stage or in queue). Calls answered by agents continue to remain live even though related data on the agent desktop is lost. When the standby server takes over as the new active server, call processing continues.

A Unified CCX cluster consists of the one or more servers (nodes) that run Unified CCX components in your Unified CCX deployment.

Cluster management consists of two main elements:

Cluster Manager

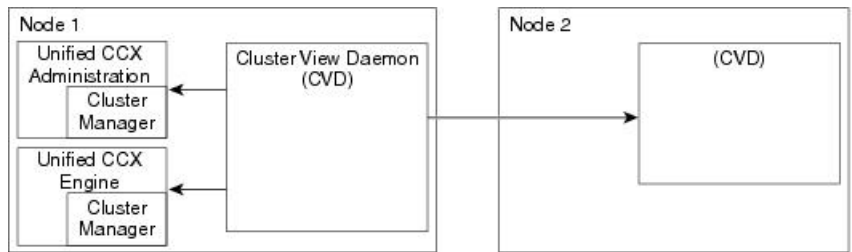
Receives updates about cluster status and subsystem states.

Cluster View Daemon (CVD)

Java code that interacts with Platform Service Manager and implements internode communication on behalf of the cluster. It detects availability of the other nodes, components and services, provides consistent cluster view, and dynamically elects a master service.

Figure 1: Components of the CVD Interaction with Nodes

The following figure shows the components of the CVD interaction with nodes.



The CVD has two interfaces:

- One that monitors *inside* the node, using:
 - Node Manager to monitor and control local processes
 - Cluster Manager publisher or subscriber to communicate with local applications, such as Engine and Application Administration
- One that monitors *outside* the node and communicates with other nodes in the cluster

Unified CCX Engine

The Unified CCX Engine enables you to run multiple applications to handle Unified CM Telephony calls or HTTP requests.

The Unified CCX Engine uses the Unified CM Telephony subsystem to request and receive services from the Computer Telephony Interface (CTI) manager that controls Unified CM clusters. The Unified CCX Engine is implemented as a service that supports multiple applications.

You can use a web browser to administer the Unified CCX Engine and your Unified CCX applications from any computer on the network. Unified CCX provides you the following two web interfaces:

- Unified CCX Administration web interface— Used to configure system parameters, subsystems, view real-time reports that include total system activity and application statistics, and so on
- Unified CCX Serviceability web interface— Used to view alarm and trace definitions for Unified CCX services, start and stop the Unified CCX Engine, monitor Unified CCX Engine activity, and so on



Note If you are using Microsoft Internet Explorer Version 6.0 or later or Mozilla Firefox Version 2.0 or 3.0 browser, verify that the popup blocker is disabled.

Depending on the Unified CCX products that you are using, the Unified CCX server may employ as many as 14 subsystems for communicating with other services:

Applications

Manages the applications in the Unified CCX Engine and other features such as session management.

Cisco Media

Configures Cisco Media Termination (CMT) dialog control groups, which can be used to handle simple Dual Tone Multifrequency (DTMF)-based dialog interactions with customers.

Core Reporting

Provides information for Unified IP IVR real-time reports.

Database

Handles the connections between the Unified CCX server and the enterprise database.

eMail

Adds components to the Unified CCX Engine that allows the engine to send email messages.

HTTP

Adds components to the Unified CCX Engine that allow the engine to respond to HTTP requests.

ICM Subsystem

Manages the connection between the Unified CCX server and ICM.

Unified CM Telephony

Manages the connection between Unified CM CTI Manager and the Unified CCX Engine.

MRCP ASR

Allows a script to respond to voice input in addition to DTMF using the MRCP protocol.

MRCP TTS

Composes voice prompts that are generated real-time from text, such as speaking the words in the text of an email message using the MRCP protocol.

Resource Manager-Contact Manager (RmCm)

Allows Unified CCX to monitor agent phones, control agent states, route and queue calls, and manage the historical reporting feature.

NonVoice Subsystem

Allows Unified CCX to configure and manage Chat and Email.

Voice Browser

Manages Voice Browser functionality.

Set Up Unified CCX

After you install the Unified CCX system and perform the initial setup as described in *Cisco Unified Contact Center Express Installation Guide*, you can start provisioning and configuring the system:

- *Provisioning* is the process of allocating resources and devising strategies for using the resources to support the needs of your business.
- *Configuring* is the process of making applications available to the Unified CCX system.

Provision Telephony and Media Subsystems

The Unified CCX telephony and media subsystems manage telephony and media resources and communicate with supporting telephony and media systems.

Depending on the Unified CCX applications you plan to use, you need to provision some or all of the following subsystems:

- **Unified CM Telephony**—The Unified CM Telephony subsystem controls the Unified CM Telephony resources for the Unified CCX system.

**Caution**

While Unified CM supports Unicode characters in first and last names, those characters become corrupted in Unified CCX Administration web pages for Real-Time Reporting.

- **Cisco Media**—The Cisco Media subsystem controls the CMT media resources for the Unified CCX system.
- **MRCP ASR**—The MRCP ASR subsystem controls the ASR media resources for the Unified CCX system.
- **MRCP TTS**—The MRCP TTS subsystem controls the TTS media resources for the Unified CCX system.

Configure Unified CCX Subsystems

You need to provision your Unified CCX subsystems to enable the Unified CCX Engine to run multiple applications to handle Unified Communications calls or HTTP requests.



Note You need to configure a particular subsystem only if you are using Unified CCX applications that require it and which are installed and activated using the appropriate license.

To continue the Unified CCX system configuration process, connect to the Unified CCX Administration web interface and perform the task in the links listed in the Related Topics section.

Provision Unified CCX Subsystem

If you have purchased any of the three versions of Unified CCX, you must provision the Unified CCX subsystem.

Provision the following settings on the Unified CCX subsystem:

- **RmCm Provider**

The Resource Manager (RM) of the Unified CCX system uses a Unified CM user (called a Unified CM Telephony provider) for monitoring agent phones, controlling agent states, and routing and queuing calls.

- **Resources**

Agents that answer calls are also called *resources*. After you create a resource group, you must assign agents (resources) to that group.

- **Resource Groups**

Collections of agents that your CSQ uses to handle incoming calls. To use resource group-based CSQs, you must specify a resource group.

- **Skills**

Customer-definable labels that are assigned to agents. You can route incoming calls to agents who have the necessary skills or set of skills to handle the call.

- **CSQs**

After you assign an agent to a resource group or assign skills to an agent, you need to configure the agent for the CSQ to which the agent will be assigned.

- **Agent-Based Routing Settings**

You can configure Automatic Work and Wrapup Time settings for the agent-based routing feature from the Agent-Based Routing Settings page.

- **Teams**

If you want to create or associate teams with various agents, CSQs, and supervisors, you need to configure team settings.

Provision Additional Unified CCX Subsystems

The additional Unified CCX subsystems provide HTTP, Database, and email features.

Provision the following subsystems:

- **HTTP**—The HTTP subsystem enables Unified CCX applications to respond to requests from a variety of web clients.
- **Database**—The Database subsystem enables Unified CCX applications to communicate with enterprise database servers.
- **eMail**—The eMail subsystem enables Unified CCX applications to create and send email.

View License Information

The initial license configuration is part of the Setup Wizard procedure (during installation). The uploaded licenses define the feature set for a Unified CCX system. See *Cisco Unified Contact Center Express Install and Upgrade Guide* for more information on obtaining and installing licenses for Cisco Unified CCX.

You can add additional licenses using the **Add Licenses** submenu option.



Note

- If two licenses with the same feature name are uploaded, the Unified CCX Administration Display Licenses web page will display the earlier date as the expiry date. Although the expiry date refers to the earlier date, it does not mean that the license expires on the date displayed in the “Display Licenses” page if you upload a permanent license.
- If a permanent license is uploaded over an already existing temporary license, a license expiry message is displayed for the temporary license for the feature. This license expiry message is displayed both in License Information and Appadmin home page. The Appadmin home page displays a popup message.

For Unified CCX, if you have a premium license with an outbound license, the Unified CCX Administration Display Licenses web page displays:

- The number of licensed IVR ports and dedicated IVR ports for IVR outbound.
- The number of licensed agent seats and In Use agent seats for progressive and predictive agent outbound.



Note

The number of In Use IVR ports and In Use agent seats are displayed only for the master node.

**Caution**

Deleting or reducing the number of IVR ports for outbound in the license is not a supported scenario in Unified CCX. Doing this might lead to inaccurate data in Dedicated Licensed Ports, which in turn might lead to more abandoned calls.

To view license details, perform the following procedure:

Procedure

Choose **System > License Information > Display License(s)** from the Unified CCX Administration menu bar.

The License Information web page opens, displaying the details of the configured licenses, including the expiry date in the case of time-bound licenses.

Upload Licenses

Software for all of the Unified CCX feature components are loaded on the system during installation. However, no feature is available for use unless a license for that feature is added and activated.

You can upload and display licenses using the License Information page. To upload a license, complete the following steps.

Procedure

Step 1 From the Unified CCX Administration menu bar, choose **System > License Information > Add License(s)**.

The License Information web page opens.

Step 2 Specify a License file or click **Browse** to locate a file.

You can either specify a single file with a .lic extension or a .zip file containing multiple .lic files.

Note While you are upgrading from a previous release, if there are multiple licenses, zip all the .lic files into a single .zip file and then upload the zip file. If specifying a .zip file, ensure that all .lic files that need to be added are in the root of the .zip file and are not in subfolders in the .zip file.

Step 3 Click **Upload**.

On successful upload of the license, you will see the following confirmation message in the status bar at the top of this web page: `License has been uploaded successfully`

If you upload an Add-on license to increase the existing licensed Outbound IVR ports, the following message will be displayed :

`As the number of licensed Outbound IVR Ports have increased, please increase the number of ports in the Outbound Call Control Group to utilize all the licensed ports.`

Configure Unified CCX Applications

After you provision the Unified CCX subsystems and view your license information, you need to configure Unified CCX applications to interact with contacts and perform a wide variety of functions.

To continue the Unified CCX system configuration process, connect to the Unified CCX Administration web interface and manage the following tasks:

- [Available Applications, on page 11](#)
- [Manage Scripts Prompts, Grammars, and Documents, on page 11](#)
- [Wizards Menu, on page 297](#)

Available Applications

There are several types of applications you can configure for Unified CCX:

- Script applications perform such functions as receiving calls, playing back prompts, receiving caller input, transferring calls, and queueing calls.
- The Busy application simulates a busy signal.
- The Ring-No-Answer application simulates a ringtone.

After adding a Unified CCX application, you need to define a *trigger* so that this application can respond to telephone calls and HTTP requests. Triggers are specified signals that invoke application scripts in response to incoming contacts.

Manage Scripts Prompts, Grammars, and Documents

The process of configuring Cisco script applications includes uploading Unified CCX scripts and prerecorded prompts, installing grammars and customized languages, and adding triggers to applications.

Depending on your particular Unified CCX implementation, you may need to perform most or all of the following tasks to configure a Cisco script application:

- **Manage scripts**—Cisco script applications are based on scripts that you must upload to the repository and make available to the Unified CCX system.
- **Manage prompts**—Many applications make use of prerecorded prompts, stored as .wav files, which are played back to callers to provide information and elicit caller response. You must upload these .wav files to the repository and make them available to the Unified CCX system.
- **Install grammars**—A *grammar* is a specific set of all possible spoken phrases and Dual Tone Multi-Frequency (DTMF) digits to be recognized by Unified CCX applications and acted upon during run time. The Unified CCX system uses specific grammars when recognizing and responding to caller responses to prompts. You must store these grammars in a directory to make them available to the Unified CCX system.
- **Install customized Unified CCX languages**—Language packs, such as American English and Canadian French, are installed with Unified CCX.

Configure Unified CCX Historical Reporting

When you install the Unified CCX system, the installation process creates a database named db_cra. This database contains:

- Information for historical reports, including Unified CCX configuration information, stored procedures, and some call statistics
- The ContactCallDetail table, which is the main table for call statistics

To conclude the Unified CCX system configuration process, connect to the Unified CCX Administration web interface and perform the following Historical Reporting Configuration tasks:

Procedure

- Step 1** Define the maximum number of database connections for report client sessions.
 - Step 2** Assign historical reporting capability to users.
 - Step 3** Configure the Daily Purge Schedule and specify notification parameters.
-

Manage Unified CCX

To manage your Unified CCX, you must first provision and configure it. The day-to-day administration of the Unified CCX system and datastores consist of many tasks, such as:

- Starting and stopping the Unified CCX Engine and processes.
- Managing and monitoring the status of Unified CCX servers and components across the cluster.



Note Support for high availability and remote servers is available only in multiple-server deployments.



CHAPTER 2

Unified CCX Administration Web Interface

The Unified CCX provides a multimedia (voice, data, and web) IP-enabled customer-care application environment, using VoIP technology that allows your Cisco Unified Communications network to share resources with your data network.

You can then use a web browser located on any computer on the IP network to configure and administer your applications with the Unified CCX Administration web interface.



Note Support for high availability and remote servers is available only in multiple-server deployments.

The Unified CCX Administration web interfaces (Cisco Unified CCX Administration and Cisco Unified CCX Serviceability) allows you to:

- Configure and monitor overall system functions, applications, and subsystems
- Access a wide variety of system tools
- Perform many other administrative tasks

The following sections provide more information about the Unified CCX Administration web interface:

- [Access Unified CCX Administration Web Interface, on page 13](#)
- [Cisco Unified CCX Administration Menu Bar and Menus, on page 14](#)
- [Cisco Unified CCX Administration Navigation, on page 15](#)
- [Unified CCX Configuration Web Pages, on page 17](#)

Access Unified CCX Administration Web Interface

The web pages of the Unified CCX Administration web interface allow you to configure and manage the Unified CCX system and its subsystems.

Use the following procedure to browse into the server and log in to Unified CCX Administration web interface.

Procedure

- Step 1** Open the Unified CCX Administration Authentication page from a web browser on any computer on your network and enter the following case-sensitive URL:
- ```
https://<servername>/appadmin
```
- In this example, replace <servername> with the hostname or IP address of the required Unified CCX server. A Security Alert dialog box is displayed.
- Step 2** Click the appropriate button.
- The Authentication page appears.
- Note**
- Ensure that Cisco Tomcat and Cisco Unified Cluster View Daemon services are running before you log in to the Unified CCX Administration using the URL in Step 1.
  - Verify that the popup blocker is disabled if you are using Microsoft Internet Explorer Version 6.0 or later or Mozilla Firefox Version 2.0 or 3.0 browser.
  - Enable the compatibility mode if you are using Microsoft Internet Explorer Version 11.0.
- Tip** Add the IP address of the Unified CCX server to the "Compatibility View Settings," to enable the compatibility mode in Microsoft Internet Explorer Version 11.0.
- Step 3** On the main Cisco Unified CCX Administration web page, enter your Unified CCX username and password.
- Note** If you are accessing Unified CCX for the first time, enter the Application User credentials specified during installation of the Unified CCX. See the *Cisco Unified Contact Center Express Install and Upgrade Guide* for further instructions. The user ID is not case sensitive in Unified CCX 9.0(1).
- Step 4** Click **Login**.
- A web page opens listing information about Cisco Unified CCX Administration and the Cisco Unified CCX Administration menu bar appears at the top of the page.
- Note**
- For security purposes, Cisco Unified CCX Administration logs you out after 30 minutes of inactivity, and you must log back in.
  - Unified CCX Administration detects web based cross-site request forgery attacks and rejects malicious client requests. It displays the error message, "The attempted action is not allowed because it violates security policies."
  - Avoid using multiple sessions of the Unified CCX Administration at the same time.
- 

# Cisco Unified CCX Administration Menu Bar and Menus

The Cisco Unified CCX Administration menu bar appears at the top of every web page of the Unified CCX Administration web interface. You begin every Unified CCX configuration and administration task by choosing a menu and submenu option from the menu bar.

The Cisco Unified CCX Administration menu bar contains the following menu options:

- **System**—Contains options for configuring new servers in the cluster, Unified CM information, language information, changing system parameters, custom file configuration, standalone CUIIC configuration, and adding or displaying licenses.
- **Applications**—Contains options for managing applications, scripts, prompts, grammars, documents, and AAR files.
- **Subsystems**—Contains options for configuring parameters for the subsystems that are licensed for your Unified CCX server. Your Subsystems menu may include submenu options for one or more of the following subsystems: Unified CM Telephony, Unified CCX, Database, HTTP, Chat and Email, Cisco Media, MRCP Automatic Speech Recognition (ASR), and MRCP Text-To-Speech (TTS).
- **Wizards**—Contains options that provide access to the following wizards of your Unified CCX server: Application and RmCm.
- **Tools**—Contains options that allow you to access system tools such as Plug-ins, Real-Time Reporting, Real-Time Snapshot Config. You can also assign access levels to administrators and supervisors and reset passwords.
- **Help**—Provides access to online help for Unified CCX.

## Cisco Unified CCX Administration Navigation

After you log in, the main Cisco Unified CCX Administration web page appears.



**Note** The minimum supported screen resolution specifies 1024 x 768. Devices with lower screen resolutions may not display the applications correctly.

The choices in the drop-down list include the following Cisco Unified CCX Administration applications:

- **Cisco Unified CCX Administration** — Uses Cisco Unified CCX Administration to configure system parameters, subsystems, wizards, and much more.
- **Cisco Unified CCX Serviceability** — Takes you to the main Cisco Unified CCX Serviceability web page that is used to configure trace files, alarms, and to activate and deactivate services.
- **Cisco Finesse Administration** — Uses Cisco Finesse Administration to configure system settings in Cisco Finesse.
- **Cisco Unified Serviceability** — Takes you to the main Cisco Unified Serviceability web page that is used to save alarms and traces for troubleshooting, provide alarm message definitions, activate and deactivate services and so on.
- **Cisco Unified OS Administration** — Takes you to the main Cisco Unified OS Administration web page, so that you can configure and administer the Cisco Unified Communications platform.
- **Disaster Recovery System** — Takes you to the Cisco Disaster Recovery System, a program that provides data backup and restore capabilities for all servers in a Cisco Unified CCX Administration cluster.

You can log in to Cisco Unified CCX Administration either as an administration user or an application user.



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**Note** An administration user is an end user that is configured on the Unified CM with Administrator capability in Unified CCX.

An application user is a user that is configured during the installation of Unified CCX having administrator capability by default.

---

If you log in as an Administrator, you can access the following applications that display in the navigation drop-down list in the top right corner of the Administration menu bar:

- Cisco Unified CCX Administration
- Cisco Unified CCX Serviceability
- Cisco Finesse Administrator

If you log in as an application user, you can seamlessly traverse between the Unified CCX web applications as well as the Cisco Unified Serviceability without logging in again.



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**Note** An application user can log in to these four Unified CCX web applications even when Unified CM is down.

To access these applications from Cisco Unified CCX Administration, you must first choose the desired application from the navigation drop-down list in the upper right corner and click **Go**.



---

**Note** Cisco Finesse Administration Console opens in a new tab or in a new window based on the browser settings.

To log in to Cisco Finesse Administration, you must be a user with administration privileges.

When the Cisco Tomcat service is down on any of the Unified CCX nodes, you will not be able to launch Cisco Unified CCX Administration from any of the Unified CCX nodes; therefore, you will not be able to launch the Cisco Finesse Administration from within it.

In that case, you can launch the Cisco Finesse Administration directly from the browser.

To launch the Finesse Administration Console, direct your browser to `https://FQDN:8445/cfadmin`, where *FQDN* is the fully-qualified domain name of the server.

For more information about Cisco Finesse Administration Console, see [Cisco Finesse Administration Console, on page 325](#).

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You can access the following platform-based web applications using the platform user credentials as configured during installation of Unified CCX:

- Cisco Unified Operating System Administration
- Disaster Recovery System



## Unified CCX Configuration Web Pages

When you choose any menu and submenu option from the Unified CCX Administration menu bar, a configuration or administration web page opens. Use this web page to continue your configuration or administration task.

In some cases, you will perform your configuration or administration task on this one web page.

In other cases, the web page that first opens when you choose a submenu item leads to a series of web pages. For example, the Unified CM Telephony Call Control Group Configuration web page contains both a tool bar in the top with a few icons that link to other web pages and a configuration area.

The following table describes the **Refresh All** button and the **Copy**, **Delete**, and **Refresh** icons that are found on several Unified CCX web pages.

| Icon/Button | Description                                                                                                                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Copy        | Click this icon to copy the information in that specific row.<br><br><b>Note</b> When you click <b>Copy</b> , the web page displays the copied configuration so you can make changes, if desired. |
| Delete      | Click this icon to delete the information in that specific row.                                                                                                                                   |
| Refresh     | Click this icon to refresh the information in that specific row.                                                                                                                                  |
| Refresh All | Click this button to refresh the information listed on this page.                                                                                                                                 |

## Details for Advanced Configuration

In Unified CCX Administration web interface, advanced configuration with **Show More** and **Show Less** options exists. On the applicable pages, all configuration details can be displayed or minimised based on user preferences and requirements.

A page by default displays fewer parameters. Parameters configured with default values and not requiring modification or user input are now available in the advanced configuration section. You can access this advanced configuration section by clicking the **Show More** button at the bottom of the page. When you click this button, the extra parameters become visible and the button changes to **Show Less**. When you click **Show Less**, the page reverts to its original list of parameters.



**Note** If you are using Unified CCX with Cisco Contact Center Gateway solution, see the *Cisco IPCC Gateway Deployment Guide for Cisco Unified ICME/CCE/CCX*. The instructions for configuring Unified CCX with that solution differs from what is described in this guide. The Unified Gateway provides for the integration of the Unified ICME system with Unified CCX by way of Unified Gateway. See the Cisco Unified Contact Center Enterprise installation and upgrade guides available at [https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod\\_installation\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html) for detailed information. The Unified Gateway is a Peripheral Gateway (PG), which you configure on the Unified ICME software.

## Toolbar and Buttons

On the top left toolbar of many web pages, you will find an **Add New** icon and the same **Add New** will also be displayed as a button at the bottom of the web page.

For example, the Unified CM Telephony Call Control Group Configuration web page contains **Add New** and **Refresh All** icons on the top left toolbar and the same are displayed as buttons at the bottom of the web page. When you click the **Add New** icon or button, another Unified CM Telephony Call Control Group Configuration web page opens. Use this area to add a new Unified CM Telephony Call Control Group.

Many web pages contain icons or buttons that perform a variety of functions. For example, the **Refresh All** button on the Unified CM Telephony Call Control Group Configuration web page refreshes all the Unified CM Telephony call control group configurations in the Unified CCX server.

A few web pages (for example, **Subsystems > Database > Parameters** page) also contain a **Reset to Default** icon and button. This allows you to revert to the software set defaults for each parameter on this page.

## Application and RmCm Wizards

In Unified CCX, two wizards are available in the main menu: the Application Wizard and the RmCm Wizard.

To improve the usability and configuration process, these wizards take you through the configuration pages in the required order and help ease the configuration process for these two features. You can access these wizards from a new main menu option called **Wizards**.



## CHAPTER 3

# Unified CCX Provision Checklist

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The Cisco Unified Communications Manager (CM) product supports both single-node and two-node (high availability) deployments available for the Cisco Unified Contact Center Express (CCX).

The deployment model is transparent to the Unified CCX installer as the clustering for Unified CM is performed through the Unified CCX Administration using the Unified CCX setup wizard. The high availability over WAN feature of Unified CCX is supported only for Unified CM deployments.

The following topics introduce the Unified CCX subsystem and explain how to modify the Unified CM information from Unified CCX.

- [Unified CCX, on page 19](#)
- [Provision Unified CCX, on page 20](#)
- [Change Licensing Packages, on page 21](#)

## Unified CCX

The Unified CCX system uses the Unified CCX subsystem as part of an ACD system to provide resource distribution and queuing to call centers.

Two types of routing are available:

- **Contact Service Queue (CSQ)-based routing**—CSQs are entities that route calls to your resources (agents). Each CSQ controls incoming calls and determines where an incoming call is placed in the queue and to which agent the call is sent.

Each CSQ selects resources from an associated resource pool that you define or from resource skills for all Unified CCX license packages. When an agent becomes available to take a call, the system chooses a queued call from one of the CSQs whose resource pool includes the agent, and routes that call to that agent.

- **Agent-based routing**—Agent-based routing provides the ability to send a call to a *specific* agent, rather than any agent available in a CSQ.

A Unified CCX agent can participate in both CSQ-based and agent-based routing. A Unified CCX agent can be any one of the following:

- Cisco Finesse
- IP Phone Agent
- Extension Mobility (EM) Agent

- Supervisor (if the supervisor is taking calls)



**Note** A supervisor who is not taking calls is not considered to be an agent.

Calls are queued in the Unified CCX server and sent to agents by the Unified CCX server.

The machine you install your Unified CCX system on determines how many agents and IVR ports Unified CCX can accommodate. However, be aware of the following general configuration rules:

- Each agent cannot be associated with more than:
  - 25 CSQs (This is a configuration design guideline; Unified CCX Administration does not enforce the rule.)
  - 50 skills (Unified CCX Administration enforces this rule.)
- Each CSQ cannot be associated with more than 50 skills. (Unified CCX Administration enforces this rule.)
- A call should not queue for more than 25 CSQs. (This is a configuration design guideline; Unified CCX Administration does not enforce the rule.)

## Provision Unified CCX

To provision Unified CCX, complete the following tasks:

| Step   | Task                                                                      | Unified CM                                                           |
|--------|---------------------------------------------------------------------------|----------------------------------------------------------------------|
| Step 1 | Configure Unified CM users who will be agents in your Unified CCX system. | <a href="#">Provision Unified CM for Unified CCX, on page 23</a>     |
| Step 2 | Provision resources information for Unified CCX telephony and media.      | <a href="#">Provision Unified CM Telephony Subsystem, on page 59</a> |
| Step 3 | Provision RmCm Provider to allow RmCm Subsystem to be in service.         | <a href="#">RmCm Provider Configuration, on page 89</a>              |
| Step 4 | Create resource groups.                                                   | <a href="#">Resource Groups, on page 91</a>                          |
| Step 5 | Create skills.                                                            | <a href="#">Skills Configuration, on page 92</a>                     |
| Step 6 | Assign agents to resource groups and assign skills to agents.             | <a href="#">Agent Configuration, on page 94</a>                      |
| Step 7 | Create Contact Service Queues.                                            | <a href="#">Contact Service Queue Configuration, on page 98</a>      |
| Step 9 | Provision agent-based routing—if using Unified CCX Enhanced or Premium.   | <a href="#">Configure Agent-Based Routing, on page 106</a>           |

| Step    | Task                                     | Unified CM                                       |
|---------|------------------------------------------|--------------------------------------------------|
| Step 10 | Create teams and assign agents to teams. | <a href="#">Teams Configuration, on page 107</a> |

## Change Licensing Packages

Now, the Unified CCX system can be upgraded from Enhanced to Premium.

While upgrading the licenses, you need to configure the following system parameters:

- **Enhanced to Premium**—You need to configure the Number of Direct Preview Outbound Seats while upgrading to a Premium license.



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**Note** Downgrade of license is not supported in Unified CCX.

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### Procedure

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Choose **System > System Parameters** from the Cisco Unified CCX Administration menu bar to open the System Parameters Configuration web page where you can update these values.

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## CHAPTER 4

# Provision Unified CM for Unified CCX

When you access Unified CCX Administration for the first time in a cluster, the system automatically initiates the cluster setup procedure once for each cluster to perform the following tasks:

- Identify Unified CCX license files
- Enter information about Unified CM Administrative XML Layer (AXL) and Unified CM Telephony and RmCm providers

You can modify the Unified CM information from Unified CCX. See the *Cisco Unified Contact Center Express Install and Upgrade Guide* for detailed information on how to perform the initial system setup using the Unified CCX Administration web interface.

The following topics explain how to modify the Unified CM information from Unified CCX:

- [Configure Unified Communications Manager Information, on page 23](#)
- [Modify AXL Information, on page 24](#)
- [Modify Unified Communications Manager Telephony Information, on page 25](#)
- [Modify RmCm Provider Information, on page 27](#)
- [Unified Communications Manager for Unified CCX Configuration, on page 28](#)

## Configure Unified Communications Manager Information

During initial setup of Unified CCX using the Unified CCX Administration web interface, the administrator who installed the Unified CCX should have already provided the Unified Communications Manager IP address and hostname(s). Upload the Cisco Unified Communications Manager Tomcat certificate from Cisco Unified Communications Manager (CUCM) into the Unified CCX Tomcat trust store using the Cisco Unified OS Administration interface. The administrator must also provide the Administrative XML Layer (AXL) authentication (user ID and password) information.

The Unified Communications Manager Configuration web page allows you to configure and update the AXL authentication information, Unified Communications Manager Telephony subsystem information, and RmCm Provider configuration information from within Unified CCX.

This page has three blocks of information: AXL service details, Unified Communications Manager Telephony Provider details, and RmCm Provider details.

# Modify AXL Information

To change previously configured AXL information, complete the following steps.



**Note** If you want to change the credentials, change first in Unified Communications Manager and then in Unified CCX. Otherwise, Unified CCX might have issues communicating with Unified Communications Manager.

## Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **System > Cisco Unified CM Configuration**.

The Cisco Unified Communications Manager Configuration web page opens.

**Step 2** Go to the **AXL Service Provider Configuration** section to modify the AXL information using the following fields:

| Field                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AXL Service Provider Configuration</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Selected AXL Service Providers            | Lists the AXL service providers selected by the Unified CCX user. Select the required entry and move to the opposite list box using the right and left arrows. Arrange the order of the selected entries using the up and down arrows.<br><br><b>Note</b> If you deselect the AXL service provider from the Selected list box, a Microsoft Internet Explorer or Mozilla Firefox window opens, informing you about the (list of) deselected services. For security reasons (in case the service is being used by another AXL service provider), manually disable the AXL service only from the Unified Communications Manager. |
| Available AXL Service Providers           | Lists the Unified Communications Manager entries in the cluster. Select the required entry and move to the opposite list box using the right and left arrows.<br><br><b>Note</b> Make sure you configure multiple AXL providers running the AXL Service for a redundant system.                                                                                                                                                                                                                                                                                                                                               |
| <b>Cluster Wide Parameters</b>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| User Name                                 | The Unified Communications Manager User ID. This information is provided during cluster setup in the Unified CCX installation process.<br><br>When you select an AXL Service Provider, the corresponding username is automatically displayed in this field. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                        |
| Password                                  | Password for the Unified Communications Manager User ID. This information is provided during cluster setup in the Unified CCX installation process. When you select an AXL Service Provider, the corresponding user password is automatically displayed in this field. This is a mandatory field.                                                                                                                                                                                                                                                                                                                             |



- Step 3** After logging in to the Unified CCX Administration web interface, follow these steps to update the AXL password:
- Log in to Unified Communications Manager Administration web interface and update the password for the application user (AXL provider).
  - Navigate back to **System > Cisco Unified CM Configuration** web page of Unified CCX and enter the new password in the Password field.  
  
A dialog box prompts you to confirm the AXL username and password. Reenter the AXL user ID and password and click **Login**.  
  
The system validates the data and takes you back to the Unified Communications Manager configuration page.
  - Enter the updated password once again to validate and click **Update**.  
  
The AXL password is updated successfully and you should be able to log in to Unified CCX Administration web interface of Unified CCX with the new AXL password.
- Step 4** Click **Update** at the top of the Cisco Unified Communications Manager Configuration web page or the **Update** button that displays at the bottom of the web page to save the changes. The Unified Communications Manager Configuration web page refreshes to display the new settings.  
  
The selected AXL services are now enabled. If the selected AXL services cannot be enabled, an error message instructs you to reselect AXL service providers.

---

## Modify Unified Communications Manager Telephony Information



**Note** The Unified Communications Manager Telephony client is installed in the background after you configure the Unified Communications Manager Telephony user. The Unified Communications Manager Telephony client runs silently and verifies that the right version and the right client are installed.

Configuring the Unified Communications Manager Telephony user does not automatically install the Unified Communications Manager Telephony client. This is normally done during activation of Unified CCX Engine in component activation (see *Cisco Unified Contact Center Express Serviceability Administration Guide*). To install it manually, go to **Subsystems > Unified CM Telephony** and select the **Cisco JTAPI Resync** submenu option from the Unified CCX Administration menu bar.

The latest list of CTI Managers within a cluster are listed in this section. If the Unified Communications Manager is not functioning or if the Unified CCX cannot connect to the Unified Communications Manager for any reason, information obtained from the most recent connection is saved as a part of the bootstrap information.

To change previously configured Unified Communications Manager Telephony information, complete the following steps.

## Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **System > Unified CM Configuration**.

The Cisco Unified Communications Manager Configuration web page opens.

**Step 2** Scroll down to the **Unified CM Telephony Subsystem - Unified CM Telephony Provider Configuration** section and reconfigure the Unified Communications Manager Telephony information using the following fields.

| Field                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unified CM Telephony Subsystem—Unified CM Telephony Provider Configuration</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Selected CTI Managers                                                             | Lists the CTI Managers selected by the Unified CCX user. Select the required entry and move to the opposite list box using the right and left arrows. Arrange the order of the selected entries using the up and down arrows.<br><br><b>Note</b> If you deselect CTI Managers from the Selected list box, a Microsoft Internet Explorer or Mozilla Firefox window opens, informing you about the (list of) deselected CTI Managers. |
| Available CTI Managers                                                            | Lists the CTI Managers in the cluster. Move to the opposite list box using the right and left arrows.                                                                                                                                                                                                                                                                                                                               |
| <b>Cluster Wide Parameters</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| User Prefix                                                                       | The syntax of the User ID is: <code>&lt;userprefix&gt;_&lt;nodeid&gt;</code><br>For example, if you set this field to <b>cti_user</b> , the User ID for Node 1 will be <b>cti_user_1</b> . This is a mandatory field.                                                                                                                                                                                                               |
| Password                                                                          | Password you defined for the User ID in Unified Communications Manager.<br><br>If a CTI Manager is already selected, the corresponding password is displayed in this field. This is a mandatory field.                                                                                                                                                                                                                              |
| Confirm Password                                                                  | Reenter the password that you provided in the Password field. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                            |

**Step 3** Click **Update** at the top of the Cisco Unified Communications Manager Configuration web page or click the **Update** button that displays at the bottom of the web page to save the changes.

The Unified Communications Manager Configuration web page refreshes to display the new settings.

The newly selected CTI Manager is now enabled. If the selected CTI Manager cannot be enabled, an error message instructs you to reselect CTI Managers.

**Note** In a HA over WAN deployment of Unified CCX, the JTAPI user will be created only for the selected node. To create JTAPI user for the HA node, you have to explicitly select the HA node, make necessary updates, and click **Update**.

## Modify RmCm Provider Information

The list of all CTI Managers available in a cluster are saved as a part of the bootstrap information. You can change to any available CTI Managers listed in the Available CTI Managers list box in this page.



**Note** The RmCm Provider specified through the Unified CCX Administration is automatically created in Unified Communications Manager. You do not need to use the Unified Communications Manager web interface to create the user.

To change previously configured RmCm provider information or to configure a new RmCm Provider, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **System > Unified CM Configuration**.

The Unified Communications Manager Configuration web page opens.

**Step 2** Scroll down to **RmCm Subsystem - RmCm Provider Configuration** and reconfigure the selected CTI Manager using the following fields:

| Field                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RmCm Subsystems—RmCm Provider Configuration</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Selected CTI Managers                              | Lists the CTI Managers selected by the Unified CCX user. Select the required entry and move to the opposite list box using the right and left arrows. Arrange the order of the selected entries using the up and down arrows.<br><br><b>Note</b> If you deselect CTI Managers from the Selected list box, a Microsoft Internet Explorer or Mozilla Firefox window opens, informing you about the (list of) deselected CTI Managers. |
| Available CTI Managers                             | Lists the CTI Managers in the cluster. Move to the opposite list box using the right and left arrows.                                                                                                                                                                                                                                                                                                                               |

| Field            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| User ID          | User prefix for the Unified Communications Manager User IDs to be created in Unified Communications Manager.<br><br><b>Note</b> The RmCm User Id must neither be a standard user created on Cisco Unified CM by default nor be a part of Standard CM Super Users group.<br><br>If a CTI Manager is already selected, the corresponding user name is displayed in this field. If you change the CTI Managers, be sure to enter the corresponding user prefix for the selected service. This is a mandatory field. |
| Password         | Password you defined for the User ID in Unified Communications Manager.<br><br>If a CTI Manager is already selected, the corresponding password is displayed in this field. If you change the CTI Manager, be sure to enter the corresponding password for the selected service. This is a mandatory field.                                                                                                                                                                                                      |
| Confirm Password | Reenter the password that you provided in the Password field. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Step 3** Click **Update** at the top of the Cisco Unified Communications Manager Configuration web page or click the **Update** button that displays at the bottom of the web page to save the changes.

The Unified Communications Manager Configuration web page refreshes to display the new settings.

The newly selected RmCm Provider is now enabled. If the selected RmCm Provider cannot be enabled, an error message instructs you to reselect RmCm Provider.

## Unified Communications Manager for Unified CCX Configuration

To enable Unified CCX to communicate with Unified Communications Manager, you also need to assign extensions for the users who will be agents in your Unified CCX system.



**Note** If you delete a Unified CCX user with Administrative rights from Unified Communications Manager, you can still log in to the Unified CCX Administration web interface as an application user.



**Note** Q Signaling (QSIG) and Path Replacement (PR) features of Unified Communications Manager are not supported by Unified CCX.

## Invoke Unified Communications Manager Administration

Begin the process of configuring Unified Communications Manager by connecting to the Unified Communications Manager Administration web interface.

To connect to the Unified Communications Manager Administration web interface, complete the following steps.

### Procedure

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- Step 1** From a web browser on any computer on your network, enter the following URL:  
**https://servername/ccmadmin.**
- In this example, *servername* is the hostname or IP address of your Unified Communications Manager server. A Security Alert dialog box is displayed.
- Step 2** Click the appropriate button.
- Step 3** At the main Cisco Unified Communications Manager Administration web page, enter the Unified Communications Manager username and password, and then click **Login**.
- The Unified Communications Manager Administration web page appears.
- You are now ready to use the Unified Communications Manager Administration web interface to configure users for Unified CCX.
- 

## Unified Communications Manager Users as Unified CCX Agents



**Warning** Do not configure Unified Communications Manager users having the same username/password as the application administration credentials (configured during installation). Doing so may restrict the Unified Communications Manager when shared across multiple Unified CCX servers.

---



**Caution** When logging in to Cisco Agent Desktop, agents use the Unified Communications Manager user ID and password. While the Unified Communications Manager limits agent IDs to 128 alphanumeric characters, the Unified CCX limits agent IDs to 31 alphanumeric characters. Be sure to abide by the 31-character limit when configuring agents in Unified Communications Manager.

---



**Note** Languages like Cyrillic use 2 bytes per character. Some of the desktop applications do not support more than 16 characters. Hence, the first name, the last name, and the user ID of the agent for those languages should be restricted to 16 characters.

---

### Agent ID

When logging in to the desktop, agents use the Unified Communications Manager user ID and password. Unified Communications Manager limits agent IDs to 128 alphanumeric characters, but Unified CCX limits the agent IDs to 31 bytes.

**Attention**

- Unified Communications Manager user ID should not exceed 31 bytes. If user ID exceeds 31 bytes, Unified CCX does not synchronize users from Unified Communications Manager.

**Agent Name**

Agent name includes the first name and last name. The following is the limit for agent name:

- English-based script (German, Spanish, English, etc)—50 bytes / 50 characters
- Non-English script (Arabic, Chinese, Cyrillic, etc)—48 bytes / 16 characters

**Attention**

Unified CCX truncates the name to 50 / 48 bytes and stores if the agent name exceeds the above limit.

RmCm uses the Unified Communications Manager database to determine which devices it can control and provides an interface method for getting the Media Access Control (MAC) address of the calling party.

After you install RmCm, you have access to the Unified Communications Manager database. The database stores parameters that initialize Unified Communications Manager Telephony, user profiles, application logic, network-specific configuration information, and Directory Number Associations such as Primary Extension and Unified CCX Extension.

The Primary Extension field represents the primary directory number for the end user. End users can have multiple lines on their phones. From the drop-down list box, choose a primary extension when associating devices for this end user.

Unified CCX Extension allows you to define Unified Communications Manager users as Unified CCX agents in Unified Communications Manager.

To assign Unified CCX devices to end users and application users in the Unified Communications Manager, these users must first exist in Unified Communications Manager. If these users do not exist, you must first add the users. See the *Cisco Unified Communications Manager Administration Guide* to obtain detailed information about the Unified CCX web interface and configuration procedures. After adding the end user and the application user, be sure to modify their Unified CCX settings.

**Agents and Supervisors with IDs That Match Reserved Words Cannot Sign In**

Do not use the following reserved words for agent ID or supervisor ID because these IDs conflict with system account names that are used internally within the Unified CCX server:

| System\Components    | Reserved words   |
|----------------------|------------------|
| Unified CCX Web Chat | admin            |
| Cisco Finesse        | admin            |
|                      | finesse          |
|                      | fippa            |
|                      | xmpprootowner    |
|                      | presencelistener |

**Note**

- If a user tries to sign in with a reserved word for the agent ID or supervisor ID, the sign-in fails.
- Do not use the reserved words for IDs whether they are upper case, lower-case, or any combination of both cases. For example, admin, ADMIN, or Admin.

## Guidelines for Agent Phone Configuration

Follow these guidelines when configuring agent phones for Unified CCX agents:

- Choose **Device > Phone** in Unified Communications Manager Administration. The Find and List Phones window is displayed.

Enter search criteria to locate a specific phone and click **Find**. A list of phones that match the search criteria is displayed. Click the device name of the phone to which you want to add a directory number. The Phone Configuration window is displayed.

In the Unified Communications Manager Administration Phone Configuration web page, select the required Association Information (on the left) to get to the Directory Number Configuration web page. On this page, make the following changes:

- In the Multiple Call/Call Waiting Settings section, set the Maximum Number of Calls to 2 (default is 4) for Cisco Unified IP Phones 7900 Series and 3 for Cisco Unified IP Phones 8961, 9951, and 9971.

**Note**

If you are using Cisco Finesse for your agent desktop, you must set the Maximum Number of Calls to 2 for all agent phones.

- In the Multiple Call/Call Waiting Settings section, set the Busy Trigger value to 1 (default is 2).
  - In the Call Forward and Call Pickup Settings section, verify that you do not forward any Unified Communications Manager device to the Unified CCX extension of an agent.
  - In the Call Forward and Call Pickup Settings section, verify that you do not configure the Unified CCX extension of an agent to forward to a Unified CCX route point.
- Always disable (turn off) Secure Real-Time Transport Protocol (SRTP) when configuring a Cisco Unified Communications product. You can disable SRTP for a specified device or for the entire Unified Communications Manager:
    - For a specified device—Choose **Device > Phone**. In the Find and List Phone page, select the required phone device. In the Phone Configuration page for the selected phone, scroll down to the Protocol Specific Information section. To turn off SRTP on the phone device, select any one of the **Non Secure SCCP Profile auth by** choices from the drop-down list in **SCCP Phone Security Profile** or **SCCP Device Security Profile** field.
    - For the entire Unified Communications Manager cluster—Choose **System > Enterprise Parameters**. In the Enterprise Parameters Configuration page, scroll down to the Securities Parameters section, to verify that the corresponding value for the Cluster Security Mode field is 0. This parameter

indicates the security mode of the cluster. A value of 0 indicates that phones will register in nonsecure mode (no security).

- The Unified CCX extension for the agent must be listed within the top 4 extensions on the device profile. Listing the extension from position 5 on will cause Unified CCX to fail to monitor the device, so the agent will not be able to log in.
- Do not forward any Unified Communications Manager device to the Unified CCX extension of an agent.
- Do not configure the Unified CCX extension of an agent to forward to a Unified CCX route point.
- Do not use characters other than the numerals 0 to 9 in the Unified CCX extension of an agent.
- Do not configure two lines on an agent phone with the same extension when both lines exist in different partitions.
- Do not assign a Unified CCX extension to multiple devices.
- Do not configure the same Unified CCX extension in more than one device or device profile. (Configuring a Unified CCX extension in one device or device profile is supported.)
- To use Cisco Unified IP Phones 9900 Series, 8900 Series, and 6900 Series as agent devices, the RmCm application user in Unified Communications Manager needs to have “Allow device with connected transfer/conference” option assigned to itself.

To determine a list of Unified CCX agent devices supported by Cisco Finesse Desktop, see the [Compatibility Matrix for Cisco Unified CCX](http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCX) for active releases available at [http://docwiki.cisco.com/wiki/Compatibility\\_Matrix\\_for\\_Unified\\_CCX](http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCX).

## Modify Existing Unified Communications Manager Users

To use any version of Unified Communications Manager, you must first ensure that you define Unified Communications Manager users as Unified CCX agents in Unified Communications Manager. After you perform this task, these Unified CCX agents can be combined into Resource Groups, assigned Skills, and placed in CSQs.




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**Note** In Unified CCX, this operation is called “associating a device.”

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**Note** Be sure to assign Unified CCX devices to both end users and application users in the Unified Communications Manager web interface.

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To assign devices to an end user, you must access the End User Configuration window for that user. The End User Configuration window in Unified Communications Manager Administration allows the administrator to add, search, display, and maintain information about Unified Communications Manager end users.

To assign devices to an application user, you must access the Application User Configuration window for that user. The Application User Configuration window in Unified Communications Manager Administration allows the administrator to add, search, display, and maintain information about Unified Communications Manager application users.





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**Note** If Enterprise Mobility (EM) is used together with both Cisco Unified Communications Manager release 8.0 or later and Cisco Unified Communications Manager, the Resource Manager application user must be associated with the device profile and not with the device.

---

To modify the Unified CCX Extension settings for existing Unified Communications Manager users who are Unified CCX agents, complete the following steps:



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**Note** If you change or update an end user ID in Unified Communications Manager, Unified CCX resets the end user's resource name, skills, and team to default values.

---

### Procedure

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- Step 1** Connect to the Unified Communications Manager Administration web interface.  
The Unified Communications Manager Administration web page appears.
- Step 2** Choose **User Management > End User**.  
The Find and List End Users page displays. Use the two drop-down list to search for an end user.
- Tip** To find all end users that are registered in the database, click **Find** without entering any search text. A list of discovered end users is displayed. Then, skip to Step 6.
- Step 3** From the first Find end user where drop-down list, choose one of the listed criteria.
- Step 4** From the second Find end user where drop-down list, choose one of the listed criteria.
- Step 5** Specify the appropriate search text, if applicable, and click **Find**.  
A list of discovered end users is displayed.
- Step 6** From the list of records, click the end user name that matches your search criteria.  
The End User Configuration page opens, displaying the configuration information for the end user that you chose.
- Step 7** In the Controlled Devices list box below the Device Information section, select the device and click the Down arrow below the Available Profiles list box. If the device that you want to associate with this end user is not displayed in this pane, do the following to associate devices with an end user:
- From the Device Information pane, click **Device Association**. The User Device Association page opens.
  - Finding a Device: Because you may have several devices in your network, Cisco Unified Communications Manager lets you locate specific devices on the basis of specific criteria. Click **Find**. All or matching records are displayed. You can change the number of items that is displayed in each page by choosing a different value from the Rows per Page drop-down.
  - Associating a Device: From the Device association for (this particular end user) pane, choose the devices that you want to associate with this end user by checking the box to the left of the device names. You can also use the buttons at the bottom of the window to select and deselect devices to associate with the end user.
  - To complete the association, click **Save Selected/Changes**.

- e) From Related Links drop-down list in the upper right corner of the web page, choose **Back to User**, and click **Go**.

The End User Configuration page is displayed, and the associated devices that you chose are displayed in the Controlled Devices pane.

**Step 8** Select the required device and save your changes to associate that device with this end user.

After the device is associated, the Controlled Devices field displays the description information (for example, the MAC address) that the end user controls.

**Step 9** In the End User Configuration page, scroll down to the **Directory Number Associations** section.

**Step 10** In the **Primary Extension** field drop-down list and the **IPCC Extension** field drop-down list, choose the required agent extension for this device.

These fields represent the primary directory number for the end user. End users can have multiple lines on their phones. If you have a single line, be sure to select the same extension for both fields.

**Step 11** Click **Update** to apply the changes.

The specific End User Information page for this user appears, with the message that the update was successful.

**Step 12** From the Unified Communications Manager Administration menu bar, choose **User Management > Application User**. RmCm Providers are referred to as application users in Unified Communications Manager.

**Note** When you associate one device with the Unified CCX agent (end user), you must also be sure to associate the same device with the Unified CCX RmCm Provider (application user).

The Find and List Application Users window is displayed. Use the two drop-down list to search for the application users in Unified Communications Manager.

**Tip** To find all application users registered in the database, click **Find** without entering any search text. A list of discovered end users is displayed. Then, skip to Step 16.

**Step 13** From the first Find application user where drop-down list, choose one of the listed criteria.

**Step 14** From the second Find application user where drop-down list, choose one of the listed criteria.

**Step 15** Specify the appropriate search text, if applicable, and click **Find**.

A list of discovered application users is displayed.

**Step 16** From the list of records, click the application user name that matches your search criteria.

The window displays the application user that you choose.

**Step 17** Repeat Step 7 and Step 8 for the selected Application User.

These steps ensure that the Unified Communications Manager application users are also defined as Unified CCX agents in Unified Communications Manager.

**Step 18** Click **Update** to apply the changes.

The specific Application Information page for this user appears, with the message that the update was successful.

See the “User Management Configuration” section in the *Cisco Unified Communications Manager Administration Guide* for detailed information on how to configure an end user and application user using Unified Communications Manager.

Now that you have defined the agent in Unified Communications Manager, you can configure agents in Unified CCX. Before you configure the agent, you will also need to configure resource groups and CSQs.

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## Assign Unified Communications Manager Users as Cisco TelePresence Virtual Agents

The Cisco TelePresence application enables enterprises to create a live, face-to-face interaction with customers over the network. This solution allows rapid deployment of a virtual contact center infrastructure. Agents using Cisco TelePresence are referred to as virtual agents in this guide. Virtual agents connect to callers using Unified CCX, which incorporates ACD, CTI, and Unified IP IVR with Cisco Unified Communications Manager and providing the entire solution on one server.



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**Note** For more information on the Cisco TelePresence solution, see <https://www.cisco.com/en/US/products/ps7060/index.html>.

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The following guidelines apply for the Cisco TelePresence integration with Unified CCX:

- The only commonly supported codec for Unified CCX and Cisco TelePresence is G711.
- The following supervisor features are not supported:
  - Monitoring and Recording is not supported for Cisco TelePresence integration with Unified CCX.

Follow this procedure to assign Unified Communications Manager users as virtual agents:

### Procedure

- 
- Step 1** Identify the required Cisco TelePresence system that will participate as a virtual agent in the Unified CCX application.
- a) Note the Unified Communications Manager extension of the Cisco TelePresence deployment.
- Note** The Cisco Unified IP Phone 7970G and Cisco TelePresence system must be assigned the same extension in Unified Communications Manager, because they both share the same line.
- b) Note the MAC address or the Directory Number of the Cisco Unified IP Phone 7970G connected to the identified Cisco TelePresence system.
- Tip** From the Unified CCX perspective, this is another SIP endpoint.
- Step 2** Associate the Cisco Unified IP Phone 7970G with the Unified Communications Manager user to configure this user as a virtual agent.
- Step 3** Associate the Cisco Unified IP Phone 7970G with the RmCm provider.
- Note** Do not associate the corresponding Cisco TelePresence system with the RmCm provider.
-

## Configure Tool for Auto-Registered Phones Support (TAPS)

The Tool for Auto-Registered Phone Support (TAPS) loads a preconfigured phone setting on a phone. The TAPS works in conjunction with the Bulk Administration Tool (BAT). After the BAT is used to bulk add phones with dummy MAC addresses to Cisco Unified Communications Manager Release 9.0(1) Administration, you can plug the phones into the network.

The administrator or users can then dial a TAPS directory number that causes the phone to download its configuration. At the same time, the phone gets updated in the Unified Communications Manager database with the correct MAC address of the phone. Refer to [Configuring the Bulk Administration Tool \(BAT\)](#) if you are not familiar with the BAT.

For the TAPS to function, you must make sure that Auto-registration is enabled in Cisco Unified Communications Manager Administration (select **System** > **Cisco Unified CM**). Follow the instructions in the procedure below to install and configure TAPS application with Unified CCX.

### Procedure

- 
- Step 1** Log in to Cisco Unified Communications Manager Administration Release 9.0(1) and choose **Application** > **Plugins** from the Cisco Unified Communications Manager Administration menu bar.
- Step 2** In the Find and List Plugins web page, search for “Cisco TAPS” and click **Find**.
- Step 3** Download the TAPS\_AAR.aar file to your client PC, which is used for accessing Unified Communications Manager Administration and Unified CCX Administration.
- Step 4** Install Unified CCX. See the *Cisco Unified Contact Center Express Install and Upgrade Guide*, available at [https://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_installation\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html).
- Step 5** After installing Unified CCX, follow these steps from the User Configuration page in Unified CCX Administration:
- In the Cisco Unified Communications Manager Users list, select the Cisco Unified Communications Manager user whom you want to designate as the Cisco Unified CCX administrator and who can configure TAPS.
  - Click the **left arrow** (<) to move the selected user to the Cisco Unified CCX Administrator list.
  - Click **Finish**. The Cisco Unified CCX Setup Result Information window is displayed. This window confirms the result of the initial setup. The Cisco Unified CCX engine will restart.
  - Close your web browser.
- Step 6** Log in to Cisco Unified CCX Administration as the Unified CCX application administrator, who can configure TAPS. After installing and configuring Unified CCX and Unified Communications Manager, follow this procedure to set up TAPS:
- From the Unified CCX Administration menu bar, choose **Applications** > **AAR Management**. Click **Browse** and upload the TAPS\_AAR.aar file that you downloaded in Step 3 from Unified Communications Manager.

On successful upload, you will see a confirmation message in the status bar at the top of the AAR Management web page.

**Note** For TAPS configuration, you need to restart the Unified CCX engine and Unified CCX Cluster View Daemon (CVD). You can restart the CVD using the CLI command,

**utils service service name stop/start.**

- b) After restarting the CVD, log in once again to Cisco Unified CCX Administration as the Unified CCX application administrator. From the Unified CCX Administration menu bar, choose **Subsystems > Unified CM Telephony > Call Control Group**. Click **Add New** and provide the Call Control Group Configuration values for TAPS using the following fields:
- Group ID
  - Number of CTI Ports
  - Media Termination Support
  - Device Name Prefix
  - Starting Directory Number
- c) From the Unified CCX Administration menu bar, choose **Subsystems > Cisco Unified CM Telephony > Triggers**. Click **Add New** and specify values for the following mandatory fields:
- Directory Number
  - Language
  - Application Name
  - Device Name
  - Description
  - Call Control Group:  
The call control group types can be Inbound or Outbound for Unified CCX running with Unified Communications Manager.
- d) Choose **Subsystems > Cisco Unified CM Telephony > Data Resync** from the Cisco Unified CCX Administration menu bar to check and resynchronize the JTAPI data between Cisco Unified Communications Manager and Cisco Unified CCX.
- e) From the Unified CCX Administration menu bar, choose **Applications > Application Management**. The Application Management web page opens, displaying the details of existing applications.
- f) Click the **Add New** icon or button. The Add a New Application web page opens.
- g) From the Application Type drop-down menu, choose Cisco Script Application and click **Next**. The Cisco Script Application configuration web page opens.
- h) In the Script field, select the script “/TAPS.aef” from the drop-down list and enter the IP address of the Cisco Unified Communications Manager in the text box below the Script drop-down list.
- i) Check the check box against **Cisco\_Unified\_CM\_IP\_Address** field.
- j) Click the **Yes** radio button in the Enabled field.
- k) Click **Update**.
- l) Log in to Cisco Unified Communications Manager Serviceability Page and restart the TAPS Service.
-





## CHAPTER 5

# Update Unified CM IP Address Change in Unified CCX

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- [Update Unified CM IP Address Change in Unified CCX](#) , on page 39

## Update Unified CM IP Address Change in Unified CCX

The following section details the procedure to update any change in Unified CM IP Address in Unified CCX.



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**Note** Unified CCX supports changing one or more IP addresses of Unified CM servers but does not support changing the Unified CM cluster.

---

### Procedure

---

Run the following CLI commands on the Unified CCX publisher using the new IP address of Unified CM as input.

- **set uccx provider ip axl** - Sets the Unified CCX AXL provider IP address.
- **set uccx provider ip jtapi** - Sets the Unified CCX JTAPI provider IP address.
- **set uccx provider ip rmcm** - Sets the Unified CCX Resource Manager-Contact Manager provider IP address.

**Note** After you run the above CLI commands, restart the Unified CCX Engine service on the publisher node. After Unified CCX Engine service starts successfully, restart Cisco Tomcat.

---







## CHAPTER 6

# Cisco Applications Configuration

The Unified CCX system uses applications to interact with contacts and perform a wide variety of functions, such as prompting callers for information, transferring calls, and providing information to callers.

To configure Unified CCX applications, you must complete the following tasks:

- Provision telephony and media resources (see [Telephony and Media Provision, on page 57](#))
- Provision your Unified CCX subsystem, if required (see [Provision of Unified CCX, on page 89](#))
- Provision additional subsystems, if required (see [Provision of Additional Subsystems, on page 111](#))

The following sections describe how to configure applications and make them available to the Unified CCX system.

- [About Unified CCX Applications, on page 41](#)
- [Application Triggers, on page 46](#)
- [Script Management, on page 50](#)

## About Unified CCX Applications

The Unified CCX system uses applications to interact with contacts and perform a wide variety of functions.



**Note** Unified CCX licenses you purchase and install determine the applications available on your system.

Unified CCX provides the following application types:

- Script
- Busy
- Ring-No-Answer

## Configure Script Applications

The Unified CCX *script* applications are applications based on scripts created in the Unified CCX Editor. These applications come with every Unified CCX system and execute scripts created in the Unified CCX Editor.

Use the Unified CCX Editor to create scripts that direct the Unified CCX system to automatically answer calls and other types of contacts, prompt callers for information, accept caller input, queue calls, distribute calls to available agents, place outbound calls, respond to HTTP requests, and send email messages.



---

**Note** The Unified CCX system includes a number of sample scripts. For a description of these sample scripts, and for more information on creating scripts with the Unified CCX Editor, see the *Cisco Unified Contact Center Express Getting Started with Scripts*. In addition, a script repository is available at [https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_implementation\\_design\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_implementation_design_guides_list.html). This repository provides some examples of scripting techniques that can leverage Unified CCX abilities.

---

Cisco script applications can make use of many components, such as scripts, prerecorded prompts, grammars, languages, locales, and custom Java classes.



---

**Tip** Upload these components to the repository before you configure a Cisco script application that uses them.

---

Depending on your particular Unified CCX implementation, you may need to perform most or all of the following tasks to configure a Cisco script application:

- **Manage scripts**—Cisco script applications are based on scripts that you must upload to the repository and make available to the Unified CCX system.
- **Manage prompts**—Many applications make use of prerecorded prompts, stored as .wav files, which are played back to callers to provide information and elicit caller response. You must upload these .wav files to the repository and make them available to the Unified CCX system.
- **Install grammars**—The Unified CCX system uses specific grammars to recognize and respond to caller response to prompts. You must store these grammars in a directory to make them available to the Unified CCX system.
- **Install customized Unified CCX languages**—Language packs, such as American English, Canadian French, and so on, are installed with Unified CCX. You install language packs in a directory accessible by the Unified CCX system.
- **Install Java files**—In addition to the Java files automatically installed as part of the Unified CCX installation process, you can install your own custom classes and Java Archive (JAR) files to customize the performance of your Unified CCX system.
- **Add a Cisco script application**—Scripts created in the Unified CCX Editor are used as the basis for Cisco script applications.
- **Add an application trigger**—Triggers are specified signals that invoke application scripts in response to incoming contacts. After adding a new Cisco script application, you need to add a trigger so that this application can respond to telephone calls and HTTP requests.

## Add New Cisco Script Application

To add a new Cisco script application, complete the following steps:

## Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Application Management**.  
The Application Management web page opens, displaying the details of any existing applications.
- Step 2** Click **Add New** icon that is displayed in the tool bar in the upper left corner of the window or the **Add New** button that is displayed at the bottom of the window.  
The Add a New Application web page opens.
- Step 3** From the Application Type drop-down menu, choose **Cisco Script Application** and click **Next**.  
The Cisco Script Application configuration Web page opens.
- Step 4** Specify the following fields:

| Field                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                       | A name for the application. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ID                         | Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.<br><b>Note</b> The Historical Reporting feature uses this ID to identify this application.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum Number Of Sessions | The maximum amount of simultaneous sessions (instances) that the application can handle. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Script                     | <b>Note</b> This field is available only for Cisco Script Application type. This is a mandatory field.<br><br>Perform one of the following actions: <ul style="list-style-type: none"> <li>Choose a script from the drop-down list to run the application. If the script contains parameters, the parameters are displayed below the Script drop-down menu. Each parameter has a check box, which enables you to override the default value for that parameter. If you want to override the value, check the check box for that parameter.</li> </ul> <b>Note</b> All scripts under the default directory are listed in the drop-down list of the Script field in the Cisco Script Application Configuration web page. <ul style="list-style-type: none"> <li>Click <b>Edit</b>, enter the script name in the dialog box, and click <b>OK</b>. The User Prompt dialog box closes, and the name you entered appears in the Script field.</li> </ul> <b>Note</b> If you enter the script name as a file URL, enter the value with double backslashes (\\). For example, file://c:\\temp\\aa.aef |
| Description                | Use the Tab key to automatically populate this field.<br><b>Note</b> For the Busy and Ring-No-Answer application types, this field is only visible when you click <b>Show More</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Field          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enabled        | Click the required radio button to accept ( <b>Yes</b> = default) or reject ( <b>No</b> )<br><br><b>Note</b> For the Busy and Ring-No-Answer application types, this field is only visible when you click <b>Show More</b> .                                                                                                                                                                                                                                                                                                                             |
| Default Script | <b>Note</b> This field is available only for Cisco Script Application type.<br><br>The default script executes when an error occurs with the configured script application that causes it to abort.<br><br>Perform one of the following actions:<br><ul style="list-style-type: none"> <li>• Choose a script from the drop-down list to run the application. If a Default Script is not defined, the internal system default is executed.</li> <li>• Click <b>Edit</b>, specify a script in the dialog box that appears, and click <b>OK</b>.</li> </ul> |

**Step 5** Click **Add**.

The Cisco Script Application page refreshes, the **Add New Trigger** hyperlink appears in the left navigation bar, and the following message is displayed in the status bar on top:

The operation has been executed successfully.

Click **Back to Application List** icon or button to view the list of existing applications.

**Step 6** Add a trigger for the application.

## Configure Busy Application

The Cisco Busy application comes with each Unified CCX system. This application returns a busy signal when a call reaches a Computer Telephony Interface (CTI) route point and the extension is busy.

**Before you begin**

To configure the Busy application, you will need to perform the following tasks:

- Add the Busy application.
- Add a Unified CM Telephony trigger to the Busy application. The Busy application is activated when it is triggered by a Unified CM Telephony trigger. The Busy application does not support HTTP triggers.

To configure the Unified CCX server with the Busy application, complete the following steps.

**Procedure****Step 1** From the Unified CCX Administration menu bar, choose **Applications > Application Management**.

The Application Management web page opens, displaying the details of existing applications, if any.

**Step 2** Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window.

The Add a New Application web page opens.

**Step 3** From the Application Type drop-down menu, choose **Busy**, and then click **Next**.

The Busy Application Configuration web page appears.

**Step 4** Specify the following fields:

| Field                                                                        | Description                                                                                                                                                                            |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                                                                         | A name for the application. This is a mandatory field.                                                                                                                                 |
| ID                                                                           | Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.<br><br><b>Note</b> The Historical Reporting feature uses this ID to identify this application. |
| Maximum Number Of Sessions                                                   | The maximum amount of simultaneous sessions (instances) that the application can handle.                                                                                               |
| The following fields are displayed only on click of <b>Show More</b> button. |                                                                                                                                                                                        |
| Description                                                                  | Use the Tab key to automatically populate this field.                                                                                                                                  |
| Enabled                                                                      | Click the required radio button to accept - <b>Yes</b> (the default).                                                                                                                  |

**Step 5** Click **Add**.

The Busy web page refreshes, the **Add New Trigger** hyperlink appears in the left navigation bar, and the following message is displayed in the status bar on top:

The operation has been executed successfully

**Step 6** Add a trigger for the application.

## Configure Ring-No-Answer Application

The Cisco Ring-No-Answer application comes with each Unified CCX system. This application returns a ring tone signal when a call reaches a CTI route point.

### Before you begin

To configure the Ring-No-Answer application, you will need to perform the following tasks:

- Add the Ring-No-Answer application.
- Add a Unified CM Telephony trigger to the Ring-No-Answer application. The Ring-No-Answer application is activated when it is triggered by a Unified CM Telephony trigger.

To configure the Unified CCX server with the Ring-No-Answer application, complete the following steps:

## Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Application Management**.  
The Application Management web page opens, displaying the details of existing applications, if any.
- Step 2** Click **Add New** icon that is displayed in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window.
- Step 3** From the Application Type drop-down menu, choose **Ring-No-Answer**, and then click **Next**.  
The Ring-No-Answer web page opens.
- Step 4** Specify the following fields.

| Field                                                                               | Description                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                                                                                | A name for the application. This is a mandatory field.                                                                                                                             |
| ID                                                                                  | Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.<br><b>Note</b> The Historical Reporting feature uses this ID to identify this application. |
| Maximum Number Of Sessions                                                          | The maximum amount of simultaneous sessions (instances) that the application can handle. This is a mandatory field.                                                                |
| The following fields are displayed only when you click the <b>Show More</b> button: |                                                                                                                                                                                    |
| Description                                                                         | Use the Tab key to automatically populate this field.                                                                                                                              |
| Enabled                                                                             | Click the required radio button to accept - <b>Yes</b> (the default).                                                                                                              |

- Step 5** Click **Add**.  
The Ring-No-Answer web page refreshes, the **Add New Trigger** hyperlink appears in the left navigation bar, and the following message is displayed in the status bar on top:  
`The operation has been executed successfully`
- Step 6** Add a trigger for the application.

## Application Triggers

After adding a new Cisco application, you need to add one or more *triggers* so that the application can respond to Unified CM Telephony calls and HTTP requests.

Triggers are specified signals that invoke application scripts in response to incoming contacts. The Unified CCX system uses Unified CM Telephony triggers to trigger responses to telephone calls and HTTP triggers to respond to HTTP requests.

You can use either of the below two methods to add a trigger to an application:

- Add the trigger from the Cisco Application web page or add the trigger from the Unified CM Telephony.

- HTTP Triggers web pages available from the Subsystem menu.

## Unified CM Telephony Trigger

You must add Unified CM Telephony triggers to invoke Cisco applications in response to incoming contacts.

A Unified CM Telephony trigger responds to calls that arrive on a specific route point by selecting telephony and media resources to serve the call and invoking an application script to handle the call.

### Add Unified CM Telephony Triggers from Application Web Page

To add a Unified CM Telephony trigger directly from the Cisco Application Configuration web page, complete the following steps.

#### Procedure

---

- Step 1** From the configuration web page for the application you want to add a trigger for, click **Add New Trigger**. The Add a New Trigger window opens.
- Step 2** From the Trigger Type drop-down menu, choose **Unified CM Telephony** and click **Next**. The Unified CM Telephony Trigger Configuration window opens.
- Step 3** Follow the procedure described in **Add Unified CM Telephony Trigger**.
- 

### Add Unified CM Telephony Triggers from Unified CCX

To add a Unified CM Telephony trigger to an application from the Unified CM Telephony subsystem, complete the following steps.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Unified CM Telephony > Triggers**. The Unified CM Telephony Trigger Configuration summary web page opens.
- Step 2** Click the **Add New** icon that is displayed in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window.
- Step 3** The Cisco Unified CM Telephony Trigger Configuration web page opens. Follow the procedure described in [Add Unified CM Telephony Trigger, on page 70](#) (Steps 3 and 4) for detailed instructions on adding and configuring a Unified CM Telephony trigger.

**Note** For triggers created in Unified CCX, Unified CM will always show the IPv4 Address of the CTI Route point, as the IP address is of the primary node or the first node in the Unified CCX cluster.

---

## HTTP Trigger Provision

A Cisco application can be used to handle HTTP requests when the Unified CCX system is provisioned with an HTTP trigger.



**Note** HTTP/HTTPS triggers are available if your system has a license installed for one of the following Cisco product packages: Unified IP IVR or Unified CCX Premium.

An HTTP trigger is the relative URL a user enters into the client browser to start the application. You can upload either eXtensible Style Language Transformation (XSLT) templates or Java Server Pages (JSP) templates to serve as your HTTP trigger.

The following path is an example of an HTTP-triggered request (using the HTTP trigger name “/hello”):

```
http://www.appserver.acme.com:9080/hello
```

In this example, the URL starts the application with the HTTP trigger “/hello” on a web server running on port 9080 with the host name www.appserver.acme.com.

You can add the HTTP trigger from the Cisco Script Application web page or add the trigger from the HTTP subsystem.

### Add HTTP Trigger from Application Web Page

To add an HTTP trigger directly from a Cisco Application Configuration web page, complete the following steps.

#### Procedure

- Step 1** From the configuration web page for the application you want to add a trigger for, click **Add New Trigger** hyperlink.  
The Add a New Trigger window opens.
- Step 2** From the Trigger Type drop-down menu, select **HTTP** and click **Next**.  
The HTTP Trigger Configuration window opens.
- Step 3** Specify the following fields.

| Field | Description                                |
|-------|--------------------------------------------|
| URL   | The relative URL<br>For example:<br>/hello |



| Field                      | Description                                                                                                                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Language                   | Perform one of the following actions: <ul style="list-style-type: none"> <li>Choose a default language from the drop-down list.</li> <li>Click <b>Edit</b>, specify a default language in the dialog box that appears, and click <b>OK</b>.</li> </ul> |
| Maximum Number Of Sessions | The maximum amount of simultaneous sessions that can be served by the HTTP subsystem for this trigger.                                                                                                                                                 |
| Idle Timeout (in ms)       | Maximum amount of time (in milliseconds) that the system will wait to invoke the application before rejecting a contact.                                                                                                                               |
| Enabled                    | Click the required radio button to accept - <b>Yes</b> (the default). <p><b>Note</b> If you disable the trigger, the user receives an error message when browsing to the defined trigger URL.</p>                                                      |

**Step 4** Click **Add**.

The Cisco Application Configuration web page appears, and the URL of the HTTP trigger appears on the navigation bar.

**Step 5** Test the trigger by entering the URL you just configured in the address bar of your browser.

For example,

/hello

The browser should display “hello”.

## Add HTTP Trigger from HTTP Subsystem

To configure a HTTP trigger from the HTTP subsystem, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > HTTP**.

The HTTP Trigger Configuration web page opens.

**Step 2** Click the **Add New** icon that is displayed in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window.

The HTTP Trigger Configuration window opens.

**Step 3** Specify the following mandatory fields.

| Field                      | Description                                                                                                                                                                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| URL                        | The relative URL.<br>For example:<br><code>/hello</code>                                                                                                                                                                                                   |
| Language                   | Perform one of the following actions: <ul style="list-style-type: none"> <li>• Choose a default language from the drop-down list.</li> <li>• Click <b>Edit</b>, specify a default language in the dialog box that appears, and click <b>OK</b>.</li> </ul> |
| Application Name           | Choose the name of the application from the drop-down list.                                                                                                                                                                                                |
| Maximum Number Of Sessions | The maximum amount of simultaneous sessions that can be served by the HTTP subsystem for this trigger.                                                                                                                                                     |
| Idle Timeout (in ms)       | Maximum amount of time (in milliseconds) that the system will wait to invoke the application before rejecting a contact.                                                                                                                                   |
| Enabled                    | Click the required radio button to accept - <b>Yes</b> (the default)<br><br><b>Note</b> If you disable the trigger, the user receives an error message when browsing to the defined trigger URL.                                                           |

**Step 4** Click **Add**.

The Cisco Application Configuration web page appears, and the URL of the HTTP trigger appears on the navigation bar.

**Step 5** To test the trigger, enter the URL you just configured in the address bar of your browser.

For example,

`/hello`

The browser should display “hello”.

## Script Management

Scripts are created with the Unified CCX Editor, and can perform a wide variety of functions. For example, scripts can prompt callers for extension numbers to transfer calls, place callers in a queue and route calls to available agents, and place outbound calls.

The Script Management option of the Applications menu of the Unified CCX Administration web interface contains options for managing and refreshing Unified CCX scripts that are stored in the repository.



**Note** Your Unified CCX system includes sample scripts stored as .aef files.



**Caution** If a large number of VRU scripts are configured for your system, the **Upload a New Script** and **Refresh Scripts** operations can take a long time to complete. These tasks can also result in high CPU utilization.

## Upload New Scripts

To make a script available for use as a Unified CCX application, you must first upload the script to the repository. In Unified CCX Release 4.5 and later, uploaded scripts are stored in the Repository Datastore (RDS) database, along with prompts, grammars, and documents files. Prior to Release 4.5, the RDS database only contained the prompts, grammars, and documents files. The scripts can also be grouped into folders and subfolders. When user scripts are uploaded into repository, they get synchronized to local disk and are accessed from there.

To upload a script to the repository, complete the following steps:

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.

The Script Management page opens.

**Note** The Script Management page allows you to only work with user scripts; it does not have language-based directories.

The following table describes the available columns on the Script Management web page.

| Field         | Description                                                                                                                                                                                                    |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Folder Path   | The level of the directory that is currently selected in the folder drop-down list.                                                                                                                            |
| Name          | The name of the script.<br><b>Note</b> Click the icon in front of the script name to download the script file.                                                                                                 |
| Size          | The size of the script file prefixed with <b>KB</b> . The file size is converted from bytes to KB.<br><b>Note</b> This column is usually blank on the root page as the items on this page are usually folders. |
| Date Modified | The date and time when the document was last uploaded or changed along with time zone.                                                                                                                         |
| Modified by   | The user ID of the person who performed these modifications.                                                                                                                                                   |
| Delete        | To delete the corresponding folder.<br><b>Caution</b> When you delete a folder, you permanently remove it from the repository and make it unavailable to the Unified CCX system.                               |
| Rename        | To rename the required subfolder within the <b>default</b> folder.                                                                                                                                             |

| Field   | Description                          |
|---------|--------------------------------------|
| Refresh | To refresh the corresponding script. |

**Step 2** Click **Upload New Scripts** icon that is displayed in the tool bar in the upper, left corner of the window or the **Upload New Scripts** button that is displayed at the bottom of the window.

The Upload Script dialog box opens.

**Step 3** To locate the script, click **Browse** button next to the File Name field, navigate to the directory in which the scripts are located, select a script, and click **Open**.

The script path for the profile appears in the File Name field.

**Step 4** Click **Upload** to upload the script to the repository.

A window opens, informing you that the script was successfully uploaded.

You are now ready to manage any existing scripts shown in the Script Management page (if necessary) or add prompts that may be useful to your applications.

## Download Script File

To view or download a script file, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.

The Script Management page opens to display the contents of the **default** folder.

**Step 2** Click the **Download Script** icon that appears before the Name of the script file you want to view or download.

The File Download dialog box opens.

**Step 3** Perform one of the following tasks:

a) To view the script file, click **Open**.

The script file opens in the Unified CCX Editor.

b) To download the script file, click **Save**, and then follow the prompts to choose a directory and file name for the script file.

The file is saved to the specified directory.

## Refresh Scripts



---

**Caution** If a large number of VRU scripts are configured for your system, the **Upload a New Script** and **Refresh Scripts** operations can take a long time to complete. These tasks can also result in high CPU utilization.

---

When you make changes to a script, you must refresh the script to direct all the applications and subsystems that use this script to reload the new version. There are two script refresh options:

- [Refresh Scripts Individually, on page 53](#)
- [Refresh Bulk Scripts, on page 53](#)

### Refresh Scripts Individually

To refresh an individual script on the Unified CCX server from the repository (RDS), complete the following steps.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.  
The Script Management page opens to display the contents of the **default** folder.
- Step 2** In the row that contains the script, click **Refresh** icon.  
The script information refreshes and the Script Management page reappears.
- 

### Refresh Bulk Scripts



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**Note** Support for high availability and remote servers is available only in multiple-server deployments.

---

Bulk scripts refers to multiple .aef script files within one .zip file.



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**Note** This option is available only when you upload .zip files. You will see the option to refresh scripts after the selected file is uploaded successfully.

---

To refresh all scripts (within a zip file) with one command, complete the following steps.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.  
The Script Management page opens to display the contents of the **default** folder.

- Step 2** Click the **Upload New Scripts** icon or button.  
The Upload Script dialog box opens.
- Step 3** To locate the script, click the **Browse** button next to the File Name field, navigate to the directory in which the scripts are located, select a file, and click **Open**. The script path for the profile appears in the File Name field.
- Tip** You can only upload .zip files containing .aef files. The total size of the.zip file cannot exceed 20 MB.
- Step 4** Click **Upload** to upload the script to the repository.  
A window opens, informing you that the script upload succeeded.
- Step 5** Click **Refresh** icon in the Script Management page.  
The Script Management web page opens, giving you the option of refreshing the script and the applications that reference it, or just refreshing the script.
- Step 6** Specify one of the following options:
- If you want all applications and subsystems that reference the script (in the repository) to use the new version, click **Yes**.
  - If you only want to refresh the scripts, click **No**.
  - If you want to cancel the operation, click **Cancel**.
- The script information refreshes and the Script Management page reappears to display the newly loaded .zip file.
- 

## Rename Script or Folder

To rename a script or folder, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.  
The Script Management page opens to display the contents of the **default** folder.
- Step 2** Click **Rename** icon for the folder or script that you want to rename. A dialog box opens displaying the name of the selected folder or script.
- Step 3** Enter a new name for this folder or script in the text box.
- Step 4** Click **Rename** button.  
The dialog box refreshes to state that the folder was successfully renamed.
- Step 5** Click **Return to Script Management** button.

The dialog box closes and the **default** folder's updated Script Management page displays the new script name.

---

## Delete Script or Folder

When you delete a script or a folder, you remove it permanently from the repository.

To delete a script or folder, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Script Management**.  
The Script Management page opens to display the contents of the **default** folder.
- Step 2** To delete a folder, click **Delete** icon for the folder or script that you want to delete.  
A dialog box opens to confirm your action on the selected script or folder.
- Step 3** Click **OK**.  
The dialog box closes and the **default** folder's updated Script Management page refreshes to display the updated list of folders and scripts.
- 

## Sample Scripts

Your Unified CCX system includes sample scripts stored as .aef files. These scripts have been built using Unified CCX Editor steps, including prerecorded prompts. You can use these scripts to create applications without performing any script development, or you can use these scripts as models for your own customized scripts.



- Note** The included scripts are bundled with the Unified CCX system only as samples; they are not supported by Cisco. For more information on these sample scripts, see the *Cisco Unified Contact Center Express Getting Started with Scripts*.
-







## CHAPTER 7

# Telephony and Media Provision

Resource provisioning information for the Unified CCX telephony and media subsystems are provided in this chapter.

- [Unified CCX Telephony and Media, on page 57](#)
- [Provision Unified CM Telephony Subsystem, on page 59](#)
- [Additional Unified CM Telephony Information, on page 74](#)
- [Cisco Media Subsystem, on page 75](#)
- [ASR and TTS in Unified CCX, on page 77](#)

## Unified CCX Telephony and Media

The Unified CCX system uses a telephony resource called Computer Telephony Interface (CTI) ports to accept incoming calls and to place outbound calls. The Unified CCX system uses the following media resources to provide interactive services for calls:

- **Unified CM Telephony**—The Unified CCX Engine uses the Unified CM Telephony subsystem to send and receive calls from the Unified CM by interfacing with the CTI Manager through the Unified CM Telephony client.
- **Cisco Media Termination (CMT)**—The CMT channels provide media terminations in the Unified CCX for Unified CM Telephony Call Contacts. These channels enable the Unified CCX to play media to the connected party. DTMF digits are received out of band by the Unified CM Telephony subsystem.
- **MRCP Automated Speech Recognition (MRCP ASR)**—The ASR media resource allows callers to use speech to navigate menus and to provide other information to Unified CCX applications.
- **MRCP Text-To-Speech (MRCP TTS)**—The TTS media resource enables Unified CCX applications to play back documents to callers as speech.



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**Note** Media resources are licensed and sold as Unified IP IVR ports. Although you can provision more channels than you are licensed for, licensing is enforced at run-time. If more channels are provisioned than licensed, the system will not accept the extra calls, because doing so would violate your licensing agreements.

---

The Unified CCX system uses *groups* to share telephony and media resources among different applications:

- *Call control groups* allow you to control how the system uses CTI ports. For example, you can reserve more ports for higher-priority applications or provide access to fewer ports for applications with less traffic.
- *Media resource groups* allow you to share media resources among different applications. For example, you can share ASR media resource groups with applications that collect caller information and applications that transfer calls to specific extensions.

The Unified CCX system also uses *triggers*, which are specified signals that invoke application scripts in response to incoming contacts.

## Media Termination Groups

Media termination groups are associated with CTI port groups.




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**Note** For Unified CM deployment, you can create and use additional CTI port groups as required.

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If a CTI port group is selected to support media termination and if the number of channels are identical to both groups, the CTI port group is automatically created in the background. This auto creation feature eliminates the manual CTI port group creation process.

If you choose to override media termination, the call control channel chooses the media termination automatically. If you want to select a new dialog group, you can have more than one media termination option. The options are used in the order that is displayed in the drop-down list.

## Channels Required to Process Calls

Unified CCX needs two types of channels to process calls:

- A *call control channel*, which is provisioned through the Unified CM Telephony subsystem and corresponds to CTI port resources in Unified CM.
- A *media channel*, which is provisioned through either the CMT subsystem or the MRCP subsystem and corresponds to the kernel resources for handling the media voice path with the caller.




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**Note** MRCP channels also correspond to additional resources on the MRCP server for performing speech recognition.

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Unified CCX needs access to a channel of each type to successfully process a call. However, the capabilities of the two channel types are not identical.

For example, consider a Unified CCX system provisioned with a single Unified CM Telephony call control channel (that is, a CTI port) and a single CMT channel. The system can handle one call at a time; when that call terminates, the system must reinitialize the channel resources before it can accept another call.

However, the time each channel takes to reinitialize is not equal—CMT channels take more time to reinitialize than CTI ports. For example:

- The Unified CM Telephony call control channel may take approximately 1 millisecond to reinitialize.

- The CMT channel may take approximately 200 milliseconds to reinitialize.

This example implies that the system will not be able to accept a new incoming call for 200 milliseconds after the first call terminates; although the Unified CM Telephony channel is available after one millisecond, the CMT channel is not and Unified CCX needs both channels to process a call.

Such a delay can become an issue when a Unified CCX system is experiencing a high load condition or needs to handle a burst of incoming calls. Consequently, CMT channels require a higher channel count provisioning.



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**Tip** To provision Unified CCX systems to handle burst calls equally among all required resources, you must configure approximately 10 percentage more CMT channels than CTI ports, and approximately 10 percentage more MRCP channels than ASR licenses.

---

## Provision Telephony and Media Resources

To provision telephony and media resources, complete the following tasks:

### Procedure

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- Step 1** Provision the Unified CM Telephony subsystem.  
Unified CM Telephony subsystem controls telephony resources for Unified CCX system.
- Step 2** Provision the Cisco Media subsystem.  
Cisco Media subsystem controls CMT media resources for Unified CCX system.
- Step 3** Provision the MRCP ASR subsystem.  
MRCP ASR subsystem controls ASR media resources for Unified CCX system.
- Step 4** Provision the MRCP TTS subsystem.  
MRCP TTS subsystem controls TTS media resources for Unified CCX system.
- 

## Provision Unified CM Telephony Subsystem

The Unified CM Telephony subsystem is the subsystem of the Unified CCX Engine that sends and receives call-related messages from the Unified CM CTI Manager through the Unified CM Telephony client. To enable your Unified CCX server to handle Cisco Unified Communications requests, you must provision the Unified CM Telephony subsystem. The Unified CM Telephony subsystem is available in all the Unified CCX license packages.



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**Note** In previous versions of Unified CCX, it was necessary to configure Unified CM Telephony information using Unified CM. In Unified CCX Release 4.0 and later, Unified CM Telephony configuration tasks are performed directly through Unified CCX Administration web pages.

---

To provision the Unified CM Telephony subsystem, complete the following tasks:

#### Procedure

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- Step 1** Configure a Unified CM Telephony Provider, if not already configured. Specify the server on which Unified CM CTI Manager is running, and provide a Unified CM user ID and password.
- Step 2** Provision Unified CM Telephony call control groups.  
Unified CM Telephony call control groups pool together a series of CTI ports, which the system then uses to serve calls as they arrive at the Unified CCX server.
- Step 3** Provision a Unified CM Telephony trigger.  
Unified CM Telephony triggers invoke application scripts in response to incoming contacts.
- Step 4** Resynchronize Unified CM Telephony versions.
- 

## Resynchronize Cisco JTAPI Client

During the resynchronizing process, an additional check ensures that the Unified CM Telephony Client (also known as the Cisco JTAPI Client) are the same between the clients installed on the Unified CCX node and the Cisco Unified CM. If the Unified CCX detects a mismatch, the system downloads and installs the required version of Cisco JTAPI Client.

To resynchronize and view the status of Cisco JTAPI client, complete the following steps.

#### Procedure

---

- Step 1** Choose **Subsystems > Cisco Unified CM Telephony > Cisco JTAPI Resync** from the Unified CCX Administration menu bar.
- Step 2** The Cisco JTAPI Resync web page opens, displaying the status of Cisco JTAPI Client resynchronization.  
At this point, if there is an incompatible version, it automatically downloads the new client.
- 

## Resynchronize Unified CM Telephony Data

This resynchronizing process ensures that the Unified CM Telephony user, the call control groups, and the triggers match the data of Unified CM being used.

To resynchronize the Unified CM Telephony data, complete the following steps.

## Procedure

From the Unified CCX Administration menu bar, choose **Subsystems > Cisco Unified CM Telephony > Data Synchronization**.

The Cisco Unified CM Telephony Data Synchronization web page opens after resynchronization, displaying the Data Resync status of Unified CM Telephony Port Groups and Unified CM Telephony Triggers.

## Configure Unified CM Telephony Provider

The Unified CM Telephony Provider web page is a read-only page that displays the latest configured information.



### Caution

Some setups may prevent the Unified CM directory administrator from creating new Unified CM Telephony providers in a multiserver configuration. If this setup applies to you, be sure to delete preexisting Unified CM Telephony providers before creating new Unified CM Telephony providers. For example, if the Unified CM Telephony provider prefix is *cmtelephony* and you have a two-server configuration (*node\_id1* and *node\_id2*), you must delete both *cmtelephony\_<node\_id1>* and *cmtelephony\_<node\_id2>*. If you do not verify and delete preexisting Unified CM Telephony providers, the Unified CM Telephony subsystem issues an error and will not allow you to create Unified CM Telephony providers from the Unified CM Telephony Provider Configuration web page.

## Procedure

### Step 1

Choose **Subsystems > Cisco Unified CM Telephony > Provider** from the Unified CCX Administration menu bar.

The Cisco Unified CM Telephony Provider web page opens.

The following table describes the read-only fields displayed in the Unified CM Telephony Provider Configuration web page.

| Field Heading                         | Description                                                                                                                                                                                                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Unified CM Telephony Provider | IP address of the Server, running Unified CM CTI Manager in the cluster. This is normally the first CTI Manager or Cisco Unified CM Telephony Provider selected by the Unified CCX user for Unified CM Telephony subsystem using <b>System &gt; Cisco Unified CM Configuration</b> web page. |

| Field Heading                           | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Secondary Unified CM Telephony Provider | IP address of the second Server, running Unified CM CTI Manager in the cluster. This is normally the second CTI Manager or Cisco Unified CM Telephony Provider selected by the Unified CCX user for Unified CM Telephony subsystem using <b>System &gt; Cisco Unified CM Configuration</b> web page.<br><br><b>Note</b> If you have selected only one Unified CM Telephony provider, this field will be blank. |
| User Prefix                             | User prefix for the Unified CM user IDs created in Unified CM.                                                                                                                                                                                                                                                                                                                                                 |

- Step 2** To modify the Unified CM Telephony subsystem, click **Modify Cisco Unified CM Telephony Provider Information** icon that displays in the tool bar in the upper left corner of the window. The Cisco Unified CM Configuration web page opens.

## Add New Call Control Group

The Unified CCX system uses Unified CM Telephony call control groups to pool together a series of CTI ports, which the system uses to serve calls as they arrive or depart from the Unified CCX server. You can create multiple Unified CM Telephony call control groups to share and limit the resources to be used by specific applications.

To configure a new Unified CM Telephony call control group, complete the following steps.

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Unified CM Telephony > Call Control Group**.
- The Cisco Unified CM Telephony Call Control Group Configuration web page opens, which displays the existing Unified CM Telephony Call Control Group information, if any.
- Step 2** Click **Add New** icon that is displayed in the tool bar in the upper left corner of the window or the **Add New** button that is displayed at the bottom of the window to create a new CTI port. The Cisco Unified CM Telephony Call Control Group Configuration web page opens.
- Note** You can create only one call control group of the Outbound type, in which the number of CTI ports must be always equal to or greater than the licensed Outbound IVR ports.
- Step 3** Use this web page to specify the following information:

| Page Area                     | Field                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group Information             | Group ID                  | <p>Corresponds to the trunk group number reported to Cisco Unified Intelligent Contact Management Enterprise (Unified ICME) when the Unified CCX server is part of the Unified ICME solution. The value for this field is automatically generated.</p> <p><b>Note</b> If a Stop icon displays beside the Group ID (on the Cisco Unified CM Call Control Group Configuration list page), it indicates that the data is invalid or out of sync with Unified CM data; if a Head icon displays, the group is valid.</p>                                                                                                                                                                                                                                                  |
|                               | Description               | Description of the Group ID. Press the <b>Tab</b> key to automatically populate the Description field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Group Information (continued) | Number of CTI Ports       | <p>Number of CTI Ports assigned to the call control group. This is a mandatory field.</p> <p>If you have a Premium license with an Outbound license, you can create only one Outbound call control group with a minimum licensed number of IVR ports or more. The number of CTI ports for an outbound type of call control group can be modified but not below the licensed ports for Outbound IVR. This rule does not apply to inbound type call control groups. You can continue to create more inbound type call control groups.</p> <p><b>Note</b> If this field is set to <math>\langle n \rangle</math>, the system creates <math>\langle n \rangle</math> ports for each Unified CCX Engine node (node in which Unified CCX Engine component is enabled).</p> |
|                               | Media Termination Support | <p>Enables the auto-creation of media termination groups. This is a mandatory field.</p> <p>Yes = Provides automatic media termination if the CTI port group is successful.</p> <p>No = Media termination port group is not created (default).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                               | Group Type                | <p>Select the group type for the call control group using this radio button. The choices are Inbound and Outbound. This is a mandatory field and Inbound radio button is enabled by default. You cannot change the group type from Outbound to Inbound and vice versa. The Outbound type call control group will be displayed only if you have uploaded the Outbound license on top of the premium license in your Unified CCX.</p> <p><b>Note</b> The existing call control groups will have this value as inbound after an upgrade from Unified CCX versions prior to 9.0(1).</p>                                                                                                                                                                                  |

| Page Area                                                                                                 | Field              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directory Number Information                                                                              | Device Name Prefix | <p>The Device Name Prefix (DNP) used in the name that will be given all of the CTI Ports in this group. This is a mandatory field.</p> <p>The CTI ports for this port group is restricted to a maximum of 5 characters and has the following format:</p> <pre>&lt;deviceprefix&gt;_&lt;directoryno&gt;</pre> <p>For example, if the Device Name Prefix is CTP and the starting Directory Number is 7000, the CTI Port that is created in Unified CM can have the device name CTP_7000.</p> |
| <p>Select Server for Telephony Port Group Configuration (displayed only in a HA over WAN deployment).</p> |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Page Area | Field         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | Select Server | <p>This field is displayed only in a HA over WAN deployment and it displays the different Unified CCX nodes that are available in a HA over WAN deployment in a drop-down list.</p> <p>In a HA over WAN setup, you need to configure directory information along with Unified CM-specific information for the ports in each node. Once you select a node, all configuration details displayed below this field will be specific to the selected node only. So, if you update any node-specific parameters (below the <b>Select Server</b> field), it will be applicable only to the ports specific to the selected node. But, if you update any configuration data above the <b>Select Server</b> field, it will be applicable for the ports in both the nodes except for the <b>Number of CTI Ports</b> field.</p> <p><b>Note</b> You need to ensure that the values in <b>Number of CTI ports</b> field for both the nodes are the same. If you modify this field, the number of ports is modified for the selected node only as the device pool selection for both nodes could be different in a HA over WAN deployment. If you click <b>Add</b> before updating this value for either of the node, the port group for that node will be marked with a red cross in the main Cisco Unified CM Telephony Call Control Group Configuration web page to signify the fact that the number of ports between the two nodes is different and the other node should also be updated. In such a scenario, click the hyperlink for the node that is tagged in red; and from the Cisco Unified CM Telephony Call Control Group Configuration page for the selected node, update the value in the <b>Number of CTI Ports</b> field and click <b>Update</b> to ensure the number of CTI ports for both the nodes are the same.</p> <p>After you configure the data for the selected node and click <b>Add</b> or <b>Update</b>, the updated configuration information will be saved. For detailed information on behavior in HA over WAN scenario, refer to the <i>Cisco Unified Contact Center Express Design Guide</i> <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_implementation_design_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_implementation_design_guides_list.html</a>. In case of LAN deployment, this field is not displayed, as the same configuration data will be applicable for both the nodes in the cluster.</p> |

| Page Area                    | Field                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directory Number Information | Starting Directory Number | <p>A unique phone number. The Starting Directory Number contains numerals, and can have an asterisk (*) or a hash (#), or both as a prefix or a suffix. To support E.164 compliance, Unified CCX allows you to add the plus sign (+) before the directory number. The specified number of ports will be created starting from the value specified in this field. The Directory Number that you enter can appear in more than one partition. This is a mandatory field.</p> <p><b>Note</b> When a pattern is used as a Directory Number, the phone display and the caller ID display on the dialed phone will contain characters other than digits. To avoid this, provide a value for Display (Internal Caller ID), Line Text Label, and External Phone Number Mask.</p> |
|                              | Device Pool               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Page Area | Field                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                         | <p>Set of common characteristics for devices, such as region, date/time group, softkey template, and MLPP information to which you want to assign this phone.</p> <p><b>Note</b> The support for having multiple device pools associated with call control group(s) has been withdrawn in Unified CCX. If you have multiple device pools associated with call control group(s) in an older version of Unified CCX, it is recommended to manually assign a single device pool to each call control group. For more information, see <a href="#">Synchronize Unified CM Telephony Data, on page 267</a>.</p> <p>In a HA over WAN setup, you need to configure directory information along with Unified CM-specific information for the ports in each node. Once you select a node, all configuration details displayed below this field will be specific to the selected node only. So, if you update any node-specific parameters (below the <b>Select Server</b> field), it will be applicable only to the ports specific to the selected node. But, if you update any configuration data above the <b>Select Server</b> field, it will be applicable for the ports in both the nodes except for the <b>Number of CTI Ports</b> field.</p> <p><b>Note</b> You need to ensure that the values in <b>Number of CTI ports</b> field for both the nodes are the same. If you modify this field, the number of ports is modified for the selected node only as the device pool selection for both nodes could be different in a HA over WAN deployment. If you click <b>Add</b> before updating this value for either of the node, the port group for that node will be marked with a red cross in the main Cisco Unified CM Telephony Call Control Group Configuration web page to signify the fact that the number of ports between the two nodes is different and the other node should also be updated. In such a scenario, click the hyperlink for the node that is tagged in red; and from the Cisco Unified CM Telephony Call Control Group Configuration page for the selected node, update the value in the <b>Number of CTI Ports</b> field and click <b>Update</b> to ensure the number of CTI ports for both the nodes are the same.</p> |
|           | DN Calling Search Space | <p>A collection of partitions that are searched to determine how a dialed number should be routed. The calling search space for the device and the calling search space for the directory number get used together. The directory number calling search space takes precedence over the device calling search space.</p> <p>For more information, see the .</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|           | Location                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Page Area                                                                                    | Field                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                              |                                  | The Cisco Unified Communications phone location setting specifies the total bandwidth that is available for calls to and from this location. A location setting of <b>HUB_NONE</b> means that the location feature does not keep track of the bandwidth that this Cisco Unified Communications phone consumes.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Advanced Directory Number Information</b> (only available if you click <b>Show More</b> ) |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Directory Number<br>(continued)                                                              | Alerting Name<br>ASCII           | This information is automatically populated based on the configuration in the Unified CM setup and displays the ASCII name filed used in one of the following situations: <ul style="list-style-type: none"> <li>• If the device is not capable of handling the Unicode strings</li> <li>• If the locals on endpoint devices do not match</li> <li>• If the Unicode string is not specified</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                              | Redirect Calling<br>Search Space | A collection of partitions that are searched to determine how a redirected call is routed.<br>Redirect Calling Search Space options:<br><b>Note</b> <b>DN Calling Search Space</b> is deprecated. Use <b>Calling Party</b> or <b>Redirect Party</b> instead. <ul style="list-style-type: none"> <li>• <b>DN Calling Search Space</b>—This option enables the CTI Port to use its directory number CSS when performing a redirect / consult transfer.</li> <li>• <b>Calling Party</b>—This option enables the CTI Port to use the calling party's CSS when performing a redirect / consult transfer.</li> <li>• <b>Redirect Party</b>—This option enables the CTI Port to use the CTI Route Point's CSS when performing a redirect / consult transfer.</li> </ul> |
|                                                                                              | Media Resource<br>Group List     | A prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from the available media resources according to the priority order that is defined in a Media Resource Group List.<br><br>If you choose <none>, Unified CM uses the Media Resource Group that is defined in the device pool.                                                                                                                                                                                                                                                                                                                                                                                                |

| Page Area                        | Field                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directory Number Setting         | Voice Mail Profile         | A list of profiles defined in the Voice Mail Profile Configuration. The first option is <None>, which is the current default Voice Mail Profile that is configured in the Voice Mail Profile Configuration.                                                                                                                                                                                                                                      |
|                                  | Presence Group             | See the <i>Cisco Unified Communications Manager Administration Guide</i> for detailed information on how to configure presence groups.                                                                                                                                                                                                                                                                                                           |
|                                  | Require DTMF Reception     | A Unified CM radio button to determine if DTMF reception is required. Yes is selected by default. If you select No, a warning message is displayed.                                                                                                                                                                                                                                                                                              |
|                                  | AAR Group                  | Automated Alternate Routing (AAR) group for this device. The AAR group provides the prefix digits that are used to route calls that are otherwise blocked due to insufficient bandwidth. An AAR group setting of <None> specifies that no rerouting of blocked calls will be attempted.                                                                                                                                                          |
|                                  | User Hold Audio Source     | Audio source heard by the caller when the Unified CCX Script places the caller on Hold by using the Hold Step (when you press the hold key).                                                                                                                                                                                                                                                                                                     |
|                                  | Network Hold Audio Source  | Audio source heard by the caller when Unified CCX performs a Consult Transfer (when Unified CCX calls an agent). Use this entry for the .wav file (for example, .wav file playing a ringback tone) to be played to the caller during this Consult Transfer.                                                                                                                                                                                      |
| Call Forward and Pickup Settings | Call Pickup Group          | The number that can be dialed to answer calls to this directory number in the specified partition.                                                                                                                                                                                                                                                                                                                                               |
|                                  | Display                    | Use a maximum of 30 alphanumeric characters. Typically, use the user name or the directory number (if you use the directory number, the person receiving the call may not see the proper identity of the caller).<br><br>Leave this field blank to have the system display the extension.                                                                                                                                                        |
|                                  | External Phone Number Mask | Phone number (or mask) that is used to send Caller ID information when a call is placed from this line.<br><br>You can enter a maximum of 24 number, the international escape character +, *, # and "X" characters. The X characters represent the directory number and must appear at the end of the pattern. For example, if you specify a mask of 972813XXXX, an external call from extension 1234 displays a caller ID number of 9728131234. |

**Step 4** Click **Add** or **Save**.

The Unified CM Telephony Call Control Group Configuration summary web page opens. The corresponding CTI ports are created in the Unified CM Telephony call control group. The new call control group appears in

the list of call control groups displayed in the Cisco Unified CM Telephony Call Control Group Configuration web page.

## Add Unified CM Telephony Trigger

You must configure Unified CM Telephony triggers to invoke application scripts in response to incoming contacts. A Unified CM Telephony trigger responds to calls that arrive on a specific route point by selecting telephony and media resources to serve the call and invoking an application script to handle the call. The Unified CM Telephony triggers are available with all Unified CCX license packages.

Unified CM Telephony trigger settings include:

- **Session** information, such as the application to associate with the trigger, Maximum Number of sessions allowed, and the Idle Timeout value.
- **CTI** information, such as a CTI port device and CTI route points for each call Unified CCX simultaneously places or accepts.
- **Directory Number** information, such as the Voice Mail Profile and Calling Search Space.
- **Call Forward and Pickup** instructions.

To add and configure a Unified CM Telephony trigger, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Cisco Unified CM Telephony > Triggers**.

The Unified CM Telephony Trigger Configuration web page opens displaying the following fields.

| Field       | Description                                                                           |
|-------------|---------------------------------------------------------------------------------------|
| Route Point | Available CTI route point, which is the directory number associated with the trigger. |
| Application | Application name to associate with the trigger.                                       |
| Sessions    | Maximum number of simultaneous calls that the trigger can handle.                     |
| Enabled     | True if the trigger is enabled; False if the trigger is disabled.                     |

**Note** If you try to delete a trigger associated with an outbound call control group, then the campaigns associated with the trigger become invalid and the application also gets deleted. In such cases, when you click the **Delete** icon or button, a dialog box opens to confirm your action. Click **OK** if you want to delete the trigger and disassociate the campaigns associated with it. If you delete a trigger and navigate to the Campaign Configuration web page, you will also see an alert regarding the missing trigger association for that campaign.

**Step 2** Click the **Add New** icon that is displayed in the tool bar in the upper left corner of the window or the **Add New** button that is displayed at the bottom of the window.

The Unified CM Telephony Trigger Configuration web page opens.

**Step 3** Use this web page to specify the following mandatory fields:

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Directory Information</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Directory Number             | <p>A unique phone number. To support E.164 compliance, Unified CCX allows you to add a plus sign (+) before the agent extension or a route point directory number followed by 15 characters which consist of numerals and the following special characters: uppercase letter X, hash (#), square brackets ([ ]), hyphen (-), and asterisk (*).</p> <ul style="list-style-type: none"> <li>• Supports only route point directory numbers and Finesse agent and supervisor extensions.</li> </ul> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>• +1234 and 1234 are two different directory numbers.</li> <li>• The square brackets ([ ]) enclose a range of values.</li> <li>• For more information, see the “Wildcards and Special Characters in Route Patterns and Hunt Pilots” section in the .</li> </ul> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• Valid directory numbers—+1223* or *#12##</li> <li>• Invalid directory numbers—91X+ or +-12345</li> </ul> <p><b>Note</b> Use of two(2) wildcard CTI Route Points that overlap with each other is not supported. For example, Route Point 1: 123XXXX and Route Point 2: 1234XXX overlap with one another and is not supported.</p> <p>However, a wildcard CTI Route point can overlap with a full DID (best match pattern) that doesn't contain a wildcard. For example, Route Point 1: 123XXXX and Route Point 2: 1234567 is supported.</p> |
| <b>Trigger Information</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Language                     | <p>Choose the default language to associate with the incoming call when the application is started from this drop-down menu.</p> <p><b>Note</b> To add a Language option, click <b>Edit</b> button. The User Prompt dialog box opens. Enter a locale string value and click <b>OK</b>. The User Prompt dialog box closes, and the name of the language opens in the Language field in the Unified CM Telephony Configuration web page.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Application Name             | From the drop-down menu, choose the application to associate with the trigger.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Device Name                  | A unique identifier for this device, consisting of alphanumeric characters, dots, dashes, or underscores.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description                  | A descriptive name for the CTI route point.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Field                                                                          | Description                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Call Control Group                                                             | Choose the call control group to associate with the trigger from this drop-down menu. For Outbound IVR Dialer, you must select the call control group from Outbound type call control group list. The route point should be created on Unified CM. Once you assign the Outbound group for a trigger, you cannot change it to an Inbound group and vice versa.                                          |
| <b>Advanced Configuration</b> (available only if you click <b>Show More</b> ). |                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Advanced Trigger Information</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Enabled                                                                        | Radio buttons to choose the required option: <ul style="list-style-type: none"> <li>• <b>Yes</b>—enable the trigger (default)</li> <li>• <b>No</b>—disable the trigger.</li> </ul>                                                                                                                                                                                                                     |
| Maximum Number of Sessions                                                     | The maximum number of simultaneous calls that this trigger can handle. The number is actually governed by the Unified CM (10,000 for each separate line). However in Unified CCX, this number is restricted to the maximum number of sessions. Any call after this number is exceeded gets the busy tone.                                                                                              |
| Idle Timeout (in ms)                                                           | The number of milliseconds (ms) the system should wait before rejecting the Unified CM Telephony request for this trigger.                                                                                                                                                                                                                                                                             |
| Override Media Termination                                                     | Radio buttons to choose the required options: <p><b>Yes</b>—Override media termination.</p> <p><b>No</b>—Enable media termination (default).</p> <p>If you select Yes, two panes open:</p> <ul style="list-style-type: none"> <li>• Selected Dialog Groups displays the default or selected group.</li> <li>• Available Dialog Groups lists the configured dialog.</li> </ul>                          |
| <b>CTI Route Point Information</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                        |
| Alerting Name ASCII                                                            | This information is automatically populated based on the configuration in the Unified CM setup and displays the ASCII name filed used in one of the following situations: <ul style="list-style-type: none"> <li>• If the device is not capable of handling the Unicode strings</li> <li>• If the locals on endpoint devices do not match</li> <li>• If the Unicode string is not specified</li> </ul> |
| Device Pool                                                                    | The device pool to which you want to assign this route point. A device pool defines sets of common characteristics for devices, such as region, date/time group, softkey template, and MLPP information.                                                                                                                                                                                               |
| Location                                                                       | The total bandwidth that is available for calls to/from this location. A location setting of <b>HUB_NONE</b> indicates that the locations feature does not keep track of the bandwidth used by this route point.                                                                                                                                                                                       |
| <b>Directory Number Settings</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                        |



| Field                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Partition                               | <p>The partition to which the Directory Number belongs. The Directory Number field value must be unique within the partition that you choose.</p> <p>If you do not want to restrict access to the Directory Number, select &lt;None&gt; as the partition setting.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Voice Mail Profile                      | <p>A list of profiles defined in the Voice Mail Profile Configuration.</p> <p>The first option is &lt;None&gt;, which is the current default Voice Mail Profile that is configured in the Voice Mail Profile Configuration.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Calling Search Space                    | <p>A collection of partitions that are searched for numbers that are called from this directory number. The specified value applies to all devices that use this directory number.</p> <p>For example, assume you have two calling search spaces: Building and PSTN. Building only allows users to call within the building, while PSTN allows users to call both in and outside the building. You could assign the phone to the Building calling search space and the line on your phone to the PSTN calling search space. For more information, see the .</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Calling Search Space for Redirect       | <p>By default, Cisco Unified Communications Manager uses the original calling party's calling search space (CSS) to process the redirected call from a Unified CCX Trigger to a Unified CCX CTI Port. This default behavior requires the partition of the Unified CCX CTI ports to be a member of the original calling party's CSS even if the partition of the CTI Route Point/Unified CCX Trigger is accessible to the calling device's CSS and the CSS of the CTI Route Point/Unified CCX Trigger contains the partition of the Unified CCX CTI Ports.</p> <p>You can modify this behavior using the drop-down list to instruct Cisco Unified Communications Manager which CSS to use when redirecting the call from the CTI Route Point to the CTI Port.</p> <p>Calling Search Space for Redirect options:</p> <ul style="list-style-type: none"> <li>• <b>Default Calling Search Space</b>—CSS of the calling device</li> <li>• <b>Calling Address Search Space</b>—CSS of the calling device</li> <li>• <b>Route Point Address Search Space</b>—CSS of the CTI Route Point (Trigger)</li> </ul> |
| Presence Group                          | <p>A list of groups to integrate the device with the iPass server. The device/line information is provided for integrating applications.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Call Forward and Pickup Settings</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Field                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forward Busy               | <p>Check one of the following options:</p> <p><b>Voice Mail</b>—Check this box to use settings in the Voice Mail Profile Configuration window.</p> <p><b>Note</b> When this box is checked, Unified CM ignores the settings in the Destination box and Calling Search Space.</p> <p><b>Destination</b>—To use any disable phone number, including an outside destination.</p> <p><b>Calling Search Space</b>—To apply the above setting all devices that are using this directory number.</p> |
| Display                    | Use a maximum of 30 alphanumeric characters. Typically, use the user name or the directory number (if using the directory number, the person receiving the call may not see the proper identity of the caller). Leave this field blank to have the system display an extension.                                                                                                                                                                                                               |
| External Phone Number Mask | <p>Phone number (or mask) that is used to send Caller ID information when a call is placed from this line.</p> <p>You can enter a maximum of 24 number, the international escape character +, *, # and "X" characters. The X characters represent the directory number and must appear at the end of the pattern. For example, if you specify a mask of 972813XXXX, an external call from extension 1234 displays a caller ID number of 9728131234.</p>                                       |

**Step 4** Click **Add** or **Save** to save the changes. The specified route point is created on the Unified CM.

The Unified CM Telephony Trigger Configuration web page opens and displays the new Unified CM Telephony trigger.

## Additional Unified CM Telephony Information

This section includes the following topics:

- [Unified CM Telephony Triggers for Unified CCX Queuing, on page 74](#)
- [Unified CM Telephony Information Resynchronization, on page 75](#)

## Unified CM Telephony Triggers for Unified CCX Queuing

When limiting the number of calls per application in Unified CCX applications, you need to take care to coordinate the Unified CM Telephony trigger Maximum Number of Sessions limit with the Media Group session limit.

For example, if you are using Unified CCX for queuing calls and set the Unified CM Telephony trigger Maximum Number of Sessions limit on Unified CCX to 4 and set the Call Forward and Pickup Settings to send the fifth call to voice mail. To make this happen, you must configure the Media Group Session Limit to

the identical setting (4). This will cause Unified CM to forward the next incoming call to voice mail (once the CTI New Call Accept timer setting expires).

The disadvantage of this approach is that you need to define more media groups for each application and you cannot share the same set of media groups across multiple applications.

## Unified CM Telephony Information Resynchronization

If the Unified CM Telephony information (Unified CM Telephony users, CTI ports, triggers) in the Unified CM is missing or not in sync with Unified CCX data, choose **Subsystems > Cisco Unified CM Telephony > Data Resync** from the Unified CCX Administration menu bar. Unified CCX checks whether:

- The Unified CM Telephony users exist in Unified CM.
- All the ports belonging to the Port Group exist in Unified CM.
- The port group's data is in sync with Ports data in Unified CM.
- The ports' association to users are correct.
- The route point exists in Unified CM.
- The triggers data is in sync with the Route Point data in the Unified CM.
- The route points have been associated with all the Unified CM Telephony users in Unified CM.

Unified CCX synchronizes the data by:

- Creating any missing users
- Creating any missing ports
- Modifying out-of-sync ports
- Associating CTI Ports to Unified CM Telephony users. (For example, associating CTI Ports created for Node 1 to the Unified CM Telephony User for Node 1, and so forth)
- Creating any missing route points
- Modifying out-of-sync route points
- Associating route points to all the Unified CM Telephony users.

## Cisco Media Subsystem

The Cisco Media subsystem is a subsystem of the Unified CCX Engine. The Cisco Media subsystem manages the CMT media resource. CMT channels are required for Unified CCX to be able to play or record media.

The Cisco Media subsystem uses *dialog groups* to organize and share resources among applications. A dialog group is a pool of *dialog channels* in which each channel is used to perform *dialog interactions* with a caller, during which the caller responds to automated prompts by pressing buttons on a touch-tone phone.



**Note** The built-in grammars and grammar options that are supported by Unified CCX when using an MRCP dialog channel is determined by the MRCP speech software you purchase. See the software vendor for information about what built-in grammars and features are supported.

To enable your Unified CCX applications to handle simple DTMF-based dialog interactions with customers, you must provision the Cisco Media subsystem to configure CMT dialog groups.



**Caution** All media termination strings begin with `auto` and contain the same ID as the call control group—not the CMT dialog group. If the default media termination is configured and the ID differs, follow the procedure provided in the **Add CMT Dialog Control Group**.

## Add CMT Dialog Control Group

To add a CMT dialog control group, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Cisco Media**.

The Cisco Media Termination Dialog Group Configuration web page opens. Any preconfigured entry is listed on this page with the following information:

| Field       | Description                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------|
| GroupID     | The unique Group ID associated with the media.                                                          |
| Description | CMT group description.<br><b>Note</b> The ID in this field need not necessarily match the CMT group ID. |
| Channels    | Number of channels associated with the group.                                                           |

**Step 2** Click **Add New** icon at the top or **Add New** button at the bottom of the window. The Cisco Media Termination Dialog Group Configuration web page opens.

**Note** By default, a Unified CM Telephony Call Control Group with Group ID 0 is created.

**Step 3** Use this web page to specify the following fields.

| Field       | Description                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------|
| Group ID    | A Group ID value unique within all media group identifiers, including ASR group identifiers. This is a mandatory field. |
| Description | Description for the Cisco Media Termination Dialog group.                                                               |

| Field                        | Description                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Licensed IVR ports | Number of licensed IVR ports. Display only.                                                                                                                                                                                                                                                                                                     |
| Maximum Number Of Channels   | <p>Maximum number of channels associated with this group. This is a mandatory field.</p> <p><b>Note</b> You can specify any value for Maximum Number Of Channels, but restrictions are placed on the system when a call is made. This restriction is imposed by the number of licensed IVR ports on your system. This is a mandatory field.</p> |

- Step 4** Click **Add** icon that displays in the tool bar in the upper left corner of the window or the **Add** button that displays at the bottom of the window.
- The CMT Dialog Group Configuration web page opens, displaying the new CMT dialog group.
- You are now ready to provision MRCP ASR and MRCP TTS subsystems.

## ASR and TTS in Unified CCX

Unified CCX supports ASR and TTS through two subsystems:

### MRCP ASR

This subsystem allows users to navigate through a menu of options by speaking instead of pressing keys on a touch-tone telephone.

### MRCP TTS

This subsystem converts plain text (UNICODE) into spoken words to provide a user with information, or prompt a user to respond to an action.



**Note** Only G.711 codec is supported for ASR/TTS integrations.

## Prepare to Provision ASR/TTS

It is the responsibility of the customer to perform the following tasks:

- Order ASR/TTS speech servers from Cisco-supported vendors.



**Note** For more information on supported speech servers for Unified CCX, see the Unified CCX Compatibility related information, located at:  
<https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>.

- Work with the ASR/TTS vendor to size the solutions.

- Provision, install, and configure the ASR/TTS vendor software on a different server (in the same LAN) and not where the Unified CCX runs. You can configure the speech software for Unified CCX in the same way as Unified CCX 7.0 (see the Unified CCX Compatibility related information, located at: <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html> for details.).
- Before uploading a ASR/TTS script to Unified CCX Administration, validate the script against the capabilities and specifications supported by the ASR/TTS vendor.

## Provision of MRCP ASR Subsystem

The MRCP ASR subsystem allows users to navigate through a menu of options by speaking instead of pressing keys on a touch-tone telephone. When a user calls local directory assistance, for example, ASR can prompt the user to say the city and state in which to locate the information, then connect the user to an appropriate operator.

To provision the MRCP ASR subsystem, define the following information:

- **MRCP ASR Providers**—Information about the vendor of your speech server, including the number of licenses and the grammar type.
- **MRCP ASR Servers**—Information about the ASR server's name, port location, and available languages.
- **MRCP ASR Groups**— Information about the MRCP ASR dialog control groups and associated locales, which enable Unified CCX applications to use speech recognition.

## Provision MRCP ASR Providers

Use the MRCP ASR Provider Configuration web page to specify information about the vendor of your speech server.

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystem > MRCP ASR > MRCP ASR Providers**. The MRCP ASR Provider Configuration web page opens, displaying the list of currently configured MRCP providers, licenses, and the corresponding status.
- Step 2** Click **Add New** icon that displays in the tool bar in the upper left corner of the window or the **Add New** button that is displayed at the bottom of the window. The MRCP ASR Provider Configuration web page opens.
- Step 3** Specify the following mandatory fields:

| Field                       | Description                                                       |
|-----------------------------|-------------------------------------------------------------------|
| Provider Name               | Enter the name of the MRCP ASR provider supported by Unified CCX. |
| Number of Provider Licenses | The number of ASR port licenses purchased from the ASR vendor.    |

| Field           | Description                                                                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Grammar Variant | Vendor-specific grammar setting. Valid options: <ul style="list-style-type: none"> <li>• Nuance Open Speech Recognizer servers version 9.0 and above (OSR 3.1.x)</li> <li>• Nuance 8.5 and below version ASR servers (Nuance)</li> <li>• IBM WVS ASR servers (2003 SISR)</li> </ul> |

**Step 4** Click **Add** icon in the tool bar in the upper left corner of the window or the **Add** button that displays at the bottom of this window to apply changes.

**Note** After you update MRCP ASR/TTS Providers, Servers, and Groups, the corresponding provider needs to be refreshed for changes to take effect. The Unified CCX Engine does not need to be restarted. However, during a Refresh, Unified CM Telephony triggers using affected groups will fall back to the dialog group that is configured and the MRCP Provider being refreshed will go NOT\_CONFIGURED until the reload is complete.

Your changes appear in the MRCP ASR Providers List page. You are now ready to provision MRCP ASR Servers.

**Note** If you delete an ASR/TTS provider and all of its associated servers and then create a new ASR/TTS provider, its status might become IN\_SERVICE immediately, even before you create any servers for it. In this situation, click **Refresh** for that ASR/TTS provider, or click **Refresh All**. These actions change the status of the ASR/TTS provider to NOT\_CONFIGURED.

## Provision MRCP ASR Servers

Use the MRCP ASR Server Configuration web page to specify information about the speech server's name, port location, and available language.



**Note** You must have a MRCP ASR Provider defined before you can provision a MRCP ASR Server.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystem > MRCP ASR > MRCP ASR Servers**. The MRCP ASR Server Configuration web page opens, displaying a list of previously configured servers, if applicable with the following information:

| Column | Description |
|--------|-------------|
|--------|-------------|

|               |                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Computer Name | Host name or IP address in which the ASR server software is installed.<br><br><b>Note</b> ASR server deployment over WAN is not supported in Unified CCX. The ASR server should be in the same LAN where Unified CCX is. You need to specify the ASR server host name or IP address that is local with the Unified CCX node while installing the ASR server software in this field. |
| Provider      | The MRCP ASR Provider to which this server is associated.                                                                                                                                                                                                                                                                                                                           |
| Port          | TCP port numbers used to connect to a MRCP server <ul style="list-style-type: none"> <li>• OSR 3.1x—4900</li> <li>• 2003 SISR—554</li> <li>• Nuance—554</li> </ul>                                                                                                                                                                                                                  |
| Status        | Status or state of the subsystem.                                                                                                                                                                                                                                                                                                                                                   |

**Step 2** Click **Add New** icon that is displayed in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window to provision a new MRCP ASR Server.

The MRCP ASR Server Configuration web page opens.

**Step 3** Use this web page to specify the following fields.

| Field         | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server Name   | Host name or IP address of the server where the MRCP ASR server software is installed.                                                                                                                                                                                                                                                                                                            |
| Provider Name | Select the name of the MRCP ASR Provider to which this server is associated from this drop-down list.                                                                                                                                                                                                                                                                                             |
| Port Number   | TCP port numbers that are used to connect to an MRCP server. Though the default value is shown as 4900, you need to provide any one of the following values in this field based on the TCP provider or grammar variant you have selected while configuring an MRCP ASR provider: <ul style="list-style-type: none"> <li>• OSR 3.1x—4900</li> <li>• 2003 SISR—554</li> <li>• Nuance—554</li> </ul> |



|         |                                                                                                                                                                                                                                                                                 |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Locales | <p>Languages supported by the ASR Provider. Select a language (or multiple languages) from the drop-down list and click <b>Add Language</b>; the selected language appears in the Enabled Language list.</p> <p><b>Note</b> Use the check box to disable/enable a language.</p> |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Step 4** Click **Add** to apply changes.

Your changes appear in the MRCP ASR Server list web page. You are now ready to provision MRCP ASR Groups.

## Provision MRCP ASR Dialog Groups

Use the MRCP Groups Configuration web page to specify information about MRCP ASR dialog control groups, which enable Unified CCX applications to use speech recognition.



**Note** You must have a MRCP ASR Provider defined before you can provision a MRCP ASR Group. Also, you should configure MRCP ASR Servers for the specific MRCP Provider before configuring the MRCP ASR Groups. This allows users to configure languages for the groups based on the languages supported by the configured servers.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystem > MRCP ASR > MRCP ASR Dialog Groups**.

The MRCP ASR Dialog Group Configuration web page opens to display a list of preconfigured entries, if applicable with the following information:

| Field       | Description                       |
|-------------|-----------------------------------|
| Group ID    | Identifier for the group.         |
| Description | Description of this dialog group. |
| Provider    | Name of the MRCP ASR provider.    |
| Channels    | Maximum number of sessions.       |

This web page also displays the Number of Licensed IVR Channels.

**Step 2** Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the window to provision a MRCP ASR Group.

The MRCP ASR Dialog Group Configuration web page opens.

**Step 3** Use this web page to specify the following fields:

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group ID                     | Associated group ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description                  | Description of this dialog group.<br><br><b>Tip</b> Include languages that will be used by this Group to the description. Doing so will provide insight into the languages this Group uses when you set up the dialog group in the Unified CM Telephony trigger configuration. This also ensures that the locales used by the application configured in the Unified CM Telephony trigger match the locales supported by the MRCP ASR dialog group being selected.                                                                                                                                                                                                                                                                                                                                                                 |
| Number Of Provider Licenses  | Display only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number Of Licensed IVR Ports | Display only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maximum Number Of sessions   | Maximum number of sessions associated with this dialog group.<br><br><b>Note</b> You can assign any value for Maximum Number Of Channels, but restrictions are placed on the system when a call is made. This restriction is imposed by the number of licensed IVR ports on your system.<br><br><b>Caution</b> Under heavy load, calls that utilize a channel from an MRCP ASR Dialog Control Group, might have a reduced call completion rate as the MRCP channels used by calls can take some additional time to clean up all the sessions set up with MRCP resources. To address this situation, you can overprovision the value of this field by a factor of 1.2 or by an additional 20 percent. For example, if your application requires 100 MRCP ASR channels, modify the value in this field to be 120 MRCP ASR channels. |
| Provider Name                | Select a MRCP Provider name from the drop-down list that contains a list of all previously defined provider names.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Enabled Languages            | Select the languages that you wish to configure for this group from the list displayed.<br><br>The displayed languages represent the locales configured for all MRCP ASR servers for the specified provider. If there are no MRCP ASR servers configured, no languages are displayed. In this case, you must update the group configuration once MRCP ASR servers have been configured for the specified provider.                                                                                                                                                                                                                                                                                                                                                                                                                |

**Step 4** Click **Add** to apply changes.

Your changes appear in the MRCP ASR Groups list web page.

## MRCP TTS Subsystem

The MRCP TTS subsystem converts plain text (UNICODE) into spoken words to provide a user with information, or prompt a user to respond to an action.

For example, a company might use TTS to read back a customer's name, address, and telephone number for verification before the company ships a requested product to the customer's location. Or a customer might dial into a pre-designated phone number, access a voice portal, and listen to the latest weather report or stock quotes. TTS can also convert email text to speech and play it back to the customer over telephone.

To provision the MRCP TTS subsystem, define the following information:

- **MRCP TTS Providers**—Information about the vendor of your TTS system.




---

**Note** If you delete an ASR/TTS provider and all of its associated servers and then create a new ASR/TTS provider, its status might become IN\_SERVICE immediately, even before you create any servers for it. In this situation, click Refresh for that ASR/TTS provider, or click Refresh All. These actions change the status of the ASR/TTS provider to NOT\_CONFIGURED.

---

- **MRCP TTS Servers**—Information about the TTS server's name, port location, and available languages.
- **MRCP TTS Default Genders**—Information about the default gender setting for the Locales specified during TTS Server provisioning.




---

**Note** You will need at least one MRCP TTS Provider for each vendor requiring TTS server installation.

---

## Provision MRCP TTS Providers

Use the MRCP TTS Providers Configuration web page to specify information about the vendor of your TTS server.




---

**Note** After you update MRCP ASR/TTS Providers, Servers, and Groups, the corresponding provider needs to be refreshed for changes to take effect. The Unified CCX Engine does not need to be restarted. However, during a Refresh, Unified CM Telephony triggers using affected groups will fall back to the dialog group that is configured and the MRCP Provider being refreshed will go NOT\_CONFIGURED until the reload is complete.

---

### Procedure

- 
- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > MRCP TTS > MRCP TTS Provider**. The MRCP TTS Provider Configuration web page opens. If providers are already configured, this page lists the provider name and corresponding status.

- Step 2** Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the window.
- Use this web page to specify the MRCP TTS Provider supported by Unified CCX.
- The MRCP TTS Provider Configuration web page reopens. The Provider Name drop-down list displays the existing MRCP TTS Providers. Choose the MRCP TTS Provider supported by Unified CCX from this list.
- Note** Support for High Availability and remote servers is available only in multiple-server deployments.
- Step 3** Click **Add** to apply changes.
- Your changes appear in the MRCP TTS Provider Configuration web page. You are now ready to provision MRCP TTS Servers.

---

### Configure Default TTS Provider for Unified CCX System

Optionally, you can configure a default TTS provider. The Unified CCX Prompt Manager uses the default TTS provider for rendering TTS prompts if a TTS provider is not configured in the TTS Prompt. This usually happens in the case of VXML applications. For additional information on supported VXML tags for Unified CCX, see *Cisco Unified Contact Center Express Getting Started with Scripts*.

To configure a default TTS provider, follow these steps.

#### Procedure

- Step 1** Choose **System > System Parameters**.
- Step 2** In the Default TTS Provider drop down list below Media Parameters section, select the provider you wish to be the system default. You must select only a preconfigured TTS provider as the Default TTS Provider.
- Note** If you are deploying an VXML applications and the only TTS functionality you need is to play pre-recorded .wav files, select the **Cisco LiteSSMLProcessor** option as the Default TTS Provider. This option allows you to execute SSML that has .wav file references in them.
- Step 3** Click **Update**.

---

### Provision MRCP TTS Servers

Use the MRCP TTS Servers Configuration web page to configure the TTS server's name, port location, and available languages.

You need at least one MRCP TTS Server associated with each configured provider.




---

**Note** You must have a MRCP TTS Provider defined before you can provision a MRCP TTS Server.

---

## Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > MRCP TTS > MRCP TTS Server**.

The MRCP TTS Server Configuration web page opens, displaying a list of previously configured servers, if applicable, with the following information:

| Column        | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Computer Name | Host name or IP address of the server in which the TTS server software is installed.<br><br><b>Note</b> TTS server deployment over WAN is not supported in Unified CCX. In other words, the TTS server should be in the same LAN where Unified CCX is. Thus, you need to specify the TTS server host name or IP address that is local with the Unified CCX node while installing the TTS server software in this field. |
| Port          | TCP port numbers used to connect to a MRCP server. Following are the different TCP Provider names: <ul style="list-style-type: none"> <li>• MRCP Server</li> <li>• Nuance Vocalizer</li> <li>• Scansoft Realspeak</li> </ul>                                                                                                                                                                                            |
| Provider      | The MRCP TTS Provider to which this server is associated.                                                                                                                                                                                                                                                                                                                                                               |
| Status        | Status or state of the subsystem.                                                                                                                                                                                                                                                                                                                                                                                       |

**Step 2** Click **Add MRCP TTS Server** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the window to provision a new MRCP ASR Server.

The MRCP TTS Server Configuration web page opens.

**Step 3** Specify the following fields:

| Field         | Description                                                                                           |
|---------------|-------------------------------------------------------------------------------------------------------|
| Server Name   | Host name or IP address of the server the MRCP TTS server software is installed.                      |
| Provider Name | Select the name of the MRCP TTS Provider to which this server is associated from this drop-down list. |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port Number | TCP port number used to connect to a MRCP TTS server. The port numbers are automatically displayed based on the provider or grammar variant that you have selected while configuring a MRCP TTS provider. Following are the different TCP Provider names along with their port numbers: <ul style="list-style-type: none"> <li>• MRCP Server - 554</li> <li>• Nuance Vocalizer - 554</li> <li>• Scansoft Realspeak - 4900</li> </ul> |
| Locales     | Languages supported by the TTS Provider. Select a language (or multiple languages) from the drop-down list and click <b>Add Language</b> ; the selected language appears in the Enabled Language list. <p><b>Note</b> Use the check box to disable/enable a language.</p>                                                                                                                                                            |

**Step 4** Click **Add** to apply changes.

Your changes appear in the MRCP TTS Server Configuration web page. You are now ready to provision MRCP TTS Default Genders.

**Note** Whenever a new language is added for a MRCP Server—and if this is the first instance of this language being added for the corresponding MRCP Provider—then the default gender for that locale and for the specified provider is set to Neutral. You should check the MRCP Locales page to review the default genders that are set automatically per locale per provider. Default genders are used when a prompt for a specific locale is used without specifying any gender.

## Provision MRCP TTS Default Genders

Use the MRCP TTS Default Genders Configuration web page to configure the default gender settings per Locale per Provider. TTS uses default genders when a prompt for a specific locale is used without specifying the gender.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > MRCP TTS > MRCP TTS Default Genders**.

The MRCP TTS Default Gender Configuration web page opens, displaying the default genders currently configured for each locale for every MRCP TTS Provider that is currently configured.

**Step 2** Optionally, change the default gender setting for each locale for each provider.

**Note** The Locale radio button has the Male, Female, or Neutral options. By default, the “Default Gender” is set to “Neutral” unless configured explicitly.

**Step 3** Click **Update** to apply changes.

The system updates the default gender setting for each Locale per Provider.

---







## CHAPTER 8

# Provision of Unified CCX

To provision the Unified CCX subsystem, you must provision your telephony and media resources (see the [Provision Telephony and Media Resources](#), on page 59).



### Attention

Do not edit users, teams and permissions in Unified Intelligence Center. The Unified CCX to Unified Intelligence Center sync runs as part of daily purge and synchronizes these settings on Unified Intelligence Center according to Unified CCX settings.

The following topics introduce the Unified CCX subsystem and explain how to provision it in the Unified CCX system:

- [RmCm Provider Configuration](#), on page 89
- [Resource Groups](#), on page 91
- [Skills Configuration](#), on page 92
- [Agent Configuration](#), on page 94
- [Contact Service Queue Configuration](#), on page 98
- [Configure Agent-Based Routing](#), on page 106
- [Teams Configuration](#), on page 107

## RmCm Provider Configuration

The Unified CCX Resource Manager (RM) uses a Unified CM Telephony user (called the RmCm Provider) to monitor agent phones, control agent states, and route and queue calls. For information on adding Unified CM users, see section "Adding Users to a User Group" section in the *Cisco Unified Communications Manager Administration Guide* available here:

[https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html).



### Note

The RmCm user specified through Unified CCX Administration is updated automatically in Unified CM.

## RmCm Provider Modification



**Note** This section only applies to Unified CCX deployments with Unified CM.



**Caution** While Unified CM supports Unicode characters in first and last names, those characters become corrupted in Unified CCX Administration web pages for RmCm configuration and real-time reporting .

The RmCm Provider web page is a read-only page that displays the latest configured information. To access this configuration area, choose **Subsystems > RmCm > RmCm Provider** from the Unified CCX Administration menu bar. The RmCm Provider web page opens, displaying the following read-only fields.

| Field                   | Description                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Primary RmCm Provider   | The host name or IP address of the server, running CTI Manager (Unified CM that runs CTI Manager).<br><br>The RmCm subsystem registers with the CTI Manager so that it can observe an agent's device when the agent logs in. When the CTI Manager fails, the RmCm subsystem registers with the second CTI Manager, if there is one configured. |
| Secondary RmCm Provider | The host name or IP address of the secondary RmCm Provider.                                                                                                                                                                                                                                                                                    |
| User ID                 | The RmCm user ID.                                                                                                                                                                                                                                                                                                                              |

To modify the RmCm Provider, click **Modify RmCm Provider Information** icon in the tool bar in the upper, left corner of the window. The Cisco Unified CM Configuration web page opens.

## Associating Agent Extensions with the RmCm Provider



**Note** This section only applies to Unified CCX Deployments with Unified CM.

For every agent/resource created in Unified CM, make sure that the agent phone is also associated with the RmCm Provider. You do this from the Unified CM User Page for the RmCm Provider. In other words, even though you *create* the RmCm User in Unified CCX Administration, you still need to use the Unified CM interface to *associate* the RmCm user with an agent phone. These phones are the same as those associated with each agent.



---

**Note** If you use Extension Mobility (EM), ensure that the IPCC extension is associated with the Extension Mobility (EM) User Device Profile (UDP) and not to the physical phone. The Extension Mobility (EM) profile needs to be associated with the RmCm user and the physical phones that the agents may be expected to use should not be associated to the RmCm user.

---

## Resource Groups

Resource groups are collections of agents that your CSQ uses to handle incoming calls. To use resource group-based CSQs, you must specify a resource group.

### Create Resource Group

To create a resource group, complete the following steps.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resource Groups**.  
The Resource Group web page opens with a list of configured resource groups (if any).
- Step 2** Click **Add New** icon in the tool bar in the upper, left corner of the window or **Add New** button at the bottom of the window.  
The Resource Group Configuration area opens.
- Step 3** In the Resource Group Name field, enter a resource group name.  
Enter a name that identifies the resource group to which you want to assign agents (for example, “Languages”).
- Step 4** Click **Add**.  
The Resource Groups page opens displaying the resource group name in the Resource Group Name column.
- 

### Modify Resource Group Name

To modify a resource group name, complete the following steps.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resource Groups**.  
The Resource Group web page opens.
- Step 2** In the Resource Group Name column, click the resource group that you want to modify.

The Resource Group Configuration area opens.

**Step 3** Type the name of the resource group in the Resource Group Name text field.

**Step 4** Click **Update** to apply the modifications.

The Resource Groups area opens, displaying the modified resource group name in the Resource Group Name column.

## Delete Resource Group

When you delete a resource group, the resource group is removed automatically if it is not associated with any agents and CSQs. If the resource group is associated with any agents or CSQs and if you click **Delete**, you will be directed to another web page, where you can see a list of the associated CSQs and agents, and you are prompted to confirm whether you want to delete the same.



**Tip** To delete resource groups, you can use the following procedure or open a Resource Group and click the **Delete** icon or button in the Resource Group Configuration web page.

To delete a resource group, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resource Groups**.

The Resource Group web page opens.

**Step 2** Click **Delete** icon next to the name of the Resource Group that you want to delete.

A dialog box opens, warning that the resource group is about to be permanently deleted.

**Step 3** Click **Continue**.

The resource group is deleted.

## Skills Configuration

Skills are customer-definable labels assigned to agents. All the Unified CCX license packages can route incoming calls to agents who have the necessary skill or sets of skill to handle the call.

### Create a Skill

To create a skill, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Skills**.
- The Skills web page opens to display the Skill Name (customer-definable label assigned to an agent), if configured.
- Step 2** Click **Add New** icon in the tool bar in the upper, left corner of the window or **Add New** button at the bottom of the window.
- Note** When the system reaches the maximum number of skills that can be created, the **Add New** icon or button no longer appears.
- The Skill Configuration web page opens.
- Step 3** In the Skill Name field, enter a description of a relevant skill (for example, French).
- Step 4** Click **Add**.
- The Skills web page opens, showing the skill in the Skill Name column and the total number of skills that exist in the system. You can add a maximum of 150 skills.
- 

## Modify a Skill Name

To modify a skill name, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Skills**.
- The Skills web page opens.
- Step 2** In the Skill Name column, click the skill that you want to modify.
- The Skill Configuration web page opens.
- Step 3** Modify the name of the skill in the Skill Name text field.
- Step 4** Click **Update** to apply the modifications.
- The Skills Configuration summary opens, displaying the modified skill name in the Skill Name column.
- 

## Delete a Skill

When you delete a skill, the skill is removed automatically if it is not associated with any agents and CSQs. If the skill is associated with any agents or CSQs and if you click **Delete**, you are directed to another web page, where you can see a list of the associated CSQs and agents, and you are prompted to confirm whether you want to delete the same.



**Tip** To delete a skill, you can use the following procedure or open a skill and click **Delete** icon or button in the Skills Configuration web page.

To delete a skill, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Skills**.

The Skills web page opens.

**Step 2** Click the **Delete** icon next to the name of the skill that you want to delete.

A dialog box opens, warning that the skill is about to be permanently deleted.

**Step 3** Click **Continue**.

The skill is deleted.

## Agent Configuration

Once the end users in Cisco Unified Communications<sup>1</sup> are defined as agents, the list of agents and their associated Unified CCX devices are displayed in the **Subsystems > RmCm > Resources** page. These agents are also called resources. After you create a resource group, you can assign agents (resources) to that group.

If you have the Unified CCX Standard license package, you can add skills to agents once the skills have been created. You can also select the competence level of agents in assigned skills. Competence level indicates agent level of expertise in that skill.

You can assign resource groups and skills to agents either individually or in bulk. The bulk option enables you to assign skills and resource groups to multiple agents at the same time.

Once you assign agents to resource groups and skills, you can create a CSQ.



**Warning** After an agent is added, wait for 10 minutes for Unified CCX to automatically synchronize or force synchronization before the agent can sign in to Cisco Finesse.

The maximum allowed length of an agent's IPCC Extension is 15.

### Special Characters

- Unified CM supports the use of special characters—square brackets ([ ]), dollar (\$), ampersand (&), single quotes ('), colon (:), angle brackets(<>), forward slash (/), question mark (?), backward slash (\), parentheses ({}), double quotes(" "), hash(#), percent (%), semicolon (;), comma (,), pipe (|), tilde(

<sup>1</sup> Unified Communications users in a Unified CM deployment refers to a Unified CM user.

~) and space in a user ID when you configure end users. However, Unified CCX restricts the use of these characters when you configure end users as agents or supervisors.

- Unified CCX does not support the use of special characters—square brackets ([ ]), dollar (\$), ampersand (&), single quotes ( ' '), colon (:), angle brackets (< >), forward slash (/), question mark (?), backward slash (\), parentheses ( { } ), double quotes(" "), hash(#), percent (%), semicolon ( ; ), comma ( , ), pipe ( | ), tilde(~).
- With Cisco Finesse for Unified CCX, agent IDs (or usernames) are case-sensitive and can contain letters, numbers, hyphens (-), underscores (\_), and periods (.). They cannot begin or end with a period or contain two periods in a row, and SPACE is not supported.
- Finesse agent passwords are restricted to 7-bit printable ASCII characters (any of the 94 characters with the numeric values from 32 to 126). They do not support control characters (for example, Tab) or international characters.



---

**Note** However, the character '@' is not supported as the agent ID (or username) and password.

---

## Implications of Deleting Agents in Unified CM

If you modify an agent's record in Unified CM (for example, changing the Unified CCX extension or deleting the agent), ensure to refresh the user page on Unified CCX Administration interface so that the agent information in the Unified CCX RmCm subsystem is updated. Choose **Subsystems > RmCm > Resources** option to update the Unified CCX information in the Unified CCX Administration any time. If you change the Unified CCX extension of an agent who is currently logged in, the agent will continue to use the old extension until the agent logs off. The agent must log off and then log back in to the Cisco Finesse desktop to get the new extension. When Unified CCX performs an agent sync and detects that the agent no longer exists in Unified CM, the contact is marked as inactive in the **Resource** table of the Unified CCX Historical Reporting Database (db\_cra). The resource is not deleted as the resource information is referenced for the HR reports.



---

**Caution** Deleting Inactive Agents removes the agent details and records from the Historical Reporting Database, and HR reports will not display historical information of these agents.

If Unified CM connection errors have occurred, all agents will not be visible to Unified CCX. In this case, Unified CCX interprets these agents as deleted agents. As a result, the Inactive Agents list will not be accurate. When the errors are resolved, click **Inactive Agents** again to see an accurate list.

---

## Assign Resource Groups and Skills to One Agent

To assign a resource group and skills to an individual agent, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Resources**.

The Resources web page opens.

**Note** Only agents or supervisors who have assigned Unified CCX extensions are displayed in the list of resources in the Resources area.

**Step 2** Click the name of the agent in the Resource Name column.

The Resource Configuration web page opens.

**Step 3** Specify the following fields.

| Field                      | Description                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resource Name              | Name of the agent (display only).                                                                                                                                                                                                                                                                                                               |
| Resource ID                | Unique identifying number of the agent (display only). This is the alpha-numeric user id assigned in the Unified CM End User Configuration page.                                                                                                                                                                                                |
| Unified CCX Extension      | Unified CCX Extension assigned to the resource group (display only). This is the IP Phone extension assigned to the user from the Unified CM End User Configuration page as IPCC Extension.                                                                                                                                                     |
| Resource Group             | A resource group with which to associate the agent (optional).                                                                                                                                                                                                                                                                                  |
| Automatic Available        | Accept the default ( <b>Enabled</b> ) to automatically put the agent into the Available or Ready state after the agent finishes a call and disconnects.<br><br><b>Note</b> When a logged on agent in Ready, Not Ready, or Work state answers a call, the agent state is subject to the Automatic Available setting.                             |
| Assigned/Unassigned Skills | Select one or more skills from the Unassigned Skills list and click < to add the skills to the Assigned Skills List.<br><br>Select one or more skills from the Assigned Skills List and click > to remove skills from the Unassigned Skills list.<br><br>You can assign up to 50 skills to the agent.                                           |
| Competence Level           | Select a skill from the Assigned Skills list and choose a number from the Competence Level drop-down menu<br><br>Changes the competence level of an assigned skill (1 = Beginner, 10 = Expert).<br><br><b>Note</b> You can change the competency level one skill at a time, only. You cannot change skill competency level as a bulk procedure. |
| Team                       | A group of agents who assign the team to which the resource belongs.                                                                                                                                                                                                                                                                            |
| Agent Alias                | Agent alias is the name used instead of the agent ID when an agent chats with a customer. This option is available only when Finesse is used by the chat agent.                                                                                                                                                                                 |

**Step 4** Click **Update** to apply the changes.



The Resources area of the RmCm Configuration summary web page opens, and the agent is now assigned to the resource group and skills (if skills were assigned).

## Assign Resource Groups and Skills to Multiple Agents

To assign resource groups and skills to agents in bulk, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, select **Subsystems > RmCm > Assign Skills**.

The Assign Skills summary web page opens.

**Tip** Only agents or supervisors who have assigned Unified CCX extensions are displayed in the list of resources in the Resources area.

**Step 2** In the Resource Name column, check the check box beside each agent to whom you want to assign set of same resource group and skills. In the Resource Name column, check the check box next to each agent you want to assign set of same resource group and skills.

**Note** You can check the **Select All** check box to select all agents.

The Skill summary web page shows the total number of skills created.

**Step 3** Click **Add Skill** icon that displays in the tool bar in the upper, left corner of the window or the **Add Skill** button that displays at the bottom of the window.

The Add Skill web page opens.

**Step 4** Specify the following fields.

| Field            | Description                                                                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resource Group   | To assign a resource group to all the selected agents, choose a resource group from the Resource Group drop-down menu.                                                                                               |
| Skills to Add    | Select one or more skills from the Skills list and click < to add the skills to the Skills to Add List.<br><br><b>Note</b> The Skills to Add list contains all skills, not just the skills that agents already have. |
| Skills           | List of the available skills.                                                                                                                                                                                        |
| Competence Level | Select a skill from the Assigned Skills list and choosing a number from the Competence Level drop-down menu                                                                                                          |

**Step 5** Click **Update** to apply the changes.

The Assign Skills area of the RmCm Configuration web page opens, and the agents are now assigned to the resource group and their skills (if skills were assigned).

## Remove Skills from Agents



**Note** If a resource is not assigned a skill that you attempt to remove, the resource is not updated. However, the system will still generate a related message.

To remove skills from agents, complete the following steps.

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Assign Skills**.  
The Assign Skill summary web page opens.
- Step 2** In the Resource Name column, click the check box next to the agent you want to remove skills from.  
**Note** You can click **Select All** check box to select all agents.
- Step 3** Click **Remove Skill** icon that displays in the tool bar in the upper, left corner of the window or the **Remove Skill** button that displays at the bottom of the window.  
The Remove Skill Configuration web page opens.
- Step 4** Remove skills by choosing one or more skills from the Skills list and clicking > to move the skills to the Skills to Remove list.
- Step 5** Click **Update** to apply the changes.  
The Assign Skills area of the RmCm Configuration web page opens, and the agents are no longer assigned to the skills.

## Contact Service Queue Configuration

The Contact Service Queue (CSQ) controls incoming calls by determining where an incoming call should be placed in the queue and to which agent the call is sent.

After you assign an agent to a resource group and assign skills, you need to configure the CSQs.

You assign agents to a CSQ by associating a resource group or by associating *all* skills of a particular CSQ. Agents in the selected resource group or who have *all* the selected skills are assigned to the CSQ.

Skills within the CSQ can be *ordered*. This means, when resources are selected, a comparison is done based on the *competency* level (highest for “most skilled” and lowest for “least skilled”) of the first skill in the list. If there is a “tie” the next skill within the order is used, and so on.

Skills within the CSQ can also be *weighted*. The weight value is an integer from 1 to 1000. Each competency level is multiplied by the skill's associated weight, and a final comparison is done on the sum of all the weighted skill competencies (highest value for “most skilled” and lowest for “least skilled”). The maximum number of CSQs in the system depends on the type of server on which the engine is running.

For more information, see the Unified CCX Data Sheets at [https://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_literature.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_literature.html).

Each agent can belong to up to 25 CSQs. To ensure that agents are not assigned to more than 25 CSQs, click **Resources** submenu option in the RmCm Configuration web page, and click **Open Resources Summary Report** icon. The report opens, listing each agent and the number of CSQs to which the agent belongs. If the agent belongs to more than 25 CSQs, modify the skills and resource groups to which the agent is assigned so that the agent does not belong to more than 25 CSQs.

## Create a Contact Service Queue

To create a new CSQ and assign agents, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**.

The Contact Service Queues web page opens.

Use this web page to view the following fields:

| Field                         | Description                                          |
|-------------------------------|------------------------------------------------------|
| Name                          | Name of the resource or skill group.                 |
| Contact Queuing Criteria      | Algorithm used to order the queued calls (contacts). |
| Resource Pool Selection Model | The resource selection criteria chosen for this CSQ. |
| Resource Pool                 | The skills or resource group used for this CSQ.      |
| CSQ Type                      | The type of the CSQ.                                 |
| Delete                        | Deletes the selected CSQ.                            |

**Step 2** Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the window.

The Contact Service Queue Configuration web page opens.

**Note** If this link does not appear on the page, it means that the system has reached the maximum number of CSQs that can be created. The CSQ Summary page displays the total number of created CSQs.

**Step 3** Use the Contact Service Queue Configuration web page to specify the various fields. For more information on the fields, see **Contact Service Queue Configuration Web Page**.

**Step 4** Click **Next**.

The second Contact Service Queue Configuration area opens with the newly-assigned CSQ Name.

**Step 5** Select an option from the Resource Selection Criteria drop-down menu.

**Note** The Resource Pool Selection Model settings determine the options available in this drop-down menu.

- **Longest Available**—Selects the agent who has been in the Available state for the longest amount of time.
- **Most Handled Contacts**—Selects the agent who has handled the most calls.
- **Shortest Average Handle Time**—Selects the agent who generally spends the least amount of time talking to customers.
- **Most Skilled**—Used for expert agent call distribution. Selects the agent with the highest total competency level. The total competency level is determined by adding the agent's competency levels for each of their assigned skills that are also assigned to the CSQ.
  - Example 1: If Agent1 is assigned Skill1(5), Skill2(6), and Skill3(7) and CSQ1 specifies Skill1(min=1) and Skill3(min=1), the total competency level for Agent1 for CSQ1 is 12.
  - Example 2: If Agent1 is assigned Skill1(5) and Skill2(6) and Skill3(7) and CSQ1 specifies Skill1(min=1), only, the total competency level for Agent1 for CSQ1 is 5.
- **Least Skilled**—Used for expert agent call distribution. Selects the agent with the lowest total competency level. The total competency level is determined by adding the agent's competency level in each assigned skill.
- **Most Skilled by Weight**— Used for expert agent call distribution. Selects the agent with the highest total competency level multiplied by the skill's associated weight.
- **Least Skilled by Weight**—Used for expert agent call distribution. Selects the agent with the lowest total competency level multiplied by the skill's associated weight.
- **Most Skilled by Order**— Used for expert agent call distribution. Selects the agent with the highest total competency level in the ordered list.
- **Least Skilled by Order**— Used for expert agent call distribution. Selects the agent with the lowest total competency level in the ordered list.

**Note** If two or more agents have equal competency level, the selection automatically defaults to **Longest Available** selection criteria.

**Step 6** Specify the following settings, as necessary:

**Note** The Resource Pool Selection Model setting determines the availability of these options.

- a) Use the Select Skills list to highlight the skills you want; click the **Add** button next to the list.
- b) Specify a Minimum Competence Level for the skills assigned to the CSQ. Depending on the Resource pool criteria you chose, specify a Weight value between 1 and 1000.
- c) If the Resource Selection Criteria is Most Skilled by Order or Least Skilled by Order, use the arrow icons to order the skills by moving them up or down in the list.

**Note** Use the **Delete** icon next to a skill to delete that skill from the Skills Required list.

**Step 7** If you selected one of the Least/Most Skilled options as shown in the list below for the Resource Selection Criteria, you can view the agent order using **Show Resources** icon or button.

**Note** The order of the agents determines the priority, with the agent at the top of the list having the highest priority.

To change the order of the agents belonging to the CSQ, you should modify the skill set of the agents. The Least/Most Skilled Resource Selection Criteria option comprises the following:

- a) Most Skilled
- b) Least Skilled
- c) Most Skilled by Order
- d) Least Skilled by Order
- e) Most Skilled by Weight
- f) Least Skilled by Weight

**Step 8** If you selected *Resource Groups* as the Resource Pool Selection Model on the previous page, follow these steps:

- a) Select an option from the Resource Selection Criteria drop-down menu.
  - **Longest Available**—Selects the agent who has been in the Available state for the longest amount of time.
  - **Linear**—Selects the next available agent with the highest priority, as determined by the agent order in the Resources list.
  - **Circular**—Selects the next available agent with the highest priority, based on the last agent selected and the agent order in the Resources list.
  - **Most Handled Contacts**—Selects the agent who has handled the most calls.
  - **Shortest Average Handle Time**—Selects the agent who generally spends the least amount of time talking to customers.
- b) Choose the resource group for this CSQ from the Resource Group drop-down menu.
- c) Click **Show Resources** icon to show all agents who meet the specified criteria.
- d) If you selected *Linear* or *Circular* as the Resource Selection Criteria, if necessary, rearrange the order of agents in the Resources list by highlighting an agent and using the up and down arrows to move the agent in the list.
- e) Click **Add** to apply changes and update the system.

The new CSQ is now displayed, and all agents who belong to the resource group or all selected skill groups are now a part of this CSQ.

## Contact Service Queue Configuration Web Page

Contact Service Queue Configuration web page:

| Field                      | Description                                                                                                                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Contact Service Queue Name | Enter a meaningful name that is concise, yet easy to recognize (for example, Language Experts). This is a mandatory field. |
| Contact Service Queue Type | Display only. Voice—Agents in this CSQ can handle inbound and outbound voice calls.                                        |

| Field                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact Queuing Criteria      | Display only. Displays the criteria used for queuing the contacts. For example, First In, First Out (FIFO).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Automatic Work                | Determines whether agents handling calls that are routed through this CSQ automatically enter the Work state when a call ends. This field is mandatory. Options are: <ul style="list-style-type: none"> <li>• Enabled—Agents belonging to a CSQ that has the Automatic Work option enabled enter the Work state automatically when a call that is allocated from this CSQ ends. If agents belonging to a CSQ that has the Automatic Work option disabled handle transferred calls that were originally delivered by a CSQ that has Automatic Work enabled, they also enter the Work state automatically when a call ends.</li> <li>• Disabled (default)—Agents enter Ready or Not Ready state when a call ends, depending on the Automatic Available setting.</li> </ul> |
| Wrapup Time                   | Determines the length of the Work state for this CSQ when a call ends. Options are: <ul style="list-style-type: none"> <li>• Enabled button with Seconds field—The Seconds field specifies the length of the Work state phase.</li> <li>• Disabled—No limit on how long the agent can stay in the Work state.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Resource Pool Selection Model | Select one of the following options from the drop-down menu: <ul style="list-style-type: none"> <li>• Resource Skills—To create a skills-based CSQ.</li> <li>• Resource Group—To create a resource group-based CSQ.</li> </ul> This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Service Level                 | The target maximum number of seconds a call is queued before it is connected to an agent. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Service Level Percentage      | The target goal for percentage of contacts that meet the service level. This is a mandatory field.<br><br>For example, a call center that has a service level of 20 and a service level percentage of 80 percent has a goal of answering 80 percent of its calls within 20 seconds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Modify a Contact Service Queue



**Note** Changes take effect when all agents affected by the changes have left the Ready state. Emails Contact Service Queues cannot be modified. It is for display only.

To modify an existing CSQ, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**.  
The Contact Service Queues web page opens.
- Step 2** In the Name list, click the CSQ that you want to modify.  
The Contact Service Queue Configuration page opens.
- Step 3** Modify the Contact Service Queue Configuration information as necessary.
- Note** If you change an existing CSQ name, the old name still exists in the HR reports and the CSQ is not removed even if all the data is purged.
- Step 4** Click **Next** icon that displays in the tool bar in the upper, left corner of the window or the **Next** button that displays at the bottom of the window to view and update the remaining fields.
- Step 5** Click **Update** icon in the top of the window or the **Update** button that displays at the bottom of the window to apply the modifications.
- Note** Ensure that the **Resource Selection Criteria** is changed only when there are no agents signed in. If there are active agents, these changes take effect only when all the active agents sign out and sign in again.
- 

## Delete a Contact Service Queue

When you delete a CSQ, any skills or resource groups assigned to that CSQ are automatically removed from the CSQ, and any application using that CSQ can no longer access it. Before deleting the CSQ, change the applications to use a different CSQ. If the application is using a CSQ when the CSQ is deleted, new incoming calls will get an error and existing queued calls will not be routed to agents.



- Note**
- Existing Email Contact Service Queues can be deleted.
- 

To delete a CSQ, complete the following steps.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Contact Service Queues**.  
The Contact Service Queues web page opens.
- Step 2** Click the **Delete** icon next to the name of the CSQ that you want to delete.

**Note** You can also delete a CSQ from its Contact Service Queue Configuration page using the Delete icon or button.

## Resource Pool Selection Criteria: Skills and Groups

The resource selection criteria available for CSQs with Resource *Skills* is different from that of CSQs with Resource *Groups*.

Example—In a banking application with two skills (Banking and CreditCard) and one Resource Group (General Queries), assume that the following agents, skills, and resource groups are defined:

| Agent ID | Assigned Skills                                                  | Resource Group |
|----------|------------------------------------------------------------------|----------------|
| Agent1   | Banking (Competence Level 10)<br>CreditCard (Competence Level 6) | GeneralQueries |
| Agent2   | Banking (Competence Level 5)<br>CreditCard (Competence Level 10) | GeneralQueries |
| Agent3   | None                                                             | GeneralQueries |

In addition, suppose you had the following Contact Service Queue information defined:

**Table 1: Agent Skill and Resource Group Settings**

| CSQ Name | Resource Pool Selection Model | Resource Selection Criteria | Skill/Competence                | Available Agents           |
|----------|-------------------------------|-----------------------------|---------------------------------|----------------------------|
| CSQ1     | Resource Skills               | Most Skilled                | BankingMinimum competency: 5    | Agent1<br>Agent2           |
| CSQ2     | Resource Skills               | Most Skilled                | CreditCardMinimum competency: 5 | Agent1<br>Agent2           |
| CSQ3     | Resource Group                | Longest Available           | GeneralQueries                  | Agent1<br>Agent2<br>Agent3 |

In this scenario, if a caller calls with a question about CreditCard information and there are no CSQs currently available with CreditCard skills (that is, Agent1 and Agent2), there is a possibility for Agent3—who has no CreditCard skill—to get selected as the Longest Available Agent.

To avoid such a situation, you could design the script to always look into CSQ2 for available agents since it has the highest competency of 10 for CreditCard, and agent selection here is based on most skilled.





**Note** If two or more agents have equal competency level, the selection automatically defaults to **Longest Available** selection criteria.

## Resource Skill Selection Criteria within a Contact Service Queue

Resource selection *within* a CSQ is based on the resource competency levels of the skills associated to the CSQ. You can choose between the most and least skilled.

The Unified CCX system defines a Level 10 competency to be the highest skill level, while a Level 1 denotes the lowest skill level. When more than one skill is involved, each skill is given the same weight, meaning no preference is given to any skill. A comparison is performed on the sum of all the competency levels for the associated skills. (Skills assigned to resources but not associated to the CSQ are ignored.) In the case of a tie when skill competencies are equal, the resource that has been ready for the longest amount of time will be chosen.

The following table provides examples of how Unified CCX selects resources within a CSQ.

**Table 2: Resource Skill Selection Criteria**

| Example                                | CSQ Skills                                                                                                                                                                                                                                                | Agent Competency Levels                                                                                  | Sequence Agents Become Ready | Selection Order |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|-----------------|
| Most skilled resource selection model  | Technical Support                                                                                                                                                                                                                                         | Agent A = 10<br>Agent B = 10<br>Agent C = 5                                                              | A, B C                       | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, A, B                      | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | A, C, B                      | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, B, A                      | B, A, C         |
| Least skilled resource selection model | Technical Support                                                                                                                                                                                                                                         | Agent A = 10<br>Agent B = 10<br>Agent C = 5                                                              | A, B, C                      | C, A, B         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, A, B                      | C, A, B         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | A, C, B                      | C, A, B         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, B, A                      | C, B, A         |
| <b>Note</b>                            | The ordering in the two examples above are not opposite because the selection criteria has changed from most to least skilled—when competency levels are equal, both selection models choose the resources that have been available for the longest time. |                                                                                                          |                              |                 |
| Most skilled resource selection model  | SalesSupport                                                                                                                                                                                                                                              | Agent A = Sales (10) Support (5)<br>Agent B = Sales (5), Support (10)<br>Agent C = Sales (5) Support (1) | A, B, C                      | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, A, B                      | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | A, C, B                      | A, B, C         |
|                                        |                                                                                                                                                                                                                                                           |                                                                                                          | C, B, A                      | B, A, C         |

| Example                                | CSQ Skills   | Agent Competency Levels           | Sequence Agents Become Ready | Selection Order |
|----------------------------------------|--------------|-----------------------------------|------------------------------|-----------------|
| Least skilled resource selection model | SalesSupport | Agent A = Sales (10) Support (5)  | A, B, C                      | C, A, B         |
|                                        |              | Agent B = Sales (5), Support (10) | C, A, B                      | C, A, B         |
|                                        |              | Agent C = Sales (5) Support (1)   | A, C, B                      | C, A, B         |
|                                        |              |                                   | C, B, A                      | C, B, A         |

## Configure Agent-Based Routing

Agent-based routing provides the ability to send a call to a *specific* agent, rather than any agent available in a CSQ.

Use the Agent Based Routing Settings web page to configure system-wide parameters to be used in an agent-based routing application.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Agent Based Routing Settings**. The Agent Based Routing Settings area opens.

**Note** The Agent Based Routing Settings are available only if you are using Unified CCX Enhanced or Premium license packages.

**Step 2** Specify the following fields:

| Field            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automatic Wrapup | <p>Determines whether agents handling calls that are routed through this CSQ automatically enter the Automatic Wrapup state when a call ends.</p> <ul style="list-style-type: none"> <li>• <b>Enabled</b>—Agents associated to a CSQ that has the Automatic Wrapup option enabled enter the Wrapup state automatically when on a call. If agents are associated to a CSQ that has the Automatic Wrapup option disabled handle transferred calls that were originally delivered by a CSQ that has Automatic Wrapup enabled, they also enter the Wrapup state automatically when a call ends.</li> <li>• <b>Disabled (default)</b>—Agents enter Ready or Not Ready state when a call ends, depending on the Automatic Available setting.</li> </ul> |

| Field       | Description                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wrapup Time | <p>Determines if agents automatically enter Wrapup when a call ends.</p> <ul style="list-style-type: none"> <li>• Enabled button with seconds field—Controls how long the agent can stay in the Wrapup state if Automatic Wrapup is enabled. The seconds field specifies the Wrapup time length.</li> <li>• Disabled (default)—No limit of how long the agent can stay in the Wrapup state if Automatic Wrapup is enabled.</li> </ul> |

- Step 3** Click **Save** icon that displays in the tool bar in the upper, left corner of the window or the **Save** button that displays at the bottom of the window to apply changes.

## Wrap-Up Data Usage

Contact centers use wrap-up data to track the frequency of activities or to identify the account to which a call is charged, and other similar situations. Like reason codes, wrap-up data descriptions are set up by your system administrator to reflect the needs of your contact center. By default this feature is disabled.

## Teams Configuration

A *team* is a group of agents who report to the same supervisor. A team can have one primary supervisor and optional secondary supervisors. A supervisor can also monitor CSQs that are assigned to the team being supervised.

*Barge-in* is when a supervisor joins an existing call between an agent and a customer.

*Intercept* is when the supervisor joins a call and drops the agent from the call.

A *default team* is automatically created by the system and cannot be deleted. If agents are not assigned to any team, they belong to the default team. When an agent is assigned to a team, the team supervisor can barge-in and intercept any call being handled by the agent.



**Note** Before creating a team, you must set up supervisors using the User Management page.



**Note** A team that accesses Live Data reports should be limited to 50 agents.

## Assign Supervisor Privilege to a User

Perform the following procedure to assign supervisor privilege to a user.

### Procedure

---

- Step 1** From the Unified CCX Administration menu, choose **Tools > User Management > User View**.  
The User Configuration page displays the list of all users.
- Step 2** Click the user to whom you want to assign supervisor capability.  
The User Configuration page displays information about that user. In the Capabilities section, the left pane displays the list of assigned capabilities and the right pane displays the list of capabilities.
- Step 3** Using the left arrow, assign Supervisor capability.
- Step 4** Click **Update** to save your changes.
- 

Agents, who have logged in must logout and login again to use supervisor specific features.

For agents with chat or email skill, who have logged in, it may take maximum of 30 mins to reflect the change.

## Create Team Supervisor

Perform the following procedure to create team supervisor:

### Procedure

---

- Step 1** From the Unified CCX Administration menu, choose **Subsystems > RmCm > Teams**.  
The Team page displays the list of all teams.
- Step 2** Click the team for which you want to create a supervisor.  
The Team Configuration page displays the configuration information about the team.
- Step 3** From the **Primary Supervisor** drop-down list, select the primary supervisor for the team.
- Step 4** (Optional) If you want to assign a secondary supervisor, select the supervisor from the **Available Supervisors** pane and then click the left arrow.
- Step 5** Click **Save**.
- 

## Create Teams

Use the Teams area of the RmCm Configuration web page to create or associate teams with various agents, CSQs, and supervisors.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Teams**.

- Step 2** Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the window.
- The Team Configuration page appears.
- Step 3** Click **Add** to apply changes.
- 

## Modify Agents on Teams

Use the Teams area to add agents or change agents on an existing Team.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Teams**.
- The Teams web page opens.
- Step 2** Click a name in the **Team Name** column
- The Team Configuration page appears.
- Step 3** Select an agent name in the **Resources Assigned to other Teams** list and use the arrow icon to move it into the **Assigned Resources** list if you want to add an agent to this team.
- To remove an agent from this team, select an agent name in the **Assigned Resources** list and use the arrow icon to move it into the **Resources Assigned to other Teams** list. This agent now belongs to the default team.
- Step 4** Click **Update** to apply changes.
- 

## Delete a Team

Use the Teams area of the RmCm Configuration web page to delete an existing Team.

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > RmCm > Teams**.
- The Teams web page opens.
- Step 2** Click the **Delete** icon beside the Team Name icon you want to delete.
- The system prompts you to confirm the delete.
- Step 3** Click **OK**.
-





## CHAPTER 9

# Provision of Additional Subsystems

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To provision additional subsystems, you must complete the following tasks:

- Log into the Unified CCX Administration.
- Provision your telephony and media resources.
- Provision your Unified CCX subsystem, if required.

The following sections introduce the additional Unified CCX subsystems and explain how to provision them.

- [About Additional Subsystems, on page 111](#)
- [Provision of HTTP Subsystem, on page 112](#)
- [Provision of Database Subsystem, on page 113](#)
- [Provision eMail Subsystem, on page 116](#)

## About Additional Subsystems

Your Unified CCX system may include some or all of the following additional subsystems:

- The HTTP subsystem—The Unified CCX system uses the HTTP subsystem to enable Unified CCX applications to respond to requests from a variety of web clients, including computers and IP phones.
- The Database subsystem—The Unified CCX system uses the Database subsystem to enable Unified CCX applications to interact with customer-provided enterprise database servers to make database information accessible to contacts.
- The eMail subsystem—The Unified CCX system uses the eMail subsystem to communicate with your email server and enable your applications to create and send email.

If you plan to run applications that use any of the additional Unified CCX subsystems included in your Unified CCX package, you should now provision those subsystems. The Unified CCX system uses these additional subsystems to communicate with supporting systems such as web servers, database servers, and email servers.



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**Note** You need to provision a particular subsystem only if you are using Unified CCX applications that require it.

---

## Provision of HTTP Subsystem



**Note** The HTTP subsystem is available if your system has a license installed for one of the following Cisco product packages: Unified IP IVR or Unified CCX Premium.

The Unified CCX system uses the HTTP subsystem to enable Unified CCX applications to respond to requests from a variety of web clients, including computers and IP phones.



**Note** If you are not using HTTP applications, you do not need to provision the HTTP subsystem.

The Unified CCX system uses subdirectories in the Unified CCX installation directory to store text substitution, eXtensible Style Language (xsl) templates, static and dynamic web pages, and Java Servlet Pages (JSPs).



**Note** Use the Document Management page to upload these documents.

To provision the HTTP subsystem, you need to provision HTTP triggers. HTTP applications use triggers to activate the application in response to an incoming HTTP message.



**Note** You cannot change the TCP/IP port numbers used by the HTTP subsystems or triggers in Unified CCX.

## Configure HTTP Triggers

You need to create an application using **Applications > Application Management** menu from the Unified CCX Administration menu bar. After you create an application, you can configure HTTP triggers for the application using the following procedure.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > HTTP**.

The HTTP Trigger Configuration web page opens.

**Step 2** Specify the following fields:

| Field | Description                                 |
|-------|---------------------------------------------|
| URL   | The relative URL.<br>For example:<br>/hello |



| Field            | Description                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application Name | Select an application for which you want to add a HTTP trigger from this list box.                                                                                                                |
| Sessions         | The maximum amount of simultaneous sessions (instances) that the application can handle.                                                                                                          |
| Enabled          | Click the required radio button to accept - <b>Yes</b> (the default).<br><br><b>Note</b> If you disable the trigger, the user receives an error message when browsing to the defined trigger URL. |

**Step 3** Click **Add New**.

The HTTP Trigger Configuration web page closes, and the trigger information appears on the HTTP Trigger Configuration summary web page.

You are now ready to provision any additional subsystems your Unified CCX applications require or to begin configuring Unified CCX applications.

## Provision of Database Subsystem



**Note** The Database subsystem is available if your system has a license installed for either the Unified IP IVR or Unified CCX Premium product packages. If you are not using Unified CCX applications that require access to databases, you do not need to provision the Database subsystem.

The Unified CCX system uses the Database subsystem to enable Unified CCX applications to interact with database servers to make database information accessible to contacts.



**Caution** The Database subsystem does not support database views or execute store procedures.

## Database Subsystem Configuration

The Database subsystem enables the Unified CCX applications to obtain information from data sources, which are databases configured to communicate with the Unified CCX system. You can connect the Unified CCX system with enterprise databases such as Microsoft SQL Server, Sybase, Oracle, or IBM DB2.

You can upload JDBC driver files using **Subsystems > Database > Drivers** menu option.



**Note** To determine a list of enterprise databases supported for the Database subsystem, see the Unified CCX Compatibility related information, located at: <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>.

## Add New Datasource

After uploading the JDBC driver, you need to use this to create the datasource in the Database subsystem.

To add a new data source, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Database > DataSource**. Click **Add New** icon that displays in the tool bar in the upper, left corner of the window or the **Add New** button that displays at the bottom of the page.

The Datasource Configuration web page opens. For more information on the web page fields, see **Datasource Configuration Web Page**.

**Step 2** Click **Add** to save the changes.

The Enterprise Database Subsystem Configuration web page opens. You are now ready to provision any additional subsystems your Unified CCX applications require or to begin configuring Unified CCX applications.

## Datasource Configuration Web Page

Datasource Configuration web page.

| Field                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Source Name              | Data source name for referring to the datasource. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| User Name                     | Username defined for connecting to the enterprise database. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Password                      | Password defined for connecting to the enterprise database.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Confirm Password              | Re-enter the password that you provided in the Password field.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Maximum Number of Connections | Maximum number of connections allowed to connect to the database.<br><br>This database is usually an external database to which the customer script can connect. While the limit is set by that database and governed by your license, if this number in this setting is exceeded, the corresponding workflow is aborted and the caller receives an error message. However, you can avoid this error by configuring the appropriate number of sessions in the corresponding script or application. Also, the script writer can provide information about how many connections are used per call (or instance of application). This is a mandatory field. |
| Driver                        | Displays the list of available drivers for the enterprise database. One or more datasources can use the same driver. Select a driver for this datasource from this list box. This is a mandatory field.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Field    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| JDBC URL | <p>JDBC URL that is used to obtain a connection to the enterprise database. This is a mandatory field. The JDBC URL provided will be used by Unified CCX to connect to the enterprise database using JDBC. The URL to be used is dependent on the database you are connecting. The examples provided in the Datasource Configuration web page can be used as a reference to define the URL. Refer to the driver documentation for more information.</p> <p><b>Note</b></p> <ul style="list-style-type: none"> <li>If the test connection fails for Oracle JDBC drive connection, try the following connection url:<br/>jdbc:oracle:thin:[user/password]@[host][[:port]:SID</li> <li>Encrypted connections to enterprise database servers are not supported.</li> </ul> |

## Poll Database Connectivity

To poll connectivity to the database on a periodic basis, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Database > Parameters**.

The Parameters web page opens to display the parameter-related fields.

**Step 2** Specify the following fields:

| Field                | Description                                                                                                                             |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| RetryConnectInterval | Specifies the interval between two connection attempts when a data source is initialized. The default is 15,000 milliseconds.           |
| NumAttempt           | Specifies the number of attempts to establish connections to the database when a data source is initialized. The default is 3 attempts. |
| LoginTimeout         | Sets the maximum time in seconds that a driver will wait while attempting to connect to a database. The default is 0 (disabled).        |

**Step 3** Click **Update** to apply changes (or **Reset to Default** if you prefer to retain the default values).

The window refreshes and Unified CCX updates the parameters with your changes. You are now ready to provision any additional subsystems your Unified CCX applications require or to begin configuring Unified CCX applications.

# Provision eMail Subsystem



**Note** The eMail subsystem is available if your system has a license installed for one of the following Cisco product packages: Unified IP IVR or Unified CCX Premium.

The Unified CCX system uses the eMail subsystem to communicate with your email server and enable your applications to create and send email. You must provision the eMail subsystem if you intend to create scripts that use messaging steps to create and send email.



**Tip** If your email system is configured to receive acknowledgments, you should process the mailbox you identify in your configuration to determine whether or not an email was successfully sent.

The email configuration process identifies the default email address and server to be used for sending email (including e-pages and faxes) and for receiving acknowledgments.



**Note** If you are not using email applications, you do not need to provision the eMail subsystem.

Complete the following steps.

## Procedure

**Step 1** Choose **Subsystems > eMail**.

The eMail Configuration web page opens.

**Step 2** Specify the following fields:

| Field         | Description                                                                                                                                                                                                                                 |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mail Server   | A fully-qualified email server name. (Example: server.domain.com)                                                                                                                                                                           |
| email Address | An existing fully qualified e-mail address for the administrative account.<br>Example: administrator@domain.com<br><b>Note</b> Unified CCX supports alphanumeric IDs and special characters (only hyphen "-", underscore "_", and dot "."). |

**Step 3** Click **Update**.

The Unified CCX system saves your changes and the Unified CCX Administration web page opens.

**Note** Cisco does not currently support multiple email configurations. To remove the email information, you must erase the fields and click **Update**.

You are now ready to provision any additional subsystems your Unified CCX applications require, or to begin configuring Unified CCX applications.

---





## CHAPTER 10

# Management of Prompts, Grammars, Documents, and Custom Files

---

Unified CCX applications can make use of many auxiliary files that interact with callers, such as scripts, pre-recorded prompts, grammars, and custom Java classes.

To manage these auxiliary files, you must complete the following tasks:

- Provision telephony and media resources.
- Provision Unified CCX subsystem, if required.
- Provision additional subsystems, if required.
- Configure Cisco script applications.

Depending on your particular Unified CCX implementation, your applications might make use of some or all of the file types described in the following sections.

- [Manage Prompt Files, on page 119](#)
- [Manage Grammar Files, on page 121](#)
- [Manage Document Files, on page 122](#)
- [Language Management, on page 123](#)
- [Upload of Prompt Files, on page 126](#)
- [Management of Custom Files, on page 129](#)
- [AAR File Management, on page 129](#)

## Manage Prompt Files

Many applications make use of pre-recorded prompts stored as .wav files, which are played back to callers to provide information and elicit caller response.

Several system-level prompt files are loaded during Unified CCX installation. However, any file you create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the prompt, grammar, and document files are created, stored, and updated.



**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk prompt files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Prompt Management page, perform the following steps:

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Application > Prompt Management**.

**Step 2** The Prompt Management web page opens to display the following fields and buttons.

| Field or Button  | Description                                                                                                                                                                                                                |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Language         | Lists the location of the items listed in the Name column.                                                                                                                                                                 |
| Folder           | Path of the current item selected in the Name column with respect to the root folder.                                                                                                                                      |
| Name             | Name of the language.                                                                                                                                                                                                      |
| Size             | The size of the prompt file prefixed with KB. The file size is converted from bytes to KB.<br><b>Note</b> This column is usually blank on the root page because the items on this page are usually folders.                |
| Date Modified    | The date and time when the document was last uploaded or changed along with time zone.                                                                                                                                     |
| Modified by      | The user ID of the person who performed these modifications.                                                                                                                                                               |
| Delete           | Click <b>Delete</b> icon to remove the folder and its contents from the repository.                                                                                                                                        |
| Rename           | Click <b>Rename</b> icon to rename the folder in the repository.                                                                                                                                                           |
| Refresh          | Click <b>Refresh</b> icon to refresh the folder in the repository.                                                                                                                                                         |
| Create Language  | Displays a dialog box that lets you create a new language folder.                                                                                                                                                          |
| Upload Zip Files | Displays a dialog box that lets you locate and upload a zip file.<br><b>Note</b> The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders. |

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a new subfolder or upload a new prompt.



# Manage Grammar Files

The Unified CCX system uses specific grammars when recognizing and responding to caller response to prompts. A grammar is a specific set of all possible spoken phrases and Dual Tone Multi-Frequency (DTMF) digits to be recognized by Unified CCX applications and acted upon during run time.

Several system-level grammar files are loaded during Unified CCX installation. However, any file *you* create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the grammar files are created, stored, and updated.



**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk grammar files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Grammar Management page, perform the following steps:

## Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Applications > Grammar Management**.

**Step 2** The Grammar Management web page opens to display the following fields and buttons.

| Field or Button | Description                                                                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Language        | Lists the location of the items listed in the Name column.                                                                                                                                      |
| Folder          | Path of the current item selected in the Name column with respect to the root folder.                                                                                                           |
| Codec           | The codec chosen during installation for this Unified CCX server. Display only.                                                                                                                 |
| Name            | Name of the language folder.                                                                                                                                                                    |
| Size            | The size of the grammar file prefixed with KB. The file size is converted from bytes to KB.<br><br>This column is usually blank on the root page as the items on this page are usually folders. |
| Date Modified   | The date and time when the document was last uploaded or changed along with time zone.                                                                                                          |
| Modified by     | The user ID of the person who performed these modifications.                                                                                                                                    |
| Delete          | Displays a dialog box that lets you delete an existing language folder.                                                                                                                         |

| Field or Button  | Description                                                                                                                                                                                                                           |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rename           | Displays a dialog box that lets you rename an existing language folder.                                                                                                                                                               |
| Refresh          | Refreshes the specified folder in the repository.                                                                                                                                                                                     |
| Create Language  | Displays a dialog box that lets you create a new language folder.                                                                                                                                                                     |
| Upload Zip Files | <p>Displays a dialog box that lets you locate and upload a zip file.</p> <p><b>Note</b> The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders.</p> |

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a subfolder or upload a new Prompt, Grammar, or Document.

## Manage Document Files

Documents might consist of .txt, .doc, .jsp, or .html files. Documents can also include custom classes and Java Archive (JAR) files that allow you to customize the performance of your Unified CCX system.

Several system-level document files are loaded during Unified CCX installation. However, any file you create needs to be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the document files are created, stored, and updated.



**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

The Unified CCX Server's local disk document files are synchronized with the central repository during Unified CCX Engine startup and during run-time when the Repository datastore is modified.

To access the Document Management page, perform the following steps:

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Document Management**.
- Step 2** The Document Management web page opens to display the following fields and buttons.

| Field or Button  | Description                                                                                                                                                                                                                    |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Language         | Lists the location of the items listed in the Name column.                                                                                                                                                                     |
| Folder           | Path of the current item selected in the Name column with respect to the root folder.                                                                                                                                          |
| Name             | Name of the language folder.                                                                                                                                                                                                   |
| Size             | The size of the grammar file prefixed with KB. The file size is converted from bytes to KB.<br><br>This column is usually blank on the root page as the items on this page are usually folders.                                |
| Date Modified    | The date and time when the document was last uploaded or changed along with time zone.                                                                                                                                         |
| Modified by      | The user ID of the person who performed these modifications.                                                                                                                                                                   |
| Delete           | Displays a dialog box that lets you delete an existing language folder.                                                                                                                                                        |
| Rename           | Displays a dialog box that lets you rename an existing language folder.                                                                                                                                                        |
| Refresh          | Refreshes the specified folder in the repository.                                                                                                                                                                              |
| Create Language  | Displays a dialog box that lets you create a new language folder.                                                                                                                                                              |
| Upload Zip Files | Displays a dialog box that lets you locate and upload a zip file.<br><br><b>Note</b> The zip file must contain language folders in the root directory. Be sure to place the grammar files in folders and then zip the folders. |

When you click a hyperlink (if configured) in the Name folder column, a secondary page appears. From this page, you can create a subfolder or upload a new Prompt, Grammar, or Document.

## Language Management

The topics in this section describe the procedure for managing languages.

## Create New Language

Follow this procedure to create a new Prompt, Grammar, or Document language folder in the Repository datastore:

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Prompt Management** or **Grammar Management** or **Document Management**.
- The corresponding Management web page opens.
- Step 2** Click **Create New Folder** or **Create Language** icon that displays in the tool bar in the upper, left corner of the window or the **Create New Folder** or **Create Language** button that displays at the bottom of the window.
- The Create New Folder or Create Language dialog box opens.
- Step 3** Perform any one of the following actions:
- Select a value from the Language drop-down list.
  - If you are unable to find a particular language or if the Language drop-down list is empty, click **Edit** button to add a new Language. The Explorer User Prompt dialog box opens. Enter the name of the new language in the Language Name field and click **OK**.
- Step 4** Click **Create**.
- A new language folder Name appears on the summary web page.
- 

## Rename Language

Follow this procedure to rename a Prompt/Grammar/Document language folder in the Repository datastore:

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Prompt Management** or **Grammar Management** or **Document Management**.
- The corresponding Management web page opens.
- Step 2** Select the **Rename** icon against the folder you want to rename.
- The Rename Folder dialog box opens.
- Step 3** From the Select Language Folder To Rename field, choose the name of the folder to be renamed.
- Step 4** In the Rename Folder To field, enter the new name.
- Step 5** Click **Rename**.

The web page then refreshes itself to provide a summary and status. Click **Return to Document Management** to navigate to the respective Prompt or Grammar or Document Management page.

---

## Delete Language

Follow this procedure to delete a Prompt/Grammar/Document language folder in the Repository datastore:

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Prompt Management** or **Grammar Management** or **Document Management**.
- The corresponding Management web page opens.
- Step 2** Select the **Delete** icon against the respective folder, that you want to delete.
- A dialog box opens to confirm the Delete action for the specific folder.
- Step 3** Click **OK** to delete.
- 

## Upload Zip Files to Language Folder

In addition to adding Prompt or Document files individually, you can upload multiple files from a Zip file.



**Note** The maximum upload file size is 20 MB, whether it is a single file or a Zip file.

---



**Tip** Be sure to upload (or download) large zip files in Prompt, Grammar and Document Management pages during off-peak hours.

---

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Prompt Management** or **Grammar Management** or **Document Management**.
- The corresponding Management web page opens.
- Step 2** Click **Upload Zip Files** icon that displays in the tool bar in the upper, left corner of the window or the **Upload Zip Files** button that displays at the bottom of the window to upload a new prompt or zip file.
- The Upload Document dialog box opens.
- Step 3** Enter the path for the script file or click **Browse** to locate the script or the zip file containing the script files. Select the required script file and click **Open**.

**Note** You can upload only files with extension .aef or .zip.

**Step 4** Click the **Upload** button to upload the new script to the repository. A dialog box confirms the successful upload of the files.

**Note** If you try to upload invalid script files, the upload will be unsuccessful and an error message will be displayed on the upload dialog box. You can also create user-defined directories using “Create a New folder” option and uploads scripts to those directories.

**Step 5** By default, the files are unzipped after uploading. If you want to change this option, uncheck the **Unzip after uploading** check box.

**Caution** In the Documents Management summary web page, you have the option to zip or to unzip the file before uploading. By default, this check box is checked to unzip the file before uploading. Ensure to uncheck the check box if you want to upload it as a zipped file.

The maximum upload file size of the Zip file is 20 MB.

**Step 6** The contents of the zip file is uploaded to the folder. On successful uploading of the zip file, the status icon is updated accordingly. Click **Return to Document Management** button to go back to the respective Management web page.

## Upload of Prompt Files

Prompts are messages that the Unified CCX system plays back to callers. Unified CCX applications often use prompts to elicit caller response so that the Unified CCX system can transfer calls, receive account information, and perform other functions.

To use prompts in your Unified CCX applications, you must first create a folder to store them. You can then record and upload new user prompts, delete prompts, and modify existing prompts.

You store pre-recorded prompts as .wav files. The Unified CCX system also allows users to record spoken names, which you can upload to be used in the playback of prompts.



**Note** Unified CCX supports audio playback of RIFF header .wav files only though your MRCP vendor might support multiple .wav file header formats.

ScanSoft uses RIFF headers. When generating a wav file prompt specifically for Nuance, be sure to consider the server playing the prompt:

- If the prompt is played by the Nuance Speech Server, the .wav file requires a SPHERE header.
- If the prompt is played by the Unified CCX server, the .wav file requires a RIFF header.

Nuance provides a tool to convert .wav files from RIFF headers to SPHERE headers.

Managing prompts can include one or more of the following activities:

- Creating a folder: You must create a folder to store the .wav files that the Unified CCX system uses as prompts.

- Recording a prompt: You can record your own prompts to be used in applications.
- Upload one or more prompts: You can replace any of the stored prompts used by Cisco script applications with a different .wav file by uploading the new.wav file. If necessary, you can also add spoken name prompts. Some Unified CCX applications play back the pre-recorded names of the people that callers are trying to reach, to allow the caller to confirm the transfer of the call.

## Record a Prompt

You can record your own prompts to be used in applications. The example provided in this section uses the Windows Sound Recorder option. This option is one of many possibilities for recording G711 prompts. G711 is a freely distributed public domain codec and has several recording options. Some of these options are included in Microsoft Windows systems and are available to any sound recording application.

The G729 codec is licensed and is not freely distributed. A white paper that describes the G729 prompt recording options is available on request. Send an email to [apps-support@cisco.com](mailto:apps-support@cisco.com) to obtain a copy of this white paper. To record a prompt, complete the following steps.

The following procedure is an example of recording G.711 prompts with Microsoft Windows Sound Recorder, using a microphone plugged into your computer. If you are not using Microsoft Windows Sound Recorder, see the documentation provided with your audio application.

### Procedure

---

- Step 1** From your Windows Start menu, choose **Start > Programs > Accessories > Entertainment > Sound Recorder**.
- The Sound Recorder dialog box opens.
- Step 2** Click the **Record** button and speak your greeting into the microphone.
- Step 3** Click the **Stop** button when you finish recording.
- Step 4** To check your greeting, click the **Rewind** button or drag the slider back to the beginning of the recording. Then click the **Play** button.
- Step 5** When you are satisfied with your greeting, choose **File > Save As**.
- The Save As window opens.
- Step 6** Click Change to set the recording options.
- You can also set recording properties by choosing Properties from the Sound Recorder File menu.
- The Sound Selection dialog box opens.
- Step 7** From the Format drop-down menu, choose one of the following options based on the prompts selected during the installation of Unified CCX software:
- If you selected G711 prompts, **CCITT u-Law**.
  - If you selected G729 prompts, see your G.729 white paper.

**Note** The instructions in this procedure assume that, during Unified CCX installation, you configured Unified CCX to use the G.711 codec for prompts. If this assumption is incorrect, and you specified the G.729 codec instead, you would choose a G.729 option from this menu. For more information about recording prompts with G.729, see your G.729 documentation.

When a custom prompt is uploaded to CCX, the prompt is saved in both the formats **CCITT u-Law** and **CCITT a-Law**.

- Step 8** From the Attributes drop-down menu, choose 8.000 kHz, 8 Bit, Mono 7 kb/sec.
- Step 9** Click **Save As**.  
The Save As dialog box opens.
- Step 10** Enter a name for this format, and then click **OK**.  
The Save As Dialog Box closes.
- Step 11** In the Sound Selection dialog box, click **OK**.  
The Sound Selection dialog box closes.
- Step 12** In the Save As window, navigate to the directory of your choice, preferably a directory that you have set aside for prompts.
- Step 13** Select the file name, and click **Save**.  
The Save As dialog box closes.  
You are now ready to add this prompt to the Unified CCX system.

## Add Spoken-Name Prompts

Some Unified CCX applications play back the pre-recorded names of people that callers are trying to reach, to allow callers to confirm the transfer of a call.

To upload .wav files of the spoken names of users, complete the following steps.

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Tools > User Management > Spoken Name Upload**.
- Step 2** The Spoken Name Prompt Upload web page opens with the following fields:

| Field              | Description                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------|
| User Id            | Unique identifier of the user for which the spoken name is to be uploaded. This is a mandatory field. |
| Codec              | The codec chosen during installation for this Unified CCX server. Display only.                       |
| Spoken Name (.wav) | Location of the .wav file. This is a mandatory field.                                                 |



- Step 3** In the User Id field, enter an ID number that will identify the user.
- Step 4** In the Spoken Name (.wav) field, enter the path for a .wav file or click **Browse** to navigate to the directory that contains the Spoken Name .wav file.
- The Choose File dialog box opens. Select the required script file and click **Open**.
- Step 5** Click **Upload** icon that displays in the tool bar in the upper, left corner of the window or click the **Upload** button that displays at the bottom of the window to upload the file.
- Step 6** Repeat this process as needed to upload all spoken name .wav files.
- 

## Management of Custom Files

Use the Custom File Configuration web page to configure the classpath location of custom classes.

### Specify Custom Classpath Entries

Use the Custom Classes Configuration web page to specify the available classpath entries.

#### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **System > Custom File Configuration**.
- The Custom Classes Configuration web page opens. You can:
- Select required entries from the Available Classpath Entries list and arrange them in the order you want.
  - Use the arrow icons to move items between the Available Classpath Entries and Selected Classpath Entries lists.
- Step 2** Click **Update** when your selections are complete.
- Click **Upload Custom Jar Files** icon that displays in the tool bar in the upper, left corner of the window or the **Upload Custom Jar Files** button that displays at the bottom of the window to upload Jar files. The Document Management web page opens.
- 

## AAR File Management



**Caution** Ensure that the contents of the AAR file are correct and conform to the specifications detailed in this section. If you upload AAR files that do not conform to these specifications, the Unified CCX Engine may not function as designed. Consequently, you need to manually reconfigure some of the applications uploaded through AAR.

---

AAR files are archives of prompt, grammar, document, scripts, applications, and custom classes that you use as building blocks for applications and extensions.

An AAR file can be simple—for instance, consisting of a single prompt—or complex—for example, containing all the prompts for all languages application uses, the workflow, and the configuration information for an application.

An AAR file is essentially a zip file that contains an optional META-INF directory. The META-INF directory, if it exists, stores configuration data, including security, versioning, extensions, and services.

You create AAR files using Java tools. After creating a file, you need to upload it to Unified CCX.

The following example shows a sample AAR Main Manifest and a sample AAR Application Manifest.

### Sample AAR Main Manifest

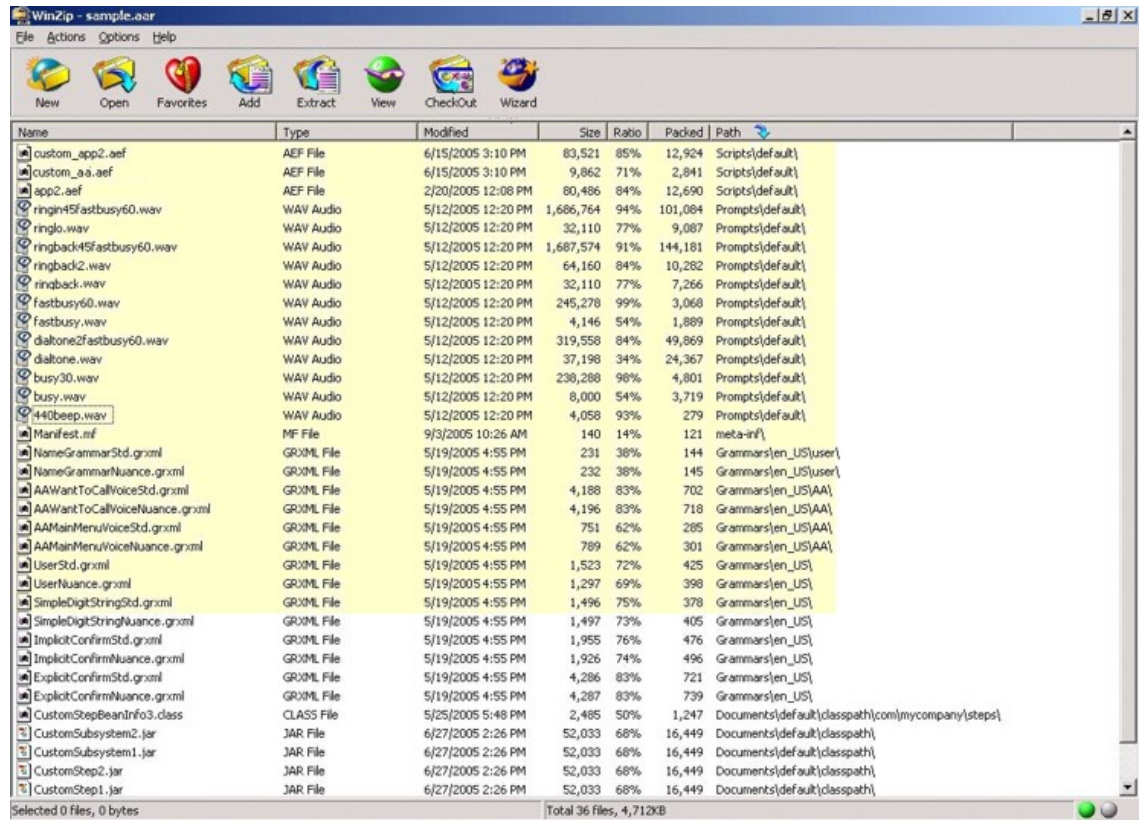
```
Manifest-Version: 1.1Created-By: 1.4.2_05 (Sun Microsystems Inc.)
Built-By: aaruser
Sealed: false
Cisco Unified CCX-Version: 9.0(1)
Class-Path:
Application-List: customApp1.mf customApp2.mf
Subsystem-List: sub1.mf sub2.mf
Palette-List: Custom1 Custom2
Custom1-Palette-Name: Category1
Custom2-Palette-Name: Category2
Custom1-Step-List: step1.mf
Custom2-Step-List: step2.mf step3.mf
Implementation-Title: AAR Test File
Implementation-Version: 4.5(1)
Implementation-Vendor: Cisco Systems, Inc.
Implementation-Vendor-Id: 12345
Implementation-URL: https://www.cisco.com
```

### Sample AAR Application Manifest

```
Application-Version: 1.1Created-By: 1.4.2_05 (Sun Microsystems Inc.)
Built-By: aaruser
Sealed: false
Implementation-Title: AAR Application MF
Implementation-Version: 9.0(1)
Implementation-Vendor: Cisco Systems, Inc.
Implementation-Vendor-Id: 12345
Implementation-URL: https://www.cisco.com
Application-Name: Custom AA
Application-Type: Cisco Script Application
Application-Description: Cisco Unified CCX Cisco Custom Application
Application-Id: 100
Max-Sessions: 300
Enabled: true
Script: SSCRIPT[aa.aef]
Default-Script: SSCRIPT[aa.aef]
Initial-Script: SSCRIPT[aa.aef]
```

**Figure 2: Sample AAR File**

The figure below shows a sample AAR file.



To deploy custom applications, steps, and subsystems through an AAR file, you must first create the AAR file using a jar or zip tool and then upload the file through the Unified CCX Administration web page.

## AAR File Creation

You create an AAR file using a jar or WinZip tool.

An AAR file format is similar to a Zip file format. It includes an optional META-INF directory, which is used to store configuration data, including security, versioning, extension, and services.

## Upload AAR Files

To upload an AAR file, complete the following steps.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Applications > AAR Management**.

The AAR Management web page opens to display the following fields and buttons.

| Field or Button                  | Description                                                                                                                                                                          |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enter a Valid AAR File to Upload | You can either enter the name of the AAR file or click <b>Browse</b> button next to this field to navigate to the directory in which the file is located. This is a mandatory field. |
| Overwrite existing files         | Enable this checkbox in case you want to overwrite the existing files.                                                                                                               |
| Upload                           | Click this button to upload the AAR file.                                                                                                                                            |
| Clear                            | Click this button to clear the selected file.                                                                                                                                        |

Enter the path for the AAR file or click **Browse** button to upload the file. The Choose File dialog box opens. Select the required script file and click **Open**.

**Step 2** Click **Upload**.

The contents of the AAR file are uploaded to the respective folders.

**Note** Unified CCX generates an error if the AAR file is not formatted correctly or is missing some custom files.

## META-INF Directory

Unified CCX uses the following files and subdirectories in the META-INF directory to configure applications, extensions and services:

- **MANIFEST.MF**. The file used to define extension and application related data.
- **applications**. This directory stores all application configuration files.

## Directories for Prompts, Grammars, Documents, and Scripts

The AAR files features also provides directories to store prompts, grammars, documents, and scripts to be uploaded to the Repository.

The AAR directory structure mirrors the function of the Unified CCX Prompt, Grammar, Documents, and Scripts Management web pages. Each directory corresponds to each language for which to install prompts, grammars, documents and scripts. Languages are defined using the Java Locale standard, and the special default directory is used for prompts, grammars, and documents that are common to all languages.

Only Unified CCX supported prompt files and extensions are allowed within each directory. The maximum length of each individual folder name and file name within a directory is 64 characters.

## Prompts Directory

The Prompts directory stores prompts that must be uploaded to the prompt repository (to make it seem like they were uploaded through Unified CCX Prompt Management).

## Grammars Directory

The Grammars directory stores grammars that must be uploaded to the grammar repository (to make it seem like they were uploaded through Unified CCX Grammar Management).

## Documents Directory

The Documents directory stores documents that must be uploaded to the document repository (to make it seem like they were uploaded through Unified CCX Document Management).

## Scripts Directory

The Scripts directory stores scripts that must be uploaded to the script repository (to make it seem like they were uploaded through Unified CCX Script Management).



**Note** The Script directory must define a single directory named **default** under which all script files must be listed.

## AAR Manifest

An AAR file manifest consists of a main section followed by a list of sections for individual AAR file entries, each separated by a newline.

Information in a manifest file contains *name-value* pairs—which are also referred to as *headers* or *attributes*. Groups of name-value pairs are known as a *section*; sections are separated by empty lines.

The following table describes the expected syntax of the manifest file.

**Table 3: Manifest File Syntax**

| Name              | Value                                     |
|-------------------|-------------------------------------------|
| section:          | *header +newline                          |
| nonempty-section: | +header +newline                          |
| newline:          | CR LF   LF   CR (not followed by LF)      |
| header:           | name: value                               |
| name:             | alphanum *headerchar                      |
| value:            | SPACE *otherchar newline *continuation    |
| continuation:     | SPACE *otherchar newline                  |
| alphanum:         | {A-Z}   {a-z}   {0-9}                     |
| headerchar:       | alphanum   -   _                          |
| otherchar:        | any UTF-8 character except NUL, CR and LF |

| Name        | Value                                                                                   |
|-------------|-----------------------------------------------------------------------------------------|
| <b>Note</b> | To prevent corruption of files sent through email, do not use “From” to start a header. |

The main section, which is terminated by an empty line:

- Contains security and configuration information about the AAR file itself, as well as the applications or extensions that this AAR file is defining.
- Defines main attributes that apply to every individual manifest entry. No attribute in this section can have its name equal to “Name”.

The individual sections define various attributes for directories or files contained in this AAR file. Not all files in the AAR file need to be listed in the manifest as entries. The manifest file itself must not be listed. Each section must start with an attribute with the name as “Name”, and the value must be a relative path to the file or directory.

If there are multiple individual sections for the same file entry, the attributes in these sections are merged. If a certain attribute has different values in different sections, the last one is recognized.

Attributes that are not understood are ignored. Such attributes may include implementation-specific information used by applications.

The following table describes the specification for any file that can be archived in the AAR.

**Table 4: Syntax for AAR Files**

| Name               | Value                                       |
|--------------------|---------------------------------------------|
| manifest-file      | main-section newline *individual-section    |
| main-section       | version-info newline *main-attribute        |
| version-info       | Manifest-Version: version-number            |
| version-number     | digit+{.digit+}*                            |
| main-attribute     | (any legitimate main attribute) newline     |
| individual-section | Name: value newline *perentry-attribute     |
| perentry-attribute | (any legitimate perentry attribute) newline |
| newline            | CR LF   LF   CR (not followed by LF)        |
| digit              | {0-9}                                       |

## Attribute Types

Attributes that appear in the main section are called main attributes. Attributes that appear in individual sections are called per-entry attributes. Some attributes appear in both the main and individual sections, in which case the per-entry attribute value overrides the main attribute value for the specified entry.

## Main Attributes

Main attributes are the attributes that are present in the main section of the manifest:

General main attributes as shown in the following table.

**Table 5: General Main Attributes**

| Attribute                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manifest-Version          | The manifest file version. The value is a legitimate version number.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Created-By                | The version and the vendor of the java implementation on top of which this manifest file is generated. This attribute is generated by the jar tool.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cisco Unified CCX-Version | The minimum Unified CCX version release compatible with the AAR file. Unified CCX-version is the accumulation of the Unified CCX release, Unified CCX Service Release, and Unified CCX Engineering Special defined in that order. For example, if the AAR file is compatible with Cisco Unified CCX release 4.5(1)_Build705, SR1_Build001, ES2_Build002, the Cisco Unified CCX-Version would be defined as 4.5(1)SR1ES2_Build002. Only the last build number is taken. So for instance, if the AAR file is compatible with Cisco Unified CCX release 4.5(1)_build705, SR1_Build001, then the Cisco Unified CCX-Version is 4.5(1)SR1_Build001. As a last example, if AAR file is compatible with Cisco Unified CCX release 4.5(1)_Build705 and above, then Cisco Unified CCX-Version would be 4.5(1)_Build705. |
| Class-Path                | The directories or JAR files that need to be installed and accessed by scripts directly. Entries are separated by one or more spaces. The Unified CCX class loader uses the value of this attribute to construct its internal search path where each entry is defined relative to the /Documents/default/classpath directory in this AAR file.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Application-List          | The application configuration files from the META-INF/applications/ directory to be installed. Entries are separated by one or more spaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Subsystem-List            | The subsystem configuration files from the META-INF/subsystems/ directory to be installed. Entries are separated by one or more spaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Attribute    | Description                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Palette-List | The step palettes that need to be installed. Each palette listed in this attribute will have a set of additional attributes that the Unified CCX editor uses to specify the palette name and the palette steps to install. Entries are separated by one or more spaces. |
| Palette-Name | The unique name of the palette to define in the Unified CCX editor where the specified steps will be grouped and accessible.                                                                                                                                            |
| Step-List    | The step configuration files from the META-INF/steps/ directory to be installed under the palette. Entries are separated by one or more spaces.                                                                                                                         |

Attribute defined for extension identification: Extension-Name

This attribute specifies a name for the extension contained in the AAR file. The name should be a unique identifier.

The following tables shows attributes defined for extension and directory versioning and sealing information. These attributes define features of the extension which the AAR file is a part of. The values of these attributes apply to all the directories in the AAR file, but can be overridden by per-entry attributes.

**Table 6: Implementation Category in Main Attributes**

| Attribute                | Description                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Implementation-Title     | The title of the extension implementation.                                                                                                                                                                                                                                                                                                                              |
| Implementation-Version   | The version of the extension implementation.                                                                                                                                                                                                                                                                                                                            |
| Implementation-Vendor    | The organization that maintains the extension implementation.                                                                                                                                                                                                                                                                                                           |
| Implementation-Vendor-Id | The ID of the organization that maintains the extension implementation.                                                                                                                                                                                                                                                                                                 |
| Implementation-URL       | The URL from which the extension implementation is downloaded.                                                                                                                                                                                                                                                                                                          |
| Sealed                   | Defines if this AAR file is sealed. Sealing a directory means that the files uploaded to the corresponding repository will not be modifiable once installed unless the AAR file is reinstalled. If set to true, then all directories in the AAR file default to be sealed, unless individually defined otherwise. If set to false, then all directories are modifiable. |



## Per-entry Attributes

Per-entry attributes apply only to the individual AAR file entry with which the manifest entry is associated. If the same attribute also appears in the main section, then the value of the per-entry attribute overwrites the main attribute value.

- **Example 1:** If AAR file a.aar has the following manifest content, then all the files archived in a.aar are sealed, except US English prompts. If the same attributes also appeared in an entry representing a parent directory of another entry, then the value of the per-entry attribute overwrites the parent directory per-entry attribute value.

```
Manifest-Version: 1.1 Created-By: 1.2 (Sun Microsystems Inc.)
Sealed: true
Name: Prompts/en_US/
Sealed: false
```

- **Example 2:** If AAR file a.aar has the following manifest content, then all the US English prompts archived in a.aar are sealed, except US English prompts located in the AA/ directory.

```
Manifest-Version: 1.1 Created-By: 1.2 (Sun Microsystems Inc.)
Name: Prompts/en_US/
Sealed: true
Name: Prompts/en_US/AA/
Sealed: false
```

The per-entry attributes fall into the following groups:

- Attributes defined for file contents: Content-Type

This attribute specifies the MIME type and subtype of data for a specific file entry in the AAR file. The value should be a string in the form of type/subtype. For example, image/bmp is an image type with a subtype of bmp (representing bitmap). This indicates that the file entry is an image with the data stored as a bitmap. RFC 1521 and 1522 discuss and define the MIME types definition.

- Attributes defined for directory versioning and sealing information:

These are the same set of attributes defined in [Table 6: Implementation Category in Main Attributes, on page 136](#) for the main attributes. When used as per-entry attributes, these attributes overwrite the main attributes for the individual file specified by the manifest entry.

## META-INF Directory Attributes

The Unified CCX recognizes the x.MF file in the applications, subsystems, and steps subdirectories in the META-INF directory and interprets each to configure applications, subsystems, and steps respectively. The x is the base file name as listed on the Application-List main attribute of the manifest file. The X.MF file contains one section defining the configuration of a particular application.

### Application Subdirectory Attributes

The following table describes the syntax of the manifest file for the application subdirectory.

**Table 7: Application Subdirectory Manifest File Syntax**

| Name             | Value                                       |
|------------------|---------------------------------------------|
| application-file | version-info newline *application-attribute |
| version-info     | Application-Version: version-number         |

| Name                  | Value                                          |
|-----------------------|------------------------------------------------|
| version-number        | digit+{.digit+}*                               |
| application-attribute | (any legitimate application attribute) newline |
| newline               | CR LF   LF   CR (not followed by LF)           |
| digit                 | {0-9}                                          |

The application attributes fall into the following groups:

**Table 8: Application Attributes**

| Attribute                          | Description                                                                                                                                                                                                                                                       |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Application-Version                | The application configurations file version. The value is a legitimate version number. For example, Cisco Unified CCX Release 4.5 starts with version 1.1.                                                                                                        |
| Application-Name                   | The unique name of the application (see Unified CCX Application Management).                                                                                                                                                                                      |
| Application-Type                   | The type of the application (Cisco Script Application, Busy, Ring-No-Answer).                                                                                                                                                                                     |
| Application-Description (optional) | The description for the application (see Unified CCX Application Management).                                                                                                                                                                                     |
| Application-Id                     | A unique identifier for the application (see Unified CCX Application Management).                                                                                                                                                                                 |
| Max-Sessions                       | The maximum number of sessions for the application (see Unified CCX Application Management).                                                                                                                                                                      |
| Enabled                            | The application is enabled if the value is set to true (see Unified CCX Application Management). If the value is set to false, the case is ignored.                                                                                                               |
| Script                             | The main script of a Cisco Script Application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters.                                                          |
| Default-Script                     | The default script of a Cisco Script Application, Unified ICME Translation or Post Routing application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters. |

| Attribute      | Description                                                                                                                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Initial-Script | The initial script of a Unified CCX Post Routing application (see Unified CCX Application Management). The value must be relative to the Scripts directory. Unified CCX does not support configuring script parameters. |

- Attributes defined for application versioning and sealing information: These attributes define features of the application to which the AAR file belongs. These attributes are the same as those listed in [Main Attributes](#), on page 135.





# CHAPTER 11

## Unified CCX System Management

Unified CCX administration provides options to configure, control, and monitor Unified CCX component activities and information across a cluster.



**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

See the *Cisco Unified Contact Center Express Install and Upgrade Guide* for instructions about tasks that significantly change your Unified CCX deployment, such as:

- Changing from a single-server deployment to a multiple-server deployment.
- Removing a Unified CCX Software component from a server.
- Moving a Unified CCX Software component to another server.
- Changes to a Unified CCX cluster (adding, removing, or replacing a server).

The following sections describe the day-to-day management of Unified CCX components.

- [Basic Terminology, on page 141](#)
- [High Availability and Automatic Failover, on page 142](#)
- [Unified CCX CDS Information Management, on page 143](#)
- [Manage System Parameters, on page 143](#)
- [Unified CCX IP Address/hostname Management, on page 147](#)
- [Exit Unified CCX Administration, on page 160](#)

## Basic Terminology

This section provides information about different Unified CCX terminology.

- **Cluster.** A Unified CCX cluster (often referred to as cluster in this manual) consists of one or more servers (nodes) that are running Unified CCX components in your Unified CCX deployment. If you deploy Unified CCX components on a single server, the Unified CCX cluster consists of that server. If you deploy Unified CCX on multiple servers, the cluster includes the Unified CCX server and standby server on which you installed Unified CCX. The Unified CCX cluster supports up to two Unified CCX servers, one designated as the *active Unified CCX server* and the other designated as the *standby Unified CCX server* for high availability purposes.




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**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

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- **Cluster profile.** The Unified CCX Administration web page (home page) displays information about the cluster profile. A cluster profile includes data relating to the Unified CCX servers, components, and licenses installed in a cluster.
- **Node (server).** A server that is part of the Unified CCX cluster.
- **Active Server.** The active server provides all system services and resources. You can deploy one active server in each Unified CCX subsystem. If the active server fails, the Unified CCX subsystem automatically fails over to the standby server.
- **Standby Server.** You can deploy up to two servers in each Unified CCX system for high availability—one active server (master) and one standby (not active) server. With high availability, if an active server becomes unavailable, the standby server automatically becomes the active server.
- **Component.** The software units in the Unified CCX system. The main software components of the Unified CCX server are the Engine, datastores, monitoring, recording, and the Cluster View Daemon (CVD). See the *Cisco Unified Contact Center Express Install and Upgrade Guide* for more information on setup and installation procedures.
- **Service.** An executable unit. A service may have other services as its children. (For example, subsystems and managers are children of the engine service).
- **Feature.** A logical representation of the functional unit.
- **Master service.** A specially-elected service. Only one service from the Engine service, or database services set can be the master within the Unified CCX Engine component.
- **Standby service.** An active service that can take over the master functionality in case the master service becomes unavailable within the Unified CCX Engine component. You cannot configure the standby service. The Cluster View Daemon (CVD) dynamically elects the services on the active node to be the master.

## High Availability and Automatic Failover




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**Note** Support for High Availability (HA) and remote servers is available only in multiple-server deployments. Unified CCX does not support more than two nodes in a HA setup. Expansion servers where the Database, Monitoring, or Recording components are running on separate servers are not supported.

---

Unified CCX provides high availability and automatic failover capability through the use of two servers, the *active server* and the *standby server*.

The active server provides all system services and resources; no services or resources are available from the standby server. When you make administrative changes on the active server, both the servers are synchronized.

If the active server fails, there is automatic failover to the standby server. For detailed information on HA over WAN deployment, see *Cisco Unified Contact Center Express Design Guide*.



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**Note** After a Unified CCX failover or failback the agent state changes to Not Ready state.

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## Network Partitions

Network malfunction or misconfiguration can create network partitions and split the network into separate *islands*. If a node enters this state, the node is referred to as being in the island mode. Nodes in the island mode are hard to detect. While these nodes can communicate within a partitioned island, they cannot communicate between partitioned islands. If the islands do not communicate, then each island will select its own active server.

Generally, you can connect to the Unified CCX administration on any node, and see a consistent cluster view. If a node is in the island mode, you will see different cluster views when you connect to nodes in each island.



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**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

---

If your node enters the island mode, it should recover from the island mode as soon as the underlying network issue is resolved. If the island mode persists, check the network connectivity/reachability between the two CCX servers and take action accordingly.

## Unified CCX CDS Information Management

The Unified CCX system stores configuration information in the Cisco Configuration Datastore Server (CDS). The Unified CCX Administration configurations are stored in the CDS.



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**Note** Support for High Availability and remote servers is available only in multiple-server deployments.

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The Unified CCX server can receive directory information from one Cisco Unified Communications directory and application configuration and script logic from a repository on another server.

## Manage System Parameters

The parameters in the System Parameters Configuration page are grouped logically into sections with headings. Each parameter has a corresponding suggested or default value on the right side of the page. Where applicable, radio buttons are used to toggle between the parameter options.

In this web page, you can configure the port settings, default session timeout, and codec.



**Note** Changing some system parameters like IP address, Network Time Protocol (NTP) and so on can result in a different License MAC. You need to get rehosted license files (with new License MAC) in such cases within 30-day grace period beyond which the system will stop working.

### Procedure

**Step 1** Choose **System > System Parameters** from the Unified CCX Administration menu bar.

The System Parameters Configuration web page appears.

**Step 2** Click the **Update** icon that displays in the tool bar in the upper, left corner of the window or the **Update** button that displays at the bottom of the window.

The system notifies all nodes in the cluster about the changes.

**Note** If Cluster View Daemon is in Shutdown state during this operation, then the changes just made are synchronized on that node when Cluster View Daemon is started again.

## System Parameters Configuration Web Page

The System Parameters Configuration web page displays the following fields.

*Table 9: System Parameters Configuration*

| Field                                                                             | Description                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Generic System Parameters</b>                                                  |                                                                                                                                                                                                                                                                                                                                                                    |
| System Time Zone                                                                  | The system or primary time zone will be the same as local time zone of the primary Unified CCX node configured during installation. Display only. Unified CCX Administration uses this primary time zone to display time-related data.<br><br><b>Note</b> If you have changed the primary time zone, you need to reboot both the nodes in the Unified CCX cluster. |
| <b>Network Deployment Parameters (displayed only in a HA over WAN deployment)</b> |                                                                                                                                                                                                                                                                                                                                                                    |
| Network Deployment Type                                                           | Displays the network deployment type as LAN or WAN only if we have more than one node. Display only.                                                                                                                                                                                                                                                               |
| <b>Internationalization Parameters</b>                                            |                                                                                                                                                                                                                                                                                                                                                                    |
| Customizable Locales                                                              | Use to specify a unique locale.<br>Default: (blank)                                                                                                                                                                                                                                                                                                                |



| Field                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default Currency                     | <p>Default currency, such as American dollars (USD), Euros, and so on. This is a mandatory field.</p> <p>The system uses the default currency for converting currency amounts in a playable format when no currency designator is specified.</p> <p>Default: American Dollar [USD]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Media Parameters</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Codec                                | <p>The codec chosen during installation for this Unified CCX server.</p> <p>Unified CCX supports packetization intervals of 20 ms, 30 ms, or 60 ms only.</p> <p>Default: 30 ms</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Default TTS Provider                 | <p>Default TTS (Text-to-Speech) provider.</p> <p>Default: By default, no TTS provider is configured. Select a provider from the drop-down list to configure it as the default. The system uses the default TTS provider to determine which provider to use if the TTS request does not explicitly specify the provider to use.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| User Prompts override System Prompts | <p>When enabled, custom recorded prompt files can be uploaded to the appropriate language directory under Prompt Management to override the system default prompt files for that language. By default, this is disabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Application Parameters</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Supervisor Access                    | <p>The Administrator uses this option to allow certain privileges to supervisors (all supervisors have the same privilege). The options are:</p> <ul style="list-style-type: none"> <li>• No access to teams—The supervisor logs into the Supervisor page, but will not be able to see any team information (No RmCm info).</li> <li>• Access to all teams—The supervisor logs into the Supervisor page, and will be able to see all the teams (RmCm information).</li> <li>• Access to supervisor teams only—The supervisor logs into the Supervisor page, and will be able to see the teams they supervise. When this option is selected, only the Primary Supervisor can see the team specific information. The secondary supervisor will not be able to see the team specific information.</li> </ul> <p>Default: No access to teams</p> <p><b>Note</b> A supervisor who does not have administrator privileges can add, modify, or remove skills from an agent.</p> |
| Max Number of Executed Steps         | <p>The maximum number of steps an application can execute before the Unified CCX Engine terminates the script or application. This is a mandatory field.</p> <p>This limitation is intended to prevent a script from running indefinitely.</p> <p>Default: 1000</p> <p><b>Note</b> Do not change the default value.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Field                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional Tasks                          | <p>This field allows you to control the creation of additional threads that the Unified CCX server internally initializes based on licensed Unified IP IVR ports. This is a mandatory field.</p> <p>Default: 0</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Default Session Timeout                   | <p>Maximum amount of time (in minutes) a user-defined mapping ID remains in the session object memory after the session is moved to the idle state. During this duration, the session continues to be accessible even if you have terminated that session. Use this setting to configure the time required to perform your after-call work (for example, writing variables to a database before clearing the session). This is a mandatory field.</p> <p>The default is 30 minutes (recommended). If you reduce this number, you also reduce the system memory usage comparatively.</p> <p>You can add a user-defined mapping ID to a session using the Session Mapping step in the script editor. Once assigned, you can use this mapping ID to get the session object from another application instance. By doing so, other applications obtain access to the session context. See the <i>Cisco Unified Contact Center Express Getting Started with Scripts</i> for more information.</p> |
| Enterprise Call Info Parameter Separator  | <p>A character used Get/Set Enterprise Call Info steps in the Unified CCX Editor to act as a delimiter for call data. This is a mandatory field.</p> <p>Default:   (bar)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Agent State after Ring No Answer          | <p>Radio button determining how agent state should be set after a Ring No Answer event. This is a mandatory field. The options are:</p> <ul style="list-style-type: none"> <li>• Ready. If an agent does not answer a Unified CCX call, the Agent State is set to Ready.</li> <li>• Not Ready (default). If an agent does not answer a Unified CCX call, the Agent State is set to Not Ready.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Live Data - Short Term Reporting Duration | <p>This parameter applies to Live Data reports that are available to agents and supervisors on Finesse desktops.</p> <p>For certain fields in the live data reports, you can set the short term value to 5, 10 or 15 minutes.</p> <p>Long term value is always set to 30 minutes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Number of Direct Preview Outbound seats   | <p>The maximum number of Direct Preview Outbound seats. The configuration of Outbound seats is done during the initial configuration or setup phase, after the installation.</p> <p><b>Note</b> This is a mandatory field. This field is displayed only if you have a Premium license.</p> <p>The maximum number of direct preview outbound seats that can be configured is limited by the Premium Seat Count. If there is an invalid entry during configuration, an error message is displayed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Field                          | Description                                                                                                                                                                                                                                                                                   |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Persistent Connection          | Radio button that determines whether to establish persistent connection to a remote device. The options are: <ul style="list-style-type: none"> <li>• Enable (default)—Establishes persistent connection.</li> <li>• Disable—Does not establish persistent connection.</li> </ul>             |
| <b>System Ports Parameters</b> |                                                                                                                                                                                                                                                                                               |
| RMI Port                       | The port number used by the Unified CCX CVD to serve RMI requests. This is a mandatory field.<br>Default: 6999                                                                                                                                                                                |
| RmCm TCP Port                  | TCP port number on which the CTI server component of the RmCm subsystem opens the server socket and listens to the clients. All CTI server clients, such as Sync Server, and IP Phone Agent Server, use this port number. This is a read-only field and cannot be modified.<br>Default: 12028 |

## Unified CCX IP Address/hostname Management

This section provides the steps you need to follow whenever there is a change in IP address/hostname for the following Unified CCX deployments:

- Unified CCX Cluster with Single-node
- Unified CCX Cluster with High Availability (HA)

You may want to change the IP address/hostname for a variety of reasons, including moving the server from one segment to another or resolving a duplicate IP address/hostname problem.



**Note** Hostname change is supported in Cisco Unified CCX.

The character limit for Host Name is 24 characters and must be in lower case .

## Prepare System for IP Address/host name Change

Perform the following tasks to ensure that your system is prepared for a successful IP address/host name change.



**Note** If you do not receive the results that you expect when you perform these tasks, do not continue with this procedure until after you resolve any problems that you find. DB replication across the entire cluster is essential for this process. Also, if the DNS check fails then the IP Address/host name change will not happen.

## Procedure

- Step 1** List all servers in the cluster and note whether the nodes are defined by using IP addresses or host names.
- From **Cisco Unified CCX Administration** menu bar on the first node, navigate to **System > Server**. A list of all servers in the cluster displays.
  - See whether the servers are defined using IP addresses or host names and capture this list of servers for later reference. Ensure that you have saved an inventory of both the host name and IP address of each node in your cluster.
- Step 2** Ensure that all servers in the cluster are up and available by checking for any active ServerDown alerts. You can check by using either the Real Time Monitoring Tool (RTMT) or the Command Line Interface (CLI) on the first node.
- To check by using RTMT, access Alert Central and check for ServerDown alerts.
  - To check by using the CLI on the first node, enter the following command and inspect the application event log:
- ```
file search activelog syslog/CiscoSyslog ServerDown
```
- Step 3** Check the DB replication status on all the Cisco CRS nodes and Cisco Unified Communications nodes in the cluster to ensure that all servers are replicating database changes successfully using the following substeps:
- For Unified CCX:** In a High Availability deployment of Unified CCX, you can check the DB replication status for the datastores across all servers in the cluster using Unified CCX Serviceability Administration. Choose **Tools > Datastore Control Center > Replication Servers** from the Unified CCX Serviceability menu bar to view the replication status. The value in State field for both the servers in this web page should display ACTIVE/ CONNECTED.
 - For Cisco Unified Communications Platform:** You can check the DB replication status on all the Cisco Unified Communications nodes in the cluster by using either RTMT or a CLI command.
 - To check by using RTMT, access the Database Summary and inspect the replication status.
 - To check by using the CLI, enter the command that is shown in the following example:

```
admin: show perf query class "Number of Replicates Created and
State of Replication"
==>query class :

- Perf class (Number of Replicates Created and State of
Replication)
has instances and values:
ReplicateCount -> Number of Replicates Created    = 344
ReplicateCount -> Replicate_State                  = 2
```

Be aware that the Replicate_State object shows a value of 2 in this case. The following list shows the possible values for Replicate_State:

- 0—Replication Not Started. Either no subscribers exist, or the Database Layer Monitor service is not running and has not been running since the subscriber was installed.
- 1—Replicates have been created, but their count is incorrect.

- 2—Replication is good.
- 3—Replication is bad in the cluster.
- 4—Replication setup did not succeed.

- Step 4** Run a manual DRS backup and ensure that all nodes and active services are backed up successfully.
- Step 5** Run the CLI command `utils diagnose module validate_network` through Platform CLI on all nodes in the cluster to ensure network connectivity and DNS server configuration are intact.
-

IP Address Modification

This section describes how to change the IP address.



Caution Changing the IP address on any node in a Cisco CRS cluster can interrupt call processing and other system functions. Also, changing the IP address can cause the system to generate certain alarms and alerts such as ServerDown and automatic failover to a backup server may not operate. Because of this potential impact to the system, you must perform IP address changes during a planned maintenance window.



Note When there is a change in the Unified CCX server subnet, you must change the default gateway IP address. Ensure the following:

- The new default gateway IP address is configured on the Unified CCX server.
- The DNS is reachable and the DNS record exists for the Unified CCX server.

Change IP Address for Server in Single-Node Deployment

Use this procedure to change the IP address of the server in a single-node deployment.



Caution Ensure that the server on the same subnet or that is moved to the new subnet has access to the configured default gateway before proceeding to change the IP address of the server.

Procedure

- Step 1** Change the DNS record of the server to point to the new IP address. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.
- Step 2** If you want to change the IP address of the server on the same subnet or a different subnet that requires a new default gateway address, use either of the following methods:
- CLI commands

- Cisco Unified Communications Operating System Administration interface

Using CLI commands:

- a) To change the default gateway, enter the following CLI command:

```
set network gateway <IP Address>
```

The following sample output displays:

```
admin:set network gateway 10.3.90.2

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n):
Continue (y/n)?y
```

- b) To change the IP address of the server, enter the following CLI command:

set network ip eth0 <ip_address> <netmask> <default gateway> where `ip_address` specifies the new server IP address and `netmask` specifies the new server network mask and `default gateway` specifies the default gateway of the new server.

The following sample output displays:

```
admin: set network ip eth0 10.3.90.21 255.255.254.0 10.3.90.1
** W A R N I N G ***
If there are IP addresses (not hostnames)
configured in UCCX Administration
under System -> Servers then you must change
the IP address there BEFORE changing it here
or call processing will fail. This will cause the
system to restart
=====
Note: To recognize the new IP address all nodes within
the cluster will have to be manually rebooted.
=====
Do you want to continue?
Enter "yes" to continue and restart or any other key
to abort
```

Enter **y** and press **Enter**. This will automatically reboot this server with the new IP address.

Using Cisco Unified Communications Operating System Administration interface:

Alternatively, you can change the IP address and default gateway of the server from **Cisco Unified Communications Operating System Administration** interface as follows:

- Choose **Settings > IP > Ethernet**.
- Change the IP address, default gateway, and netmask, and click **Save**. The server restarts automatically with the new IP address.

If you change the IP address, License MAC of the server will also change. Rehost the new license. Old license enters its grace period.

IP Address Modification in High-Availability (HA) Deployment



Note Ensure that the IP Address is sequentially changed first in the Publisher and then the Subscriber node of the Unified CCX servers.

Change IP Address for Publisher Server in HA Deployment

Use this procedure to change the IP address of publisher server in a HA deployment.



Caution Ensure that the server on the same subnet or that is moved to the new subnet has access to the configured default gateway before proceeding to change the IP address of the server.

Procedure

- Step 1** Change the DNS record of the publisher server to point to the new IP address. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.
- Step 2** Verify that the DNS change propagates to other nodes by using the `utils network host <IP Address>` CLI command on all the cluster nodes.
- Step 3** From the Cisco Unified Operating System Administration page of the subscriber server in the cluster, perform the following tasks:
- Navigate to **Settings > IP > Publisher**.
 - Change the IP address of the publisher server.
- Step 4** To update new IP of the publisher server in subscriber, enter the following CLI command on the subscriber server:

```
utils uccx modify remote_IPAddress <Old_IP_of_Publisher>
<New_IP_of_Publisher>
```

The following output displays:

```
admin:utils uccx modify remote_IPAddress 10.3.90.21 10.3.90.28
```

```
Old Remote IP Address: 10.3.90.21
New Remote IP Address: 10.3.90.28
```

```
This command should be executed only in case you are changing IP Address of remote server.
Are you sure you want to run this command?
Continue (y/n)?
```

Enter **y** and press **Enter**.

- Step 5** If you want to change the IP address of the server on the same subnet or a different subnet that requires a new default gateway address, use either of the following methods:
- CLI commands
 - Cisco Unified Communications Operating System Administration interface

Using CLI commands:

- a) To change the default gateway, enter the following CLI command:

```
set network gateway <IP Address>
```

The following sample output displays:

```
admin:set network gateway 10.3.90.2

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n):
Continue (y/n)?y
```

Caution Ensure that the server is moved to the new subnet and has access to the default gateway before proceeding to the following sub-step.

- b) To change the IP address of the server, enter the following CLI command:

```
set network ip eth0 <ip_address> <netmask> <default_gateway> where ip_address specifies the
new server IP address, netmask specifies the new server network mask and default_gateway specifies
the default gateway of the new server.
```

The following sample output displays:

```
admin:set network ip eth0 10.78.92.55 255.255.255.0 10.78.92.1

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n)?y
***  W A R N I N G  ***
This command will cause the system to restart
=====
Note: Please verify that the new ip address is unique
      across the cluster and, if DNS services are
      utilized, any DNS configuration is completed
      before proceeding.
      To recognize the new ip address all nodes within
      the cluster will have to be manually rebooted.
=====
Continue (y/n)?y
```

Enter **y** and press **Enter**. This will automatically reboot this server with the new IP address.

Using Cisco Unified Communications Operating System Administration interface:

Alternatively, you can change the IP address and default gateway of the server from **Cisco Unified Communications Operating System Administration** interface as follows:

- Choose **Settings > IP > Ethernet**.
- Change the IP address, default gateway, and netmask, and click **Save**. The server restarts automatically with the new IP address.

Step 6 Reboot all the servers in the cluster including the publisher using the CLI command `utils system restart`.

Note If you do not reboot the subscriber after the IP address change, all the services on the publisher may not start properly.

If you change the IP address, License MAC will also change. Rehost the new license for the new LicenseMAC. Old license enters its grace period.

Change IP Address for Subscriber Server in HA Deployment

Use this procedure to change the IP address of a subscriber server in a HA deployment.



Caution Ensure that the server on the same subnet or that is moved to the new subnet has access to the configured default gateway before proceeding to change the IP address of the server.

Procedure

- Step 1** Change the DNS record of the subscriber server to point to the new IP address. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.
- Step 2** Verify that the DNS change propagates to other nodes by using the `utils network host <IP Address>` CLI command on all the cluster nodes.

Caution Skip Step 3 if the server is defined by host name and you are changing only the IP address.

- Step 3** From **Cisco Unified CCX Administration** page, perform the following tasks:
- Navigate to **System > Server**. From the List Servers web page, click the IP address of the subscriber server.

The Server Configuration page for the subscriber server opens.

- Enter the new IP address in the **Host Name/IP Address** field and click **Save**.

Note You can use the CLI command `run sql select name,nodeid from ProcessNode` to check whether the new IP address has been replicated on all the servers.

- Step 4** To update new IP of the subscriber in publisher, enter the following CLI command on the publisher server:
- utils uccx modify remote_IPAddress <Old_IP_of_Subscriber> <New_IP_of_Subscriber>**

The following output displays:

```
admin:utils uccx modify remote_IPAddress 10.3.90.21 10.3.90.28

Old Remote IP Address: 10.3.90.21
New Remote IP Address: 10.3.90.28
```

```
This command should be executed only in case you are changing IP
Address of remote server.
Are you sure you want to run this command?
Continue (y/n)?
```

Enter **y** and press **Enter**.

- Step 5** If you want to change the IP address of the server on the same subnet or a different subnet that requires a new default gateway address, use either of the following methods:
- CLI commands
 - Cisco Unified Communications Operating System Administration interface

Using CLI commands:

- a) To change the default gateway, enter the following CLI command:

```
set network gateway <IP Address>
```

The following sample output displays:

```
admin:set network gateway 10.3.90.2

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n):
Continue (y/n)?y
```

Caution Ensure that the server is moved to the new subnet and has access to the default gateway before proceeding to the following sub-step.

- b) To change the IP address of the server, enter the following CLI command:

```
set network ip eth0 <ip_address> <netmask> <default gateway> where ip_address specifies the
new server IP address, netmask specifies the new server network mask and default gateway specifies
the default gateway of the new server.
```

The following sample output displays:

```
admin:set network ip eth0 10.78.92.55 255.255.255.0 10.78.92.1

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n)?y
***  W A R N I N G  ***
This command will cause the system to restart
=====
Note: Please verify that the new ip address is unique
      across the cluster and, if DNS services are
      utilized, any DNS configuration is completed
      before proceeding.
      To recognize the new ip address all nodes within
      the cluster will have to be manually rebooted.
=====
Continue (y/n)?y
```

Enter **y** and press **Enter**. This will automatically reboot this server with the new IP address.

Using Cisco Unified Communications Operating System Administration interface:

Alternatively, you can change the IP address and default gateway of the server from **Cisco Unified Communications Operating System Administration** interface as follows:

- Choose **Settings > IP > Ethernet**.
- Change the IP address, default gateway, and netmask, and click **Save**. The server restarts automatically with the new IP address.

Step 6 Reboot all the servers in the cluster including the publisher using the CLI command `utils system restart`.

Note If you do not reboot the subscriber after the IP address change, all the services on the publisher may not start properly.

Host Name Modification

This section describes how to change the host name.



Caution Changing the host name on any node in a Cisco CRS cluster can interrupt call processing and other system functions. Also, changing the host name can cause the system to generate certain alarms and alerts such as ServerDown and automatic failover to a backup server may not operate. Because of this potential impact to the system, you must perform host name changes during a planned maintenance window.



Note As a prerequisite ensure that the DNS is reachable and the DNS record exists for the server.

Change Host Name for Server in a Single-Node Deployment

Use this procedure to change the host name of the server in a single-node deployment.



Note The character limit for Host Name is 24 characters and must be in lower case .

Procedure

- Step 1** Change the DNS record of the server to point to the new host name. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.
- Step 2** You can change the host name of the server either using the CLI (command line interface) command or using **Cisco Unified Communications Operating System Administration** interface. To change the host name using CLI command, go to step 3 or to change the host name using **Cisco Unified Communications Operating System Administration** interface go to step 4.
- Step 3** At the CLI prompt, perform the following tasks:
- a) Enter the CLI command `set network hostname` and press **Enter**.

The following sample output displays:

```
admin:set network hostname
```

```
WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue(y/n):
Continue (y/n)?y
ctrl-c: To quit the input.
```

```
*** W A R N I N G ***
```

```
Do not close this window without first canceling the command.
```

```
This command will automatically restart system services.
The command should not be issued during normal operating
hours.
```

```

=====
Note: Please verify that the new hostname is a unique
      name across the cluster and, if DNS services are
      utilized, any DNS configuration is completed
      before proceeding.
=====

```

```

Security Warning : This operation will regenerate
                  all UCCX Certificates including any third party
                  signed Certificates that have been uploaded.

```

```

Continue (y/n)?y
Enter the hostname:

```

b) Enter **y** twice to continue and enter the hostname and press **Enter**.

Step 4 From **Cisco Unified Communications Operating System Administration** interface, perform the following task:

- a) Choose **Settings > IP > Ethernet**.
- b) Change the host name.
- c) Click **Save**. The server automatically reboots with the new host name.

Step 5 On changing the host name/IP address, License MAC of the server changes. Rehost the new license. Old license enters its grace period.

Step 6 Verify the status of SocialMiner:

- a) Choose **Subsystems > Chat and Email > SocialMiner Configuration**.
- b) Click **Save** and verify that the **SocialMiner Status** displays green for all the components.

Host Name Modification in High-Availability (HA) Deployment

The character limit for Host Name is 24 characters and must be in lower case .

Change Host Name for Publisher Server in HA Deployment

Use this procedure to change the host name of publisher server in a HA deployment.

Procedure

Step 1 Change the DNS record of the publisher server to point to the new host name. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.

Step 2 Verify that the DNS change propagates to other nodes by using the `utils network host <IP Address>` and `show tech network hosts` CLI commands on all the cluster nodes.

Step 3 To change the host name of the publisher on the subscriber node, use either of the following methods:

- CLI commands
- Cisco Unified Communications Operating System Administration interface

Using CLI commands:

- a) Run the following CLI command on the subscriber node:


```
set network cluster publisher hostname <hostname>
```

where `hostname` is the new publisher.

The following output displays:

```
admin:set network cluster publisher hostname hijk-lmn-n1

New Remote hostname: hijk-lmn-n1
```

Using Cisco Unified Communications Operating System Administration interface:

From **Cisco Unified Communications Operating System Administration** interface of the subscriber server, perform the following tasks:

- a) Navigate to **Setting > IP > Publisher**.
- b) The Server Configuration page for the publisher server opens. Change the host name of Publisher server in the **Host Name** or **IP Address** field and then click **Save**.

Step 4

Run the following CLI command on the Subscriber node to update new host name of the Publisher server :

```
utils uccx modify remote_hostname <Old_hostname_of_Publisher> <New_hostname_of_Publisher>
```

The following output displays:

```
admin:utils uccx modify remote_hostname abcd-efg-n1 hijk-lmn-n1

Old Remote hostname: abcd-efg-n1
New Remote hostname: hijk-lmn-n1
```

This command should be executed only in case you are changing Hostname of remote server.
Are you sure you want to run this command?
Continue (y/n)?

Enter **y** and press **Enter**.

Step 5

To change the host name of publisher server, use either of the following methods:

- CLI commands
- Cisco Unified Communications Operating System Administration interface

Using CLI commands:

- a) Run the following CLI command on the publisher node:

```
set network hostname
```

The following output displays:

```
admin:set network hostname
```

```
***  W A R N I N G  ***
Do not close this window without first canceling the command.
```

```
This command will automatically restart system services.
The command should not be issued during normal operating
hours.
```

```
=====
Note: Please verify that the new hostname is a unique
      name across the cluster and, if DNS services are
      utilized, any DNS configuration is completed
      before proceeding.
```

```

=====
Security Warning : This operation will regenerate
                  all UCCX Certificates including any third party
                  signed Certificates that have been uploaded.

Continue (y/n)?

```

Enter **y** and press **Enter**.

- b) Enter the hostname when prompted. The system services will automatically restart.

Using Cisco Unified Communications Operating System Administration interface:

Change the host name using Cisco Unified Communications Operating System Administration interface of the publisher server:

- a) Choose **Settings > IP > Ethernet**.
- b) Change the host name.
- c) Click **Save**. The system services will automatically restart.

Step 6 Reboot all the servers in the cluster including the publisher using the CLI command `utils system restart`.

Note If you do not reboot the subscriber, all the services on the publisher may not start properly.

Step 7 From the publisher node, run CLI command `utils dbreplication reset all` to resetup Unified CM database replication across the entire cluster.

Step 8 From the publisher node, run CLI command `utils uccx dbreplication reset` to setup Unified CCX database replication across the cluster.

Step 9 On changing the host name, License MAC changes. Rehost the new license for the new license MAC. Old license enters its grace period.

Step 10 Verify the status of SocialMiner.

Change Host Name for Subscriber Server in HA Deployment

Use this procedure to change the host name of a subscriber server in a HA deployment.

Procedure

- Step 1** Change the DNS record of the subscriber server to point to the new host name. Ensure that you correctly update both the forward (A) and reverse (PTR) records, and there are no duplicate PTR records.
- Step 2** Verify that the DNS change propagates to other nodes by using the `utils network host <IP Address>` and `show tech network hosts` CLI commands on all the cluster nodes.
- Step 3** To update new host name of the subscriber in publisher, enter the following CLI command on the publisher server:

```
utils uccx modify remote_hostname <Old_hostname_of_Subscriber> <New_hostname_of_Subscriber>
```

The following output displays:

```

admin:utils uccx modify remote_hostname abcd-efg-h1  ijkl-mno-p2

Old Remote hostname: abcd-efg-h1
New Remote hostname: ijkl-mno-p2

```

This command should be executed only in case you are changing Hostname of remote server.
 Are you sure you want to run this command?
 Continue (y/n)?

Enter **y** and press **Enter**.

Step 4 To change the host name of the subscriber server, perform either of the following methods:

- CLI commands
- Cisco Unified Communications Operating System Administration interface

Using CLI commands:

a) Run the following CLI command on the subscriber server:

```
set network hostname
```

The following output displays:

```
admin:set network hostname

WARNING: Changing this setting will invalidate software license
         on this server. The license will have to be re-hosted.
Continue (y/n):
Continue (y/n)?y
***  W A R N I N G   ***
This command will cause the system to restart
=====
Note: Please verify that the new ip address is unique
      across the cluster and, if DNS services are
      utilized, any DNS configuration is completed
      before proceeding.
      To recognize the new ip address all nodes within
      the cluster will have to be manually rebooted.
=====
Continue (y/n)?y
```

Enter **y** and press **Enter**. The system services will automatically restart.

Using Cisco Unified Communications Operating System Administration interface:

Change the host name using Cisco Unified Communications Operating System Administration interface of the subscriber server:

- a) Choose **Settings > IP > Ethernet**.
- b) Change the host name.
- c) Click **Save**. The system services will automatically restart.

Step 5 Restart all the servers in the cluster using the CLI command `utils system restart`.

Note If you do not reboot the subscriber, all the services on the publisher may not start properly.

Step 6 From the publisher node, run CLI command `utils dbreplication reset all` to resetup Unified CM database replication across the entire cluster.

Step 7 From the publisher node, run CLI command `utils uccx dbreplication reset` to setup Unified CCX database replication across the cluster.

Step 8 Verify the status of SocialMiner.

Verify Proper Function of System after IP Address/host name Change

After you change the IP addresses/host names of your cluster, complete the following tasks:

Procedure

- Step 1** Ensure that all the servers in the cluster are up and available.
- Step 2** Check the DB replication status as described in Step 3 of [Prepare System for IP Address/host name Change, on page 147](#) to ensure all the servers are replicating database changes successfully.
- Step 3** Run a manual DRS Backup and ensure that all nodes and active services are successfully backed up.
- Step 4** Run the CLI command `utils diagnose module validate_network` through platform CLI on all nodes in the cluster to ensure network connectivity and DNS server configuration are intact.
- Step 5** If you have changed the IP address to move the Unified CCX server to a different network, then any firewall configuration on the other network must be changed to permit or deny traffic from the new IP address.
- Step 6** If you have created any DSN using old IP address, change the DSN to point to the new IP. For example, the DSN created for Wallboard.
- Step 7** Update the new IP address in the following web pages as well:
- **Work Flow Configuration > User Interface > Browser Setup** - URL and Home Page
 - **Work Flow Configuration > HTTP Action** - Host
 - **Work Flow Configuration > IPC Action** - IP Address
 - Update the Recording configuration and the Cisco SocialMiner configuration in the Unified CCX Administration page on the Publisher server.
- Step 8** For Cisco Finesse and Unified Intelligence Centers users, delete the certificates entries for the old hostname/IP Address from the web browser before you log in to Cisco Finesse Agent Desktop or Unified Intelligence Center.
-

Exit Unified CCX Administration

To exit Unified CCX Administration without closing your web browser, you can do either of the following:



Note You can also exit Unified CCX Administration by closing your web browser.

Procedure

- Step 1** Click the **Logout** link displayed in the top right corner of any Cisco Unified CCX Administration web page
- Step 2** Choose **System > Logout** from the Unified CCX Administration menu bar.
- The system logs you out of Unified CCX and displays the Unified CCX Authentication web page.
-



CHAPTER 12

Unified CCX Reporting

- [Reporting Administration on Unified CCX](#), on page 163
- [Reporting Administration on Unified Intelligence Center](#), on page 206

Reporting Administration on Unified CCX

Import of Stock Reports

To apply a patch if you import stock reports from Unified Intelligence Center, then run the CLI command **utils uccx syncocuc permission all** to reset the permissions of the user groups. For more information, see the “Command line interface” section of the *Cisco Unified Contact Center Express Administration and Operations Guide*, located at https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html.



Note Do not create a sub-category under the **Stock** category as the permissions for the **Stock** category is automatically reset at midnight.

Unified CCX Historical Reports

Historical reports are the preconfigured reports in Unified Intelligence Center. These reports access past data from the historical data source to display information for the specified period of time.

Unified CCX Historical Datastore

In a Unified CCX Cluster, there can be one or more Historical datastores.



Note Support for High Availability and remote servers is available only in multiple-server deployments.

The Historical Unified CCX Datastore can be co-located with the Unified CCX.



Note In a Unified CCX High Availability server with co-resident Cisco Unified Intelligence Center, Cisco Unified Intelligence Center will intelligently point to the appropriate datasource. This will require no manual configuration during failover or in island mode scenario. For more information about Historical datastore, see *Cisco Unified Contact Center Express Serviceability Administration Guide*.

Historical Reporting Configuration

The Unified CCX Historical Reporting subsystem provides you with a way to set up and manage the purging of the Historical Reporting databases.

Setting up Unified CCX for Historical Reporting consists of the following tasks:

1. [Database Server Configuration, on page 307](#)
2. [Configure Automatic Purging, on page 165](#)

Configure Database Server Limits

To limit the performance impact of historical reporting on a particular Unified CCX server, you can configure a maximum number of five client/scheduler database connections per server.

To do so, complete the following steps:

Procedure

Step 1 From the Unified CCX Administration menu bar, choose **Tools > Historical Reporting > Database Server Configuration**.

The Database Server Configuration web page opens with the following fields:

Field	Description
Server Name	The host name or IP Address of the database server.
Maximum DB Connections for Report Clients Sessions	<p>The maximum number of client and scheduler connections that can access the Historical Reports Database server.</p> <p>There is a limit of instances for the reporting client sessions and the scheduler sessions based on the load that can be run on each server. The following are the limits:</p> <ul style="list-style-type: none"> • Standalone Setup—1 to 8 instances • High Availability Setup—1 to 16 instances

Step 2 Enter a value in the **Maximum DB Connections for Report Client Sessions** field next to a Server Name.

Step 3 Click **Update**.

The configuration changes take effect.

View Historical Reports

You can view historical reports through the Unified Intelligence Center.

Procedure

Choose **Tools > User Management > Reporting Capability View**

The User Configuration web page opens.

Purge of Historical Data

As the Unified CCX Engine runs, it collects information about the status and performance of the Unified CCX system. Historical information is stored in a database that can then be accessed to provide reports.

When the database approaches its maximum size, some or all of the data in it must be removed. Removing data from a database is called *purging*.

When the system purges data, it removes data from the db_cra database. It determines what information to purge based on the number of months you specify and on the current date. For example, if you instruct the system to purge data older than 12 months, a purge on January 15 will purge data older than January 15 of the previous year.



Note When you purge data, you permanently delete it. If you want to keep data that will be purged, back up the database.

Unified CCX Administration provides the following features for purging historical reports from the database:

- Daily comparison of the size of the database to a user-specified maximum size
- User-specified time at which the system purges data
- Automatic purging of the database when it exceeds the user-specified maximum sizes
- Automatic purging of the database based on user-specified parameters
- Manual purging of the database



Caution Not configuring the Purge parameters may make your database to be overloaded with large number of records. This leads to call data not being written to database.

Configure Automatic Purging

The Unified CCX Engine performs automatic purging each day at a preset time.

To help keep your system running most efficiently, schedule automatic purging to run when your system is least busy. By default, daily purges are scheduled to run at 01:00 a.m. (01:00 Hrs), but you can change this time.

The system bases its purging activities on a variety of parameters. You can change the default value for any parameter as needed.

The following section contains the procedure for setting the daily purge schedule and auto purge.

Configure Purge Schedule Configuration Parameters

You can change the time of day that the system assesses the need to purge data and the age of data to purge.

When data is purged, the Unified CCX sends a “Database purged” message. This message announces that a purge has taken place and includes an explanation of the purging activity. If the database is approaching its maximum size, then the Unified CCX sends the following message - “Database approaching maximum size”.

The system can send notifications through the following two methods:

- Syslog (system log)
- SNMP traps

To set the purge schedule configuration parameters, complete the following steps.

Procedure

Step 1

From the Unified CCX Administration menu bar, choose **Tools > Historical Reporting > Purge Schedule Configuration**.

The Purge Schedule Configuration area opens. The following fields are displayed in the Purge Schedule Configuration area.

Field	Description
Purge Schedule	
Daily purge at	Time of day for the daily purge along with the time zone. The time that appears here is based on the primary time zone, which is specified during initial setup of Unified CCX Administration. In a High Availability over WAN deployment, the purge schedule will happen at the time zone of the primary node. Note Unified CCX to Unified Intelligence Center sync runs as part of the purge. It synchronizes the users, teams and grants Live Data report permissions.
Purge data older than	Data can persist for a number of months before being purged.
Purge run time	The total duration for which the purge process should run.

Field	Description
Auto Purge Configuration	
Initiate automatic purge when database exceeds	Percentage of the maximum database size at which an automatic purge is initiated (as compared to the total available size).
Initiate automatic purge when extent size exceeds	Percentage of the maximum extents size of any table above which an automatic purge is initiated.
Auto purge data for the oldest	Age of data to be purged.

- Step 2** From the drop-down list in the Daily purge at field, choose a time of day at which the system determines if purging is necessary.
- Step 3** From the drop-down list in the Purge data older than field, choose the required number of months.
If the system determines that purging is necessary, it will purge both databases of data that is older than the number of months specified in this field.
- Step 4** From the drop-down list in the Purge run time field, specify the required number of hours.
If the system determines that purging is necessary, it will purge both databases of data within the specified duration of time.
- Step 5** From the drop-down list in the Initiate automatic purge when database size exceeds field, accept the default, or choose another number.
- Step 6** From the drop-down menu in the Auto purge data for the oldest field, accept the default of **15**, or choose another number.
- Step 7** From the drop-down list in the initiate automatic purge when extent size exceeds field, accept the default , or choose another number.
- Step 8** Click **Update** icon that displays in the tool bar in the upper, left corner of the window or the **Update** button that displays at the bottom of the window.
The new purge schedule configuration is added to the Unified CCX system.

Purge Manually

You can manually purge the databases at any time. This action will not affect the automatic purging schedule.



Note Support for High Availability is available only in multiple-server deployments.

To manually purge historical data, complete the following steps.

Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Tools > Historical Reporting > Purge Now**.

The Purge Now web page opens. The Purge data older than field is displayed in the Purge Now web page. You can specify this field in months and days.

Step 2 From the drop-down list in the Purge data older than *N* months field, keep the default (13 months) or specify the required number of months.

If the system determines that purging is necessary, it will purge both databases of data that is older than the number of months specified in this field.

The Initiate automatic purge when database exceeds field displays the current historical database size as compared to the total available size.

Step 3 From the drop-down list in the Purge data older than *N* days field, keep the default (15 days) or specify the required number of days.

If the system determines that purging is necessary, it will purge both databases of data that is older than the number of days specified in this field.

Step 4 From the drop-down list in the Purge run time, keep the default (7 hours) or specify the required number of hours.

If the system determines that purging is necessary, it will purge both databases of data within the specified duration of the time .

Step 5 Click **Purge Now**.

The database purge is initiated in the server and the Purge Now area refreshes.

File Restore

Use the File Restore menu option to restore the database records written to HR files when the database goes down.

Unified CCX Real-Time Reports

When the Unified CCX system is configured and functioning, you can run reports to monitor real-time activity using the Unified CCX Administration web interface.

You must be logged into the Unified CCX Administration web interface to run Unified CCX real-time reports.

The following sections provide more information about real-time Unified CCX data:

Available Unified CCX Real-Time Reports

Unified CCX real-time reporting provides real-time reports you can use to monitor Unified CCX system activity. The following table briefly describes each of these reports.

Report	Description
Application Tasks	Provides information about currently active applications.
Application Tasks Summary	Provides a summary of specific application activity.

Report	Description
Applications	Provides a list of all applications loaded on the Unified CCX server.
Contacts Summary	<p>Provides information for call contacts, email contacts, and HTTP contacts. Also provides the total number of contacts.</p> <p>Note Calls made by the Outbound subsystem will not be displayed in the Contacts Summary Real-Time Report.</p>
Contacts	Provides information about currently active contacts.
Chat CSQ Cisco Unified Contact Center Express Stats	Provides information about Chat CSQ activity. This report is available only if Unified CCX has been configured.
Chat Resource Cisco Unified Contact Center Express Stats	Provides information about Chat Unified CCX resources activity.
CSQ Cisco Unified Contact Center Express Stats	Provides information about CSQ activity. This report is available only if Unified CCX has been configured.
Data Source Usage	Provides information about configured data source names (DSNs).
Engine Tasks	Provides information about currently active Engine tasks.
Preview Outbound Campaign Cisco Unified Contact Center Express Stats	Provides information about real-time Unified CCX information for the Outbound preview dialer.
Outbound Campaign Stats	<p>Provides real-time statistics on IVR and agent based progressive and predictive Outbound campaigns since the statistics were last reset.</p> <p>Note This report will be available only if you have an Outbound license on top of the Unified CCX premium license in your Unified CCX.</p>
Overall Outbound Stats	<p>Provides real-time statistics across all IVR and agent based progressive and predictive Outbound campaigns since the statistics were last reset.</p> <p>Note This report will be available only if you have an Outbound license on top of the Unified CCX premium license in your Unified CCX.</p>

Report	Description
Overall Chat Cisco Unified Contact Center Express Stats	Provides information about Chat Unified CCX resources and contact information. This report is available only if Unified CCX has been configured.
Overall Cisco Unified Contact Center Express Stats	Provides information about Unified CCX resources and calls. This report is available only if Unified CCX has been configured.
Resource Cisco Unified Contact Center Express Stats	Provides information about Unified CCX resources activity.
Sessions	Provides information on all active sessions.

Related Topic

[Report Menu, on page 174](#)

Open Real-Time Reports

Real-Time reporting is available from the Unified CCX Administration web interface.

Real-Time Reporting requires the Java plug-in. If the Java plug-in is not already installed on the PC on which you are viewing the reports, the Unified CCX system automatically installs it when you choose **Tools > Real Time Reporting**.



Note

- Use Mozilla Firefox and Internet Explorer for Real Time Reporting.
- If you are using Mozilla Firefox, you must manually install the correct version of JRE to use real-time reports.

The Application Reporting web page is a stand-alone component of the Unified CCX Administration interface. It has its own menu bar, which replaces the Unified CCX Administration menu bar.

To open real-time reporting, complete the following steps.

Procedure

Step 1 If you are running Real-Time Reporting for the **first time** on this system, log into Unified CCX Administration as an **Administrator**.

The system prompts you to download the Java plug-in; follow the prompt instructions.

Note After you perform the initial download of the Real-Time Reporting Java plug-in, non-Administrative users can access Real-Time Reporting on this system.

Step 2 Choose **Tools > Real-Time Reporting** from the Unified CCX Administration menu bar.

The Application Reporting web page opens in a new window. The real-time reporting tool requires a Java plug-in. If the plug-in is not installed on the machine you are using, the Unified CCX system prompts you to

accept the automatic installation of the plug-in. If you do not accept the installation, you cannot use real-time reporting.

Run Reports

Open the real-time reporting tool from the Unified CCX Administration web interface to run reports.

To run a real-time report, complete the following steps.

Procedure

Step 1 From the Application Reporting menu bar, choose **Reports**.

Step 2 From the Reports menu, choose the report to run.

The report opens in the Application Reporting window.

View Detailed Subreports

You can view more detailed information for selected items in these four reports:

- Application Tasks report
- Contacts report
- Applications report
- Sessions report

To view detailed subreports, complete the following steps.

Procedure

Step 1 Run the Application Tasks, Contacts, Applications, or Sessions report.

Step 2 Click a line in the report for which you want to view more detailed information. For example, click an email address in the Contacts report.

Step 3 From the Application Reporting menu bar, choose **Views** and click the subreport that you want to run.

You can also open a subreport by right-clicking the selected item and choosing a subreport.

The subreport opens.

Print Reports

To facilitate printing, you can open a printable version of a report.

To print a report, complete the following steps.

Procedure

- Step 1** Run a report.
- Step 2** From the Application Reporting menu, choose **Tools > Open Printable Report**.
A printable version of the report opens in a separate window.
- Step 3** Print the report using your browser print functionality.
-

Reset Report Statistics

The Unified CCX system automatically resets all statistics each day at midnight. You can reset the accumulated statistics manually at any time. Resetting statistics does not reset active statistics, such as active contacts and active tasks.

To reset report statistics, complete the following steps.

Procedure

- Step 1** From the Application Reporting menu bar, choose **Tools > Reset All Stats**.
The Reset Stats dialog box opens for you to confirm the reset.
- Step 2** Click **Yes**.
Accumulated statistics are reset.
-

Clear Contact Option for Stuck Calls

You may sometimes see a Contact/Call as waiting in Real Time Reports in CSQ Stats, and even though there are available Agents in the queue, the call does not seem to get routed to these Agents. The waiting time for the Queued call accumulates and will not clear even if the user activates “Reset All Stats” option from the Real-Time Reporting menu.

To enable clearing such stuck call entries from the system, Unified CCX system provides the Clear Contact option. This has the ability to clear stuck calls in the system without requiring a restart of the engine.

Set Report Options

You can set the following reporting options:

- Refresh interval
- Number of times that the Unified CCX Administration web interface should attempt to reconnect to the Unified CCX server
- Whether logged off users appear in reports

To set report options, complete the following steps.

Procedure

- Step 1** From the Application Reporting menu bar, choose **Settings > Options**.
The Options dialog box opens.
- Step 2** From the Polling Interval drop-down menu, choose the refresh rate in seconds.
- Step 3** From the Server Connect Retry Count drop-down menu, choose the number of times that the Unified CCX Administration web interface should attempt to reconnect to the Unified CCX server.
- Step 4** From the Show Logged Off Resources drop-down menu, choose whether logged-off agents appear in reports.
- Step 5** Click **Apply** to apply the settings.
-

Set Report Appearance

You can select from three report appearances:

- **Windows**, which displays reports in colors based on your Windows settings
- **Motif**, which displays reports in purple and menu items in brown
- **Metal**, which displays reports in grey and menu items in black

To set the report appearance:

Procedure

Choose **Settings** from the Application Reporting menu bar and click the appearance that you want.

Application Reporting User Interface



Note Support for High Availability and remote servers is available only in multiple-server deployments.

When you choose **Tools > Real-Time Reporting** from the Unified CCX Administration menu, the Application Reporting tool opens a web page in a new window.

The Application Reporting tool menu bar contains the following options:

- **Report**—Choose this option to display a list of the available top-level real-time reports.
- **Tools**—Choose this option to reset all the statistics and refresh connections.
- **Settings**—Choose this option to set the look and feel of the real-time Reporting client, set the polling (refresh) interval times, and set the amount of times the server will attempt to reconnect.
- **Help**—Choose this option to display system information and to access Unified CCX online help.

Report Menu



Note All real-time reports display a **Last Updated At** field, which indicates the time of the snapshot. All summary reports display both a start time (which indicates when the summary statistics started being collected) and the current time. All real-time reports display a Connected or Not Connected status for each node in the cluster.

The Report menu provides access to a variety of top-level reports. It contains the following menu options:

- [Contacts Summary Real-Time Report, on page 175](#)
- [Application Tasks Summary, on page 177](#)
- [Application Tasks Real-Time Report, on page 177](#)
- [Engine Tasks Real-Time Report, on page 178](#)
- [Contacts Report, on page 178](#)
- [Applications Report, on page 183](#)
- [Sessions Report, on page 183](#)
- [Data Source Usage Report, on page 184](#)
- [Overall Cisco Unified Contact Center Express Stats Report, on page 184](#)
- [CSQ Cisco Unified Contact Center Express Stats Report, on page 188](#)
- [Preview Outbound Campaign Cisco Unified Contact Center Express Stats Report, on page 190](#)
- [Outbound Campaign Stats Report, on page 195](#)
- [Overall Outbound Stats Report, on page 198](#)
- [Resource Cisco Unified Contact Center Express Stats Report, on page 199](#)
- [Failover Behavior for Unified CCX Stats, on page 201](#)

High Availability (HA) Setup

In an HA setup, real-time reports obtain data from both nodes in the cluster.



Note

- Support for High Availability and remote servers is available only in multiple-server deployments.
- In case of island mode where each node (on either side of the network) assumes mastership and handles calls, the real-time reports may not report accurate data.

Failover in a two-node cluster is available for Unified IP IVR reports as described in the following table.

Failover Scenario	Connection Status	Node 1 Status	Node 2 Status
Both nodes are up	Fully Connected	Node ID current/start-time	Node ID current/start-time

Failover Scenario	Connection Status	Node 1 Status	Node 2 Status
Node 1 is up Node 2 is down	Partially Connected	Node ID current/start-time	Node ID Not Connected
Node 1 is down Node 2 is up	Partially Connected	Node ID Not Connected	Node ID current/start-time
Both nodes are down	Not Connected	Node ID Not Connected	Node ID Not Connected

Unified CCX real-time reports obtain data only from the current master node—failover in a two-node cluster is available as described in the following table.

Failover Scenario	Connection Status	Node 1 Status	Node 2 Status
Both nodes are up Node 1 is master	Fully Connected	Node ID current/start-time	Node ID Not Connected
Node 1 is master Node 2 is down	Fully Connected	Node ID current/start-time	Node ID Not Connected
Node 1 is down Node 2 is master	Fully Connected	Node ID Not Connected	Node ID current/start-time
Both nodes are down	Not Connected	Node ID Not Connected	Node ID Not Connected

Contacts Summary Real-Time Report

Use the Contacts Summary report to view specific contact information for call contacts, email contacts, HTTP contacts, and total number of contacts.

To access the Contacts Summary real-time report, choose **Reports > Contacts Summary** from the Application Reporting menu bar.



Note You display the data on this report as numbers or percentages by clicking the Display Value/Display % toggle button.

The following fields are displayed on the Contacts Summary report.

Field	Description
Active	Active contacts that are currently running.
Inbound	Number of inbound contacts since the statistics were last reset.
Outbound	Number of outbound contacts since the statistics were last reset.

Field	Description
Connected	<p>Number of connected contacts since the statistics were last reset.</p> <p>Provides a total for contacts that are connected to resources (for example, a call connected to an ACD agent).</p>
Terminated	<p>Number of terminated contacts since the statistics were last reset.</p> <p>This row reports contacts that are ended normally by the application (for example, a caller hangs up and the application terminates), indicating whether the contact was terminated:</p> <ul style="list-style-type: none"> • Locally—On the local server. • Remotely—On a remote server in the cluster. <p>Note Use the + toggle button to access these statistics.</p>
Rejected	<p>Number of rejected contacts since the statistics were last reset.</p> <p>This row reports contacts that are not accepted and processed (as a result, for example, of insufficient resources or the rejection of the contact based on some customer-defined logic). Indicates the reason code for the reject:</p> <ul style="list-style-type: none"> • Channels busy • No channel license • No trigger <p>Note Use the + toggle button to access these statistics.</p>
Aborted	<p>Number of aborted contacts since the statistics were last reset.</p> <p>This row reports contacts improperly ended by a task associated with the application (as when, for example, the system generates an exception or can not invoke the application because of some error in the application) and includes the associated Java exception code.</p> <p>Note Java exception codes are dynamic, as they can be generated from a variety of sources.</p> <p>Note Use the + toggle button to access these statistics.</p>

Field	Description
Handled	Number of handled contacts since the statistics were last reset. This row reports contacts that are explicitly marked “Handled” by the application (typically when the application connects the contact to a Unified CCX agent).
Abandoned	Number of abandoned contacts since the statistics were last reset. This row reports contacts that end without being marked “Handled” by the application.

Application Tasks Summary

Use the Application Tasks Summary report to display statistics that summarize the activity of specific applications.

To access the Application Tasks Summary real-time report, choose **Reports > Application Tasks Summary** from the Application Reporting menu bar.

The following fields are displayed on the Application Tasks Summary report.

Field	Description
Application Name	Names of the applications that are running or have run.
Running	Currently running applications.
Completed	Applications that have stopped running.
Total	Number of times an application was invoked since the statistics were last reset.
DTMF VB and AA	Application names configured from the Unified CCX Administration.
Status	Displays the failover connection status. The possibilities are: Fully connected, Partially connected, and Not connected. See the following tables for detailed status information for Unified IP IVR and Unified CCX reports.

Application Tasks Real-Time Report

Use the Application Tasks real-time report to view information about currently active applications.

To access the Application Tasks report, choose **Reports > Application Tasks** from the Application Reporting menu bar. The following fields are displayed on the Application Tasks report.

Field	Description
ID	Unique application task ID.
Node ID	Unique ID for a server in the cluster.
Application	Name of the application.
Start Time	Time when the application task started.
Duration	Length of time that the application has been active.



Note If this report indicates that an application is running for an unusually long time, there may be a problem with the application. The application script may not include error handling that prevents infinite retries if a call is no longer present. If the application does not receive a disconnect signal after a call, the application repeatedly retries to locate the call, and causes the application to run for an unusually long time. To prevent this problem, include the proper error handling in the application script.

Engine Tasks Real-Time Report

Use the Engine Tasks real-time report to view information about currently active Engine tasks.

To access the Engine Tasks report, choose **Reports > Engine Tasks** from the Application Reporting menu bar.

The following fields are displayed on the Engine Tasks report.

Field	Description
ID	Unique identifier of the engine task. If the engine task is the main task running the application and the parent ID is empty, its identifier will match the Application Task Identifier.
Parent ID	Unique identifier for the parent of the engine task (if any).
Node ID	Unique identifier for a server in the cluster.
Server IP Address	IP address identifying the server in the cluster.
Script	Name of the script that is running the task (if the task is running a Unified CCX script).
Start Time	Time that the task started.
Duration	Length of time the task has been active.

Contacts Report

Use the Contacts real-time report to view information for all the active contacts for all servers across clusters.



Note Support for High Availability and remote servers is available only in multiple-server deployments.

To access the Contacts report, choose **Reports > Contacts** from the Application Reporting menu bar.

You can access detailed information about specific contacts listed on the Contacts web page by performing one of the following procedures:

- [Call Contacts Detailed Info Report, on page 180](#)
- [Email Detailed Info Report, on page 180](#)
- [HTTP Detailed Info Report, on page 181](#)

The following fields are displayed on the Contacts report.

Field	Description
ID	Unique identifier representing a contact.
Type	Type of contact: Unified CM Telephony call, Cisco agent call, or
Impl ID	Unique identifier provided by the particular type of contact. For example, for a call contact, this identifier would represent the Unified CM global call ID.
Node ID	Unique identifier for a server in the cluster.
Start Time	Time stamp when the contact was created.
Duration	Length of time that the contact is active.
Handled	If True, the contact is handled; if False, the contact is not handled.
Aborting	If True, the contact is aborted with a default treatment; if False, the contact is not aborted.
Application	Name of the application currently managing the contact.
Task	Unique identifier of the application task that is currently responsible for the contact.
Session	Unique identifier of the session currently managing the contact (if any).



Note The information displayed is dependent on the type of contact selected. Depending on the type of call, some fields may not be supported and will appear blank.

Call Contacts Detailed Info Report

Use the Call Contacts Detailed Info real-time report to view all information related to the call contact.

To access the Call Contacts Detailed Info report, right-click a specific call contact record on the Contacts report; information for that specific record displays.

The following fields are displayed on the Call Contacts Detailed Info report.

Field	Description
State	Current state of the contact.
Inbound	If True, this call was received by the Unified CCX server; if False, this call was placed as an outbound call by an application.
Language	The selected language context of the call.
Application ID	Unique identifier of the associated application.
Called Number	Called number for this call leg from the perspective of the called party.
Dialed Number	Dialed number for this call leg from the perspective of the calling party.
Calling Number	Calling number of the originator of this call.
ANI	Automatic number identification.
DNIS	Dialed number identification service.
CLID	Caller ID.
Arrival Type	Information on how the call contact arrived in the system.
Last Redirected Number	Number from which the last call diversion or transfer was invoked.
Original Called Number	Originally called number.
Original Dialed Number	Originally dialed number.
ANI Digits	Automatic Number Identification information indicator digit codes.
CED	Entered digits that were gathered by the network before the call was received.

Email Detailed Info Report

Use the Email Detailed Info real-time report to view all information related to the email contact.

To access the Email Detailed Info report, right-click a specific email contact record on the Contacts report; information for that specific record displays.

The following fields are displayed on the Email Detailed Info report.

Field	Description
State	Current state of the contact.
Inbound	If True, this email message was received by the Unified CCX server; if False, this email was created by an application. Note Inbound email messages are not currently supported.
Language	Selected language context of the email message.
Application ID	Unique identifier of the associated application.
From	Sender of this email message.
To	All the recipients of this email message.
Subject	“Subject” field of this email message.
Attachments	List of all attachments (file names) associated with this email message.

HTTP Detailed Info Report

Use the HTTP Detailed Info real-time report to view all information related to the HTTP contact.

To access the HTTP Detailed Info report, right-click a specific HTTP contact record in the Contacts report; information for that specific record displays.

The following fields are displayed on the HTTP Detailed Info report.

Field	Description
State	Current state of the contact.
Inbound	If True, this HTTP request was received by the Unified CCX server; if False, this HTTP request was created by an application. Note This information will always be reported as True, because the Unified CCX server does not currently track outbound HTTP requests in this way.
Language	Language currently associated with the HTTP request.
Application ID	Unique identifier of the associated application.
Authentication Type	Name of the authentication scheme used to protect the servlet; for example, “BASIC” or “SSL.”

Field	Description
Character Encoding	Length, in bytes, of the request body, which is made available by the input stream, or -1 if the length is not known. Note This length is the same as the value of the CGI ² variable CONTENT_LENGTH.
Content Length	MIME type of the body of the request, or null if the type is not known. Note This is the same as the value of the CGI variable CONTENT_TYPE.
Content Type	Type of HTTP contact request.
Request Language	Preferred language for client content (the language that the client accepts for its content), based on the Accept-Language header.
Path Info	Any extra path information associated with the URL the client sent when the HTTP request was made.
Protocol	Name and version of the protocol the request uses in the form: <i>protocol/majorVersion.minorVersion</i> ; for example, HTTP/1.1 Note This value is the same as the value of the CGI variable SERVER_PROTOCOL.
Remote Address	IP address of the client that sent the request Note This value is the same as the value of the CGI variable REMOTE_ADDR.
Remote Host	Fully qualified name of the client that sent the request, or the IP address of the client, if the name cannot be determined Note This value is the same as the value of the CGI variable REMOTE_HOST.
Remote User	Login of the user making this request, if the user has been authenticated.
Requested Session ID	HTTP session ID as specified by the client.
Request URL	Section of the URL of the HTTP request, from the protocol name up to the query string in the first line of the HTTP request.

² CGI = Common Gateway Interface

Applications Report

Use the Applications real-time report to view all the applications loaded on the server.

To access the Applications report, choose **Reports > Applications** from the Application Reporting menu bar.

The following fields are displayed on the Applications report.

Field	Description
Name	Unique name of the currently loaded application.
ID	Application ID.
Type	Type of application that is currently running (for example, a Cisco Script Application).
Description	Description of the application as entered on the Unified CCX Administration web site.
Enabled	If True, the application is enabled; if False, the application is disabled.
Max. Sessions	Maximum number of simultaneous task instances that can run simultaneously on the Unified CCX server.
Valid	If True, the application is valid; if False, the application is invalid. ³

³ An application is valid if it was successfully loaded and initialized from its configuration. At any time, an application can become invalid if it internally fails to be refreshed.

Sessions Report

Use the Sessions real-time report to view real-time information on all the active sessions.

To access the Sessions report, choose **Reports > Sessions** from the Application Reporting menu bar.

The following fields are displayed on the Sessions report.

Field	Description
ID	Session ID. Note This identifier is guaranteed to remain unique for a period of 12 months.
Mapping ID	User- or system-defined identifier that maps to this session.
Node ID	Unique identifier for a server in the cluster.
Parent	Sessions that were created as a result of consult calls propagated in the system.
Creation Time	Creation time of the session.

Field	Description
State	<p>Current state of the session.</p> <p>Note When marked IDLE, the session is subject to being “garbage collected” by the system after a specified period of time. In addition, a session is IN_USE if it still has a contact associated or a child session.</p>
Idle Time	Length of time that the session has been idle.

Data Source Usage Report

Use the Data Source Usage real-time report to view real-time information on all configured Data Source Names (DSNs).

To access the Data Source Usage report, choose **Reports > Datasource Usage** from the Application Reporting menu bar.

The following fields are displayed on the Data Source Usage report.

Field	Description
Data Source Name	Name of the data source, as configured through the Unified CCX Administration web interface.
Available Connections	Number of connections available.
Busy Connections	<p>Number of busy connections.</p> <p>Note Busy + available = Maximum number of connections configured.</p>
Checkouts Granted	Number of times the database connections have been used up since the statistics were last reset.
Checkouts Denied	Number of times the Database connections have been denied since the statistics were last reset.

Overall Cisco Unified Contact Center Express Stats Report

Use the Overall Cisco Unified Contact Center Express Stats real-time report to view real-time Unified CCX resource and call information.



Note Unified CCX reports contain information for calls that have been queued in one or more CSQs. If a call is not queued (for example, the caller hangs up before being queued), the reports do not display data for that call.

Unified CCX reports retrieve the following statistics:

- Unified CCX statistics from the current Master node.

- Unified IP IVR statistics from all nodes in the cluster.

To access the Overall Unified CCX Stats report, choose **Reports** > **Overall Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.



Note Preview Outbound durations are updated when the preview outbound call disconnects and all agents (resources) involved in the call move out of the Work and Talking state.

The following fields are displayed on the Overall Cisco Unified Contact Center Express Stats report.

Field	Description
Resource Information	
CSQs	Number of CSQs currently configured. If a CSQ is added or removed, this statistic reflects that change.
Logged-in Resources	Number of resources currently logged in.
Talking Resources	Number of resources currently talking. Note This number includes resources in Talking, Work, and Reserved states.
Ready Resources	Number of resources currently ready.
Not Ready Resources	Number of resources currently not ready.
Call Information — Inbound	
Total Contacts	Number of total contacts that have arrived since the statistics were last reset. This includes contacts that are waiting, contacts connected to a resource, and contacts that have disconnected. If a resource transfers to or conferences with a route point, this value increases.
Contacts Waiting	Number of contacts waiting to be connected to a resource. Note A contact is shown as waiting until the call is <i>answered</i> by the agent. This means that, even if the phone is ringing at the agent, the contact will still show as waiting in RTR.
Oldest Contact in Queue	Displays the wait time for the oldest contact in the queue.
Contacts Handled	Number of contacts that have been handled by a resource.

Field	Description
Contacts Abandoned	Number of contacts that have arrived and disconnected before being connected to a resource.
Avg Talk Duration	Average duration (in seconds) that resources spend talking on Unified CCX contacts. Talk duration starts when a contact first connects to a resource and ends when the contact disconnects from the last resource to which it was connected. Talk duration does not include hold time.
Avg Wait Duration	Average wait time (in seconds). It begins when the contact enters the system and ends when the contact stops waiting. Wait duration does not include hold time. The time a contact spends on a CTI port prior to getting queued is included in this report.
Longest Talk Duration	Longest talk duration (in seconds) of a contact. Talk duration does not include hold time.
Longest Wait Duration	Longest wait (in seconds) for a contact to be connected to a resource. Wait duration does not include hold time.
Call Information — Preview Outbound	
Active	Total number of preview outbound calls currently previewed or connected to agents.
Preview	Total number of preview outbound calls currently previewed but have not been accepted, rejected, or closed by the agents.
Connected	Total number of preview outbound calls currently connected to agents. When an agent conferences in other agents, the call is counted once towards the total number of connected calls.
Offered	Total number of preview outbound calls offered. A call is considered offered when it is presented to an agent. A contact that is presented to an agent, skipped/rejected by that agent, and then presented to the same agent or to another agent is counted twice towards the number of calls offered. Offered = Accepted + Rejected + Closed + Timed-out.

Field	Description
Accepted	Total number of preview outbound calls accepted. A call is considered accepted if an agent has clicked Accept when presented the call. A call that is presented to an agent, skipped/rejected by that agent, presented to another agent, and then accepted by that other agent is counted once towards the number of calls accepted.
Rejected	<p>The number of preview outbound calls that were skipped or rejected by an agent. This means that the agent selected Reject, Skip, or Cancel Reservation. These contacts will be dialed again. If a contact is rejected by multiple agents, this field increments each time the contact is rejected.</p> <p>The number Rejected is also incremented each time an agent drops the preview call while it is ringing at the customer's contact.</p>
Closed	The number of preview outbound contacts that were closed by agents. This means that the agent selected Skip-Close or Reject-close. These contacts will not be dialed again.
Timed-Out	Total number of preview outbound calls that timed out. A call is considered timed out when it is presented to an agent and not accepted, rejected, or closed within the allocated time. These contacts will be dialed again. If a contact timed out multiple agents, this field is incremented each time the contact is timed out for each agent.
Invalid Number	<p>The number of preview outbound calls that were dialed to an invalid number. This means that the agent accepted the call (by clicking Accept), got connected to the customer, and selected the Invalid Number option from the contact Reclassification drop down. It also includes the number of preview outbound calls that failed at the network level.</p> <p>Note The agent can manually reclassify the contact as Invalid Number while the customer contact is on the call or when the agent has gone into the Work state after the call.</p>
Voice	The number of preview outbound calls that ended in successful customer contact. This means that an agent accepted the call (by clicking Accept) <i>and</i> selected a classification of Voice (default) or Do Not Call for this contact.

Field	Description
Answering Machine	<p>The number of preview outbound calls that connected to an answering machine for this campaign. This means that the agent accepted the call (by clicking Accept), got connected to the answering machine and selected the Answering Machine option from the contact Reclassification drop down.</p> <p>Note The agent can manually reclassify the contact as Answering Machine while the customer contact is on the call or when the agent has gone into the Work state after the call.</p>
Requested Callback	<p>The number of contacts marked for callback. This means that the agent accepted the call (by clicking Accept), got connected to the contact, the contact requested a callback, and the agent selected the CallBack option. A call that is accepted by an agent, marked for callback, later presented to and accepted by another agent (at the callback time), and marked for callback again is counted twice towards the number of callback calls.</p>
Avg Outbound Talk Duration	<p>The average time in HH:MM:SS (hours, minutes, seconds) that agents spend talking on outbound calls. The durations consider all calls that were Agent Accepted and classified as Voice. If a preview outbound call is transferred or conferenced to a route point, this average outbound talk duration does not include the talk time of agents who handle the call after it came through the route point. Instead, the talk time is included in the inbound talk duration.</p>
Longest Outbound Talk Duration	<p>The longest talk duration of a preview outbound call in HH:MM:SS (hours, minutes, seconds). The durations consider all calls that were Agent Accepted and classified as Voice.</p>

CSQ Cisco Unified Contact Center Express Stats Report

Use the CSQ Cisco Unified Contact Center Express Stats real-time report to view real-time information.



Note

Unified CCX reports contain information for calls that have been queued in one or more CSQs. If a call is not queued, the reports do not display data for that call. .

To access the CSQ Cisco Unified Contact Center Express Stats report, choose **Reports > CSQ Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.

The following fields are displayed on the CSQ Cisco Unified Contact Center Express Stats report.

Field	Description
Name	Name of the CSQ.
Talking/Ready Resources/Not Ready Resources/Logged-In Resources	<p>Number of resources who are in the talking, ready, and not ready states, and the number of resources logged in for this CSQ. Values for the four items are separated by colons. Values are displayed in the same order that the items appear in the column heading.</p> <p>Note This number includes resources in Talking, Work, and Reserved states. If you are logged into the Unified CCX Administration web interface as a Supervisor and opening the Real-Time Reporting plug-in, you will be able see all the logged in agents from all the teams independent of team membership.</p>
Total Contacts	Number of total contacts since the statistics were last reset for this CSQ.
Contacts Waiting	<p>Number of contacts waiting to be connected to a resource in this CSQ.</p> <p>This column also displays how long the oldest contact has been waiting.</p>
Contacts [oldest contact in queue]	Duration of longest currently waiting contact.
Contacts Handled	Number of contacts that have been handled by this CSQ.
Contacts Abandoned	Number of contacts that have been abandoned by this CSQ.
Contacts Dequeued	Number of contacts that have been dequeued from this CSQ.
Avg Talk Duration	Average time (in seconds) agents in this CSQ spent talking to contacts.
Avg Wait Duration	Average wait time (in seconds). It begins when the call was queued (when you execute the “Select Resource” step) and ends when the call reaches the agent. Wait duration does not include hold time. The time a contact spends on a CTI port prior to getting queued is not included in this wait time.
Longest Talk Duration	Longest time (in seconds) agents in this CSQ spend talking to contacts.

Field	Description
Longest Wait Duration	Longest wait (in seconds) for a contact to be connected to a resource.

Preview Outbound Campaign Cisco Unified Contact Center Express Stats Report

Use the Preview Outbound Campaign Cisco Unified Contact Center Express Stats real-time report to view real-time Unified Contact CCX information for the Outbound preview dialer.

To access the Preview Outbound Campaign Cisco Unified Contact Center Express Stats report, choose **Reports > Preview Outbound Campaign Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.

The following fields are displayed on the Preview Outbound Campaign Cisco Unified Contact Center Express Stats report.

Field	Description
Campaign	The name of the preview outbound campaign.
Status	The current activation state of the preview outbound campaign: <ul style="list-style-type: none"> • Running: an active preview outbound campaign • Stopped: an inactive preview outbound campaign
Active	Total number of outbound calls currently previewed by or connected to agents for this preview outbound campaign. Active Calls = Previewed + Connected.
Preview	Total number of outbound calls currently previewed but have not been accepted, rejected or closed by the agents as part of this preview outbound campaign.
Connected	Total number of outbound calls currently connected to agents for this preview outbound campaign. When an agent conferences in other agents, the call is counted once towards the total number of connected calls.
Offered	Total number of outbound calls offered for this preview outbound campaign. A call is considered offered when it is presented to an agent as part of this preview outbound campaign. A contact that is presented to an agent, rejected by that agent, and then presented to the same agent or to another agent is counted twice towards the number of calls offered. Offered = Accepted + Rejected + Closed + Timed-out.

Field	Description
Accepted	Total number of outbound calls accepted for this preview outbound campaign. A call is considered accepted if an agent has clicked Accept when presented the call. A call that is presented to an agent, rejected by that agent, presented to another agent, and then accepted by that other agent is counted once towards the number of calls accepted.
Rejected	<p>The number of outbound calls that were rejected by an agent as part of this preview outbound campaign. This means that the agent selected Reject or Cancel Reservation. These contacts will be dialed again. If a contact is rejected by multiple agents, this field increments each time the contact is rejected.</p> <p>The number Rejected is also incremented each time an agent drops the preview call while it is ringing at the customer contact.</p>
Closed	The number of outbound contacts that were closed by agents as part of this preview outbound campaign. This means that the agent selected Reject-close. These contacts will not be dialed again.
Timed-Out	Total number of outbound calls that timed out. A call is considered timed out when it is presented to an agent and not accepted, rejected, or closed within the allocated time. These contacts will be dialed again. If a contact times out for multiple agents, this field is incremented each time the contact is timed out for each agent.
Invalid Number	<p>The number of outbound calls that were dialed to an invalid number for this preview outbound campaign. This means that the agent accepted the call (by clicking Accept), got connected to the customer, and selected the “Invalid Number” option from the contact Reclassification drop down. It also includes the number of outbound calls that failed at the network level.</p> <p>Note The agent can manually reclassify the contact as Invalid Number while the customer contact is on the call or when the agent has gone into the Work state after the call.</p>
Voice	The number of outbound calls that ended in successful customer contact. This means that an agent accepted the call (by clicking Accept) <i>and</i> selected a classification of Voice or Do Not Call for this contact.

Field	Description
Answering Machine	<p>The number of outbound calls that connected to an answering machine for this preview outbound campaign. This means that the agent accepted the call (by clicking Accept), got connected to the answering machine and selected the Answering Machine option from the contact Reclassification drop down.</p> <p>Note The agent can manually reclassify the contact as Answering Machine while the customer contact is on the call or when the agent has gone into the Work state after the call.</p>
Requested Callback	<p>The number of contacts marked for callback for this preview outbound campaign. This means that the agent accepted the call (by clicking Accept), got connected to the contact, the contact requested a callback, and the agent selected the CallBack option. A call that is accepted by an agent, marked for callback, later presented to and accepted by another agent (at the callback time), and marked for callback again is counted twice towards the number of callback calls.</p>
Avg Talk Duration	<p>The average time in HH:MM:SS (hours, minutes, seconds) that agents spend talking on outbound calls for this preview outbound campaign. The durations consider all calls that were Agent Accepted and classified as Voice. If a call is transferred or conferenced back to the route point, the preview outbound campaign talk duration does not handle the talk time of agents who handle the call after it came through the route point.</p>
Longest Talk Duration	<p>The longest talk duration of an outbound call in HH:MM:SS (hours, minutes, seconds) for this preview outbound campaign. The durations consider all calls that were Agent Accepted and classified as Voice.</p>

Chat CSQ Cisco Unified Contact Center Express Stats Report

Use the Chat CSQ Cisco Unified Contact Center Express Stats real-time report to view real-time queue information. This report is available in Cisco Unified CCX Premium license package.



Note Unified CCX reports contain information for a chat contact that are queued with a specific CSQ. If a contact is not queued, the reports do not display data for that chat contact.

To access the Chat CSQ Cisco Unified Contact Center Express Stats report, choose **Reports > Chat CSQ Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.

The following fields are displayed on the Chat CSQ Cisco Unified Contact Center Express Stats report.

Field	Description
Name	Name of the chat CSQ
Busy Resources/ Ready Resources/ Not Ready Resources/ Logged-In Resources	Number of resources who are in the Busy, Ready, and Not Ready states, and the number of agents logged in for this chat CSQ. Values for the four items are separated by colons. Values are displayed in the same order that the items appear in the column heading. Note If you are logged in to the Unified CCX Administration web interface as a supervisor and you open the Real-Time Reporting plug-in, you can see all the logged-in agents from all the teams.
Total Contacts	Number of total contacts presented to this queue since last reset of statistics.
Contacts Waiting [Oldest Contact in Queue]	Number of contacts waiting in this queue with the duration of longest waiting contact in this queue.
Contacts Handled	Number of contacts that have been handled by this queue since last reset of statistics.
Contacts Abandoned	Number of contacts that have been abandoned in this queue since last reset of statistics.
Avg Contact Handling Duration	Average time (in HH:MM:SS) agents in this CSQ spent chatting with contacts.
Avg Wait Duration	Average wait time (in HH:MM:SS) a contact spent in queue waiting for an agent.
Longest Contact Handling Duration	Longest time (in HH:MM:SS) agents in this CSQ spent chatting with contacts.
Longest Wait Duration	Longest wait (in HH:MM:SS) for a contact to be connected to an agent.

Chat Resource Cisco Unified Contact Center Express Stats Report

Use the Chat Resource Cisco Unified Contact Center Express Stats real-time report to view real-time Unified CCX chat resource information. This report is available in Cisco Unified CCX Premium license package.

To access the Chat Resource Cisco Unified Contact Center Express Stats report, choose **Reports > Chat Resource Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.

The following fields are displayed on the Chat Resource Cisco Unified Contact Center Express Stats report:

Field	Description
Name (ID)	Unique identifier of the resource.
State	Current state of the resource.

Field	Description
Current Active Contacts	Number of active contacts that the agent is handling.
Duration in State	Length of time (in HH:MM:SS) the resource has remained in the current state.
Avg Resource Busy Duration	Average time the agent spent with contacts. The resource busy duration is the elapsed time between the resource accepting the contact and completing the chat by clicking End.
Longest Resource Busy Duration	Longest time the agent spent with a contact. The resource busy duration is the elapsed time between the resource accepting the contact and completing the chat by clicking End.
Contacts Presented	Number of contacts that have been presented to this resource.
Contacts Handled	Number of contacts that have been handled by this resource.

Overall Chat Cisco Unified Contact Center Express Stats Report

Use the Overall Chat Cisco Unified Contact Center Express Stats real-time report to view real-time Unified CCX resource and contact information. This report is available in Cisco Unified CCX Premium license package.



Note Unified CCX reports contain information for contacts that have been queued in one or more CSQs. If a contact is not queued, the reports do not display data for that contact.

To access the Overall Chat Unified CCX Stats report, choose **Reports > Overall Chat Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.

The following fields are displayed on the Overall Chat Cisco Unified Contact Center Express Stats report.

Field	Description
Resource Information	
CSQs	Number of chat CSQs currently configured. If a chat CSQ is added or removed, this statistic reflects that change.
Logged-in Resources	Number of resources currently logged in.
Busy Resources	Number of resources currently busy.
Ready Resources	Number of resources currently ready.
Not Ready Resources	Number of resources currently not ready.
Contact Information	

Field	Description
Total Contacts	Number of total contacts that have arrived since the statistics were last reset. This includes contacts that are waiting, contacts connected to a resource, and contacts that have disconnected.
Contacts Waiting	Number of contacts waiting to be connected to a resource. Note A contact is shown as waiting until the contact is answered by the agent.
Oldest Contact in Queue	Displays the wait time for the oldest contact in the queue.
Contacts Handled	Number of contacts that have been handled by a resource.
Contacts Abandoned	Number of contacts that are routed to the CSQ since midnight but are abandoned due to one of the following: <ul style="list-style-type: none"> • Customer ended the chat as the chat was not answered by an agent. • Customer chat was disconnected. • No agents were available. • All agents were busy.
Avg Contact Handling Duration	Average duration (in HH:MM:SS) that resources spent chatting on Unified CCX contacts. Chat duration starts when a contact first connects to a resource and ends when the contact disconnects from the resource to which it was connected.
Avg Wait Duration	Average wait time (in HH:MM:SS). It begins when the contact enters the system and ends when either the contact is connected with an agent or if contact was disconnected.
Longest Contact Handling Duration	Longest contact handling duration (in HH:MM:SS) of a contact.
Longest Wait Duration	Longest wait (in HH:MM:SS) for a contact to be connected to a resource.

Outbound Campaign Stats Report

If you have an Outbound license, use the Outbound Campaign Stats report to view real-time statistics on each IVR-based and agent-based progressive and predictive Outbound campaign configured in Unified CCX. This report will be available only if you have an Outbound license on top of Unified CCX premium license in your Unified CCX.

To access the Outbound Campaign Stats report, choose **Reports > Outbound Campaign Stats** from the Application Reporting menu bar. The following fields are displayed on the Outbound Campaign Stats report.



Note The call related fields display the data from the time the statistics were last reset.

Field	Description
Campaign Name	The name of the IVR-based or agent-based progressive or predictive campaign.
Status	The current activation state of the campaign: <ul style="list-style-type: none"> • Running: an active IVR-based or agent-based progressive or predictive campaign. • Stopped: an inactive IVR-based or agent-based progressive or predictive campaign.
Campaign Type	The dialer type of the campaign, which can be one of the following: <ul style="list-style-type: none"> • IVR Progressive • IVR Predictive • Agent Progressive • Agent Predictive
Attempted	The total number of attempted calls. If there are no customer abandoned calls, then Attempted will be equal to sum of the following counters: Voice + Answering Machine + Invalid Number + Fax/Modem + No Answer + Busy + Failed.
Voice	The total number of calls that are connected to live voice. Note The call will be marked as System Abandoned after it has been marked as Voice and Active due to any of the following reasons: <ul style="list-style-type: none"> • Whenever there is an exception while executing some steps in an IVR script in case of IVR-based campaigns. For example, if there is any codec mismatch issue, there will be an exception in the Accept Step. In such cases, the same call will be marked in the following three categories voice, active, and system abandoned. • Whenever the call that is ringing on the agent's phone fails in case of agent-based campaigns.
Answering Machine	The total number of calls that reached an answering machine.

Field	Description
Invalid Number	The total number of calls that reached an invalid number: <ul style="list-style-type: none"> • A failed call when the gateway returns an invalid or not found error.
Fax/Modem	The total number of calls that reached fax or modem.
No Answer	The total number of calls that were not answered within the time configured for the No Answer Ring Limit field in the Add New Campaign web page.
Busy	The total number of calls that reached a busy destination.
Failed	The total number of calls that failed due to any one of the following reasons: <ul style="list-style-type: none"> • Dialer asked the Gateway to cancel a call that was dialed out, but not connected. • Gateway has declined the call. • Gateway failure or configuration issues at the Gateway. • Gateway is down.
Active	The total number of calls that were connected to IVR ports or agents. All the voice calls that will be connected to Outbound IVR ports or agents will be marked as active. If you have selected Answering Machine Treatment or Abandoned Call Treatment as "Transfer to IVR," the answering machine calls and abandoned calls that are getting transferred to Outbound IVR ports will also be marked as active.
Customer Abandoned	The total number of calls that were disconnected by the customer or agent within the Abandoned Call Wait Time configured in Add New Campaign web page.
System Abandoned	The total number of calls that were abandoned due to any of the following reasons: <ul style="list-style-type: none"> • Non-availability of ports or agents. • Any issues at system level.
Abandon Rate (in %)	Abandon Rate = (System Abandoned/Voice)*100

**Note**

- If you have selected Answering Machine Treatment as "End Call" for an IVR or agent based outbound campaign through Campaign Configuration web page, then Voice = Active + System Abandoned.
- If you have selected Answering Machine Treatment or Abandoned Call Treatment as "Transfer to IVR" for an IVR or agent based outbound campaign through Campaign Configuration web page, then Voice + Answering Machine = Active + System Abandoned.

Overall Outbound Stats Report

If you have an Outbound license, you can use the Overall Outbound Stats report to view real-time statistics across all IVR-based and agent-based progressive and predictive campaigns since the statistics were last reset. This report will be available only if you have an Outbound license on top of Unified CCX premium license in your Unified CCX.

To access the Overall Outbound Stats report, choose **Reports > Overall Outbound Stats** from the Application Reporting menu bar. The following fields are displayed on the Overall Outbound Stats report for all the configured IVR-based and agent-based Outbound campaigns.

**Note**

The call related fields display the data from the time the statistics were last reset.

Field	Description
Attempted	The total number of attempted Outbound calls.
Voice	The total number of Outbound calls that were connected to live voice.
Answering Machine	The total number of Outbound calls that reached answering machine.
Invalid Number	The total number of Outbound calls that reached an invalid number.
Fax/Modem	The total number of Outbound calls that reached fax or modem.
No Answer	The total number of Outbound calls that were not answered.
Busy	The total number of Outbound calls that reached a busy destination.
Failed	The total number of failed Outbound calls for all IVR and agent based Outbound campaigns.
Active	The total number of Outbound calls that were connected to Outbound IVR ports or agents.

Field	Description
Customer Abandoned	The total number of Outbound calls that were abandoned by the customer or disconnected by the agent.
System Abandoned	The total number of Outbound calls that were abandoned by the system.

Resource Cisco Unified Contact Center Express Stats Report

Use the Resource Cisco Unified Contact Center Express Stats real-time report to view real-time Unified Contact CCX agent information.

To access the Resource Cisco Unified Contact Center Express Stats report, choose **Reports > Resource Cisco Unified Contact Center Express Stats** from the Application Reporting menu bar.



Note If multiple lines are configured for an agent, only the calls on the agent's primary extension are reported in Resource Cisco Unified Contact Center Express Stats report.

The following fields are displayed on the Resource Cisco Unified Contact Center Express Stats report.

Field	Description
Name (ID)	Unique identifier of the agent.
State	Current state of the agent.
Duration in State	Amount of time (in seconds) the agent has remained in the current state.
Contacts Presented	Number of contacts presented to the agent.
Contacts Handled	Number of contacts handled by the agent.
Avg Talk Duration	Average time (in seconds) the agent spent in talking state.
Avg Hold Duration	Average time (in seconds) the agent keeps calls on hold.
Longest Talk Duration	Longest time (in seconds) the agent spent in talking state.
Longest Hold Duration	Longest time (in seconds) the agent keeps a call on hold.

Field	Description
Outbound Offered	Total number of preview outbound calls offered to the agent. A call is considered offered when it is presented to an agent. The number of calls offered is counted twice if a contact that is presented to an agent is skipped/rejected by that agent and then the contact is presented to the same agent or to another agent. Offered = Accepted + Rejected + Closed + Timed-out.
Outbound Accepted	Total number of outbound calls accepted by the agent. For transferred or conferenced outbound calls, the call is considered accepted if it is answered by the agent. A preview outbound call is considered accepted if an agent has clicked Accept to accept the call and then the system places the call to the customer. The number of calls accepted is counted once if a call that is presented to an agent is skipped/rejected by that agent and then the call is presented to another agent who accepts the call. A progressive or predictive outbound call is considered accepted if an agent has answered a live voice call that is presented to the agent (if Agent AutoAnswer is disabled).
Outbound Rejected	The number of preview outbound calls skipped/rejected by the agent. This means that the agent selected Reject, Skip, or Cancel Reservation. These contacts will be dialed again. The number of calls rejected is also incremented each time an agent drops the preview call while it is ringing at the customer's contact.
Outbound Closed	The number of contacts closed by the agent for preview outbound. This means that the agent selected Skip-Close or Reject-close. These contacts will not be dialed again.
Outbound Timed-Out	Total number of preview outbound calls that timed out. A call is considered timed out when the call is presented to an agent but not accepted, rejected, or closed within the allocated time. These contacts will be dialed again. If a contact timed out for multiple agents, this field is incremented each time the contact is timed out for each agent.
Outbound Voice	The number of preview outbound calls that ended in successful customer contact for the agent. This means that the agent accepted the call (by clicking Accept) <i>and</i> selected a classification of Voice or Do Not Call for this contact.

Field	Description
Outbound Avg Talk Duration	The average time in HH:MM:SS (hours, minutes, seconds) that the agent spends in talking state for outbound calls. This talk duration also includes the time spent on outbound calls that were transferred or conferenced to a route point. For preview outbound, the talk duration considers all calls that were Agent Accepted and classified as Voice.
Outbound Avg Hold Duration	The average time in HH:MM:SS (hours, minutes, seconds) that the agent spent in holding an outbound call. For preview outbound, the hold duration considers all calls that were Agent Accepted and classified as Voice.
Outbound Longest Talk Duration	The longest time in HH:MM:SS (hours, minutes, seconds) that the agent spent in talking state for an outbound call . For preview outbound, the talk duration considers all calls that were Agent Accepted and classified as Voice.
Outbound Longest Hold Duration	The longest time in HH:MM:SS (hours, minutes, seconds) that the agent spent in holding an outbound call. For preview outbound, the hold duration considers all calls that were Agent Accepted and classified as Voice.

Failover Behavior for Unified CCX Stats

All failovers, regardless of whether the Unified CCX Engine is restarted, will cause the Unified CCX stats to reset.

The Unified IP IVR stats do not reset in all cases if the Unified CCX Engine is not restarted on a node. However, the node loses its active server status. The Unified IP IVR stats on that node will not be reset.

Tools Menu

The Tools menu gives you access to the following Application Reporting tools:

- **Reset All Stats**—Choose this option to reset all statistics.
- **Open Printable Report**—Choose this option to get a printable report of all currently active contacts in the system.
- **Refresh Connections**—Choose this option to refresh connections with the Unified CCX system.

- **Clear Contact**—Choose this option to clear contacts/calls that have been stuck in the system for a long time.

Reset All Statistics

Use the Reset All Stats option to reset all statistics accumulated since the last time the statistics were reset. It will not reset active statistics, such as active contacts, tasks, and so on.



Note The Unified CCX system automatically resets all statistics each day at midnight.

Procedure

Choose **Tools > Reset All Statistics** from the Application Reporting menu bar.

Open Printable Report

Use the option to get a printable report of all currently active contacts in the system.

To get a printable report:

Procedure

Choose a real-time report from the Report menu option and then **Tools > Open Printable Report** from the Application Reporting menu bar.

Refresh Connections

To refresh connections with the Unified CCX system:

Procedure

Choose **Tools > Refresh Connections** from the Application Reporting menu bar.

The Unified CCX system refreshes all connections.

Clear Contact Menu

You can use the Clear Contact menu option to clear contacts in the following three situations:

Clear Stuck Calls from Sontacts Real-Time Report

To clear stuck calls or contacts from the Unified CCX system:

Procedure

- Step 1** Choose the contact from **Reports > Contacts**.
- Step 2** From the Application Reporting menu bar, choose **Tools > Clear Contact**. A Clear Call dialog box is displayed to warn you. If you want to continue with the clear action, click **No**. To cancel the action, click **Yes**.
- Step 3** Click **No** to proceed with the clear action. A Clear Contact dialog box is displayed for you to confirm the action. You can click **Yes** to proceed or **No** to cancel.
- Step 4** Click **Yes**. The Unified CCX system removes the contact from all its queues.
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Clear Stuck Calls from Overall Cisco Unified CCX Stats

To clear stuck calls/contacts from the Unified CCX system:

Procedure

- Step 1** Choose **Reports > Overall Cisco Unified Contact Center Express Stats**.
- Step 2** Choose the contact from **Views** and click **Overall Waiting Contacts Info**.
- Note** Please note that the Overall Waiting Contacts Info menu option displays only those calls that are queued in CSQs and not agent-based routing calls.
- Step 3** From the Application Reporting menu bar, choose **Tools** and click **Clear Contact**. A Clear Call dialog box is displayed to warn you. If you want to continue with the clear action, click **No**. To cancel the action, click **Yes**.
- Step 4** Click **No** to proceed with the clear action. A Clear Contact dialog box is displayed for you to confirm the action. You can click **Yes** to proceed or **No** to cancel.
- Step 5** Click **Yes**. The Unified CCX system removes the contact from all its queues.
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Clear Stuck Calls from CSQ Cisco Unified CCX Stats

To clear stuck calls or contacts from the Unified CCX system:

Procedure

- Step 1** Choose **Reports > CSQ Cisco Unified Contact Center Express Stats**.
- Step 2** Choose the contact from **Views** and click **CSQ Waiting Contacts Info**.
- Step 3** From the Application Reporting menu bar, choose **Tools > Clear Contact**. A Clear Call dialog box is displayed to warn you. If you want to continue with the clear action, click **No**. To cancel the action, click **Yes**.
- Step 4** Click **No** to proceed with the clear action. A Clear Contact dialog box is displayed for you to confirm the action. You can click **Yes** to proceed or **No** to cancel.
- Step 5** Click **Yes**. The Unified CCX system removes the contact from all its queues.
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Views Menu

The Views menu allows you to access more detailed information for the following reports: The Application Tasks report, the Contacts report, the Applications report, the Sessions report, Overall Cisco Unified Contact Center Express Stats report, and the CSQ Cisco Unified Contact Center Express Stats report.



Note For some reports, detailed information is also available by right-clicking a record in that report.

The Views menu contains different options, depending on the report you have chosen. Possible options are:

- **Contacts by Application Task ID**—Choose this option to view contacts according to Application Task ID numbers.
- **Engine Tasks by Application Task ID**—Choose this option to view Engine tasks according to Application Task ID numbers.
- **Detailed Info**—Choose this option to view more detailed information on selected reports.
- **Application Tasks by Application Name**—Choose this option to view application tasks by application name.
- **Contacts by Session ID**—Choose this option to view contacts by session ID.
- **Overall Waiting Contacts Info**—Choose this option to view detailed information for the overall waiting contacts. To clear stuck calls in this view, see Scenario 2 in **Clear contact menu** option.
- **CSQ Waiting Contacts Info**—Choose this option to view detailed information for the CSQ waiting contacts. To clear stuck calls in this view, see Scenario 3 in **Clear contact menu** option.

Application Tasks

You can obtain reports based on the application task ID associated with application tasks.

Contacts by Application Task ID

This report displays the same report as the Contact report with the exception that the Contacts by Application Task ID report has been filtered using only the contact currently being managed by the selected application task.

Engine Tasks by Application Task ID

This report displays the same report as the Engine Task reports except that the Engine Tasks by Application Task ID report has been filtered to display only the engine tasks that are associated with the application task.

Contacts

When you use the Views options with the Contacts report, the Views menu contains only the Detailed Info option.

The Detailed Info option provides various detailed information, depending on the type of contact selected. For example, if the contact is a call, the Calling Party number, the Called Number, and so on, are displayed for that particular call.

Applications

When you use the Views options with the Application reports, the Views menu contains only the Application Tasks by Application Name option.

The Application Task By Application Name report displays the same report as the Application Task report except that the Application Task By Application Name report is filtered using only the active application tasks associated with this application.

Sessions

You can obtain reports based on the session ID associated with a session.

Contacts by Session ID

This report displays the same report as the Contact report with the exception that the Contacts By Session ID report is filtered using only the contacts associated with the selected session.

Detailed Info

Detailed info displays the time the session was created and its current state.

Settings Menu

The Settings menu of the Application Reporting menu bar allows you to adjust various settings of the Real Time Reporting tool.

The Settings menu contains the following menu options:

- **Options**—Choose this option to set the polling (refresh) interval times and to set the amount of times the server will attempt to reconnect.
- **Window**—Choose this option to display reports in colors based on your Windows settings.
- **Motif**—Choose this option to display reports in purple and menu items in brown.
- **Metal**—Choose this option to display reports in grey and menu items in black.

Options Menu

Choose **Settings** and click **Options** to access the Options dialog box. Use the Options dialog box to set the polling (refresh) interval time, set the number of times the server will attempt to reconnect, and specify whether logged off agents appear in reports.

The following fields are displayed in the Options dialog box.

Field	Description
Polling Interval	Time between two requests to the server for new statistics by the client.
Server Connect Retry Count	The number of times that the Unified CCX Administration web interface should attempt to reconnect to the Unified CCX server. Note If an error occurs, an Error dialog box opens to alert you that the server is not communicating with the web interface.

Field	Description
Show Logged Off Resources	Specifies whether logged off agents appear in reports.

Click **Apply** to submit configuration changes.

Reporting Administration on Unified Intelligence Center

Overview

Unified Intelligence Center is the default reporting solution for Unified CCX. Unified Intelligence Center is a comprehensive, end-to-end reporting solution.



Note Do not access Unified Intelligence Center until you complete the post installation tasks for Unified CCX.

Live Data reports can only be run by agents, supervisors, and reporting users.



Note The maximum number of users who can concurrently run Live Data reports is 42 .

For more information, see the following guides:

- *Cisco Unified Contact Center Express Report User Guide*, located at: https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_user_guide_list.html.
- *Cisco Unified Contact Center Express Report Developer Guide*, located at: https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_programming_reference_guides_list.html



Note Historical Reporting Client (HRC) is not available from 10.0(1).

Cisco Finesse

You can configure the Live Data reports that are to be displayed in the gadgets of the Cisco Finesse desktops.

Start Unified Intelligence Center

Procedure

Step 1 Open a web browser.

Step 2 Access `http://<host address>` and click **Cisco Unified Contact Center Express Reporting**.

Note Host address is the DNS name or IP address of the Unified CCX node.

Step 3 Enter your username and password.

Step 4 Click **Log In**.

Administrator Overview

Access to the functions in the Unified Intelligence Center reporting application is controlled by the one or more users who have the user role of Security Administrator.

The initial, default Security Administrator is the user defined as the System Application User during the installation.

Security Administrators can:

- Create and maintain users.
- Assign User Roles—User roles are assigned to users to control access to drawers and what objects the user can create.
- Assign users to User Groups.
- Create and maintain user groups.
- Assign Permissions—Whereas User Roles are associated with people, permissions are associated with objects (Dashboards, Reports, Report Definitions, Data Sources, Value Lists, and Collections).
- Use the Run As feature to verify other users' permissions.

Security Overview

Unified Intelligence Center security offers multi-layered and flexible functionality that allows a security administrator to create a flat or a tiered structure of access to Unified Intelligence Center functions, based on the organization's needs.

A user's access to Unified Intelligence Center functions is based on:

- Login authentication.
- User Role (a user can have one, some, or all seven User Roles).
- User Groups in which user is a member.
- For an object the user can access, the *object-level permissions* assigned by the person who created that object.

User List

User List page opens from the Security drawer. If a user who does not have the Security Administrator user role accesses this page, that user can see all the parameters except the user roles. The user cannot change his role or group membership.

When Security Administrators access this page, they can see all existing users; can create users, modify or delete users, review or edit user information, and use the **Run As** feature to work in Cisco Unified Intelligence Center as a user.

Table 10: Fields on User List Page

Field	Explanation
Only show currently active users	Check the check box to display users who are currently active.
Name Contains	Use this filter field to narrow the list of names or to move to a specific name.
User Name	The domain and user name (domain\name).
First Name	The user's first name.
Last Name	The user's last name.

You can perform the following actions on the user lists page:

- **Create**—Opens the User Information page.
- **Edit**—Select a user name and click **Edit** to edit the User Information page.
- **Delete**—Select a user and click **Delete** to delete the user.
- **Run As**—Select a user and click **Run As** to refresh the Cisco Unified Intelligence Center reporting interface.
- **Refresh**—Refreshes the page to show any latest changes to the User List.
- **Page**—Click the arrow to move to the next page of the User List.
- **Help**—Opens online help.
- **X**—Closes the page.

Create a User

To create a user, perform the following procedure:

Procedure

Step 1 Navigate to **Security > User List**.

Step 2 Under the General Information tab, perform the following:

- a) In the **User Name** field, enter the domain and user name (domain\name).
- b) In the **Alias** field, enter the alias name for this user.
- c) Check the **User is active** check box to enable the user to log in and remain active.

Note If the check box is unchecked, the user cannot log in.

- d) In the **First Name** field, enter the first name of the user.
- e) In the **Last Name** field, enter the last name.
- f) In the **Organization** field, enter the company name or other descriptive text to be associated with the user, such as region or Line of Business.

- g) In the **Email** field, enter the email address of the user.
- h) In the **Phone** field, enter a phone number for the user. This can be the user's personal phone number or an emergency contact.
- i) In the **Description** field, enter the description of the user.
- j) In the **Time Zone** field, choose the time zone that you want to use in the report from the drop-down list.

This time zone is also used for the user's scheduled reports and takes precedence over the time zone used by the report server.

Note If this field is left blank, the system uses the time zone of the report server.

- k) For **Start Day of the Week**, perform the following:
 - Select **Locale Based** to select starting day of the week based on locale.
 - Select **Custom Settings** to choose one of the seven days of the week from the drop-down list.

Note Start Day Of The Week is used in Scheduled Report, Report Views, and Permalink.

- l) In the **Roles** field, select and assign one or more roles for this user.

If the Security Administrator adds or changes User Roles, the change does not take effect until the user logs out and then logs in again.
- m) In the **Permissions** field, choose the user's permission setting preference for My Group when creating new objects. My Group is the object owner's default group.

Note Settings for My Group configures whether other users who belong to this user's default group can write, or execute the objects. Higher level permissions persist and override other permissions.

Step 3 Under the Groups tab, you can determine which groups this user is a member of and how to add group membership(s) for a user. You can view the following:

- **My Group:** This field shows the user's default group. The Security Administrator can change it. The group is represented as "My Group" for the user.
- **Available Groups:** This list shows all the groups that have been created and that the user is not yet a member of. You can use arrows to move groups between columns.
- **Selected Groups:** This column shows all the groups that the user is a member of. You can use arrows to move groups between columns.

Note By default, every user has AllUsers in their Selected Groups column. You cannot remove the AllUsers group from the Selected Groups column.

User Groups

User Groups page opens from the Security drawer. Use it to see the existing groups, to create or delete groups, and to review or edit group information.

The following are the two default groups created by the system:

- The *AllUsers* group is supplied by Unified Intelligence Center. All users belong to this group by default.
- The *Administrators* group consists of administrators.

Table 11: Fields on the User Groups Page

Field	Explanation
Name Contains	Use this filter field to narrow down the list of group names or to move to a specific name.
Name	Name of the group.
Full Name	The full name shows the child relationship of a group, as indicated by a dot separator. For example, if the default group for Group3 is Group1, and Group1 is a top level group (does not have a parent), then the Full Name of Group1 is <i>Group1</i> . The Full Name of Group 3 is <i>Group1.Group3</i> .
Description	Description text of the group.

You can perform the following actions on the User Groups page:

- **Create**—Opens the Group Information page.
- **Edit**—Select the group name and click Edit to open the Group Information page.
- **Delete**—Select the group name and click Delete.
- **Refresh**—Refreshes the page to show any changes to the Group List.
- **Help**—Opens online help.
- **X**—Closes the page.

About User Groups

User Groups are constructs that allow security administrators to partition Unified Intelligence Center functionality.

Creating User Groups expedites the process of provisioning users when multiple users need the same access to dashboards and reports, or when users require distinct permissions and features based on regional or organizational requirements.

User groups have no impact on how data is stored in the database. They are used only for assigning permissions to all the user members of the group through one operation instead of repeating the same operation for each user.

System-Defined All Users Group

All users are automatically a member of the system-defined *All Users* group.

All Users always appears on the Manage User Groups window. The security administrator cannot delete it.

System-Defined Administrator User Group

The security administrator is automatically a member of the system-defined Administrators group and can add other security administrators to it.

Additional Security Administrators must be added to the Administrators group. Having the role does not automatically make them members of that group.

Customer-Defined User Groups

Security administrators can create any number of user groups and can add users to them. From those other user groups, one is designated as the user's *Group* (also called *My Group*).

Default Group

After creating the customer-defined groups, the security administrator can add a user to any of these groups and can configure one of them as the user's default Group (My Group). The All Users group can also be selected as the default group.

The owner of an object can set permission for its Group. Only the Security Administrator can set extra permissions to other groups or individual users on the User Permissions page. A user's access permission to an object is the highest level of the permission that user gets from all the permission sources.

Create a User Group

To create a user group, perform the following:

Procedure

- Step 1** Navigate to **Security > User Groups**.
- Step 2** Under the General Information tab, perform the following:
- In the **Group Name** field, enter the name of the group. This field is available only when you create a new group.
 - In the **Description** field, enter or modify text to describe this group
- Step 3** Under the Groups tab, perform the following:
- Default Group**—From the drop-down list, enter the default group.
 - Available Groups**—Lists the groups that were created and that are available for this group to become a child of. Click **> or <** to move just that group or groups.
 - Selected Groups**—Lists the groups that this group is a child of. Click **> or <** to move just that group or groups.
- Step 4** Under the Groups Members tab, perform the following:
- Under **Users** tab:
 - Available Users**—Lists all the users that were created and that are available to be children of this group. Click **> or <** to move just that group or groups.
 - Selected User Members**—Lists the users that are currently children of this group. Click **> or <** to move just that group or groups.
 - Under **Groups** tab:

- **Available Groups**—Lists all the groups that were created and that are available to be children of this group. Click > or < to move just that group or groups.
- **Selected Groups Members**—Lists the groups that are currently children of this group. Click > or < to move just that group or groups.

Step 5 Click **Save** to update new entry or changes to the fields.

Step 6 Click **Cancel** to cancel or close the page.

Manage User Permissions

Use this page to set extra permissions to Groups or to individual users.

User permissions page has the following tabs:

About Permissions

User Roles are associated with people and permissions are associated with objects. Unified Intelligence Center objects are Dashboards, Reports, Report Definitions, Data Sources, Categories, Value Lists, and Collections.

Permissions:

- **EXECUTE**: When the user has EXECUTE permissions for an object, that user can perform some actions that depend on the object.

For example, with EXECUTE permission, a user can run, print, and refresh a report, open and refresh a dashboard and run a dashboard slide show, and see a Value List query. EXECUTE permission includes the read permission.



Note Permissions set on categories are not recursive. For all entities under Dashboard, Report, or Report Definition types, you need separate EXECUTE/WRITE permissions.

- **WRITE**: When the user has WRITE permission for an object, that user can alter, rename or delete the object. For example, With WRITE permission, you Save As, import, and export reports; you can edit a data source and can delete a custom Value List. WRITE permission also includes EXECUTE and read permission.



Note If no check boxes are selected when setting permission for an object, the user has no access privileges to the object.

The following rules are applicable for all category trees in Unified Intelligence Center — Reports, Report Definitions, Dashboards.

- To delete an entity, you need WRITE permissions for the entity and the entity's parent category.
- To delete a category, you need WRITE permissions for the category, the category's parent, and all the categories and/or entities belonging to the category.

- A user can only Edit or Save an entity even if the immediate parent category has no WRITE permissions.
- A user can only use the Save As feature if the entity has no WRITE permissions enabled.
- Any category owner within the **Imported Report Definitions** can delete a category if the administrator provides explicit WRITE permissions on the **Imported Report Definitions** category.

Permissions are combined and the highest level prevails.

A user receives permission for an object from different sources. Permission can be inherited from the AllUsers group, the Default Group (My Group), or the permission assigned by the Security Administrator. Among all these permissions, the highest level permission is used when the user accesses the object.

User Roles and Permissions

Your User Role allows you to “open” the drawer that corresponds to that role. If you have EXECUTE permission, you can create objects for that drawer. For example, if you are a Dashboard Designer, you can create dashboards on the Available Dashboards page.

When you create an object, you are the *owner* of that object. You have WRITE permission for the object, and you can set the permissions for that object for users in your Group only.

If the object is still a work-in-progress and you do not want anyone to access it yet, you can make it “private” by leaving all permissions unchecked for both the All Users and the Groups.

When the object is ready, set your default Group (My Group) permissions to EXECUTE or even WRITE. For example, if you create a Dashboard for your Group and the dashboard has notes, you might want others in your Group to update the notes.

Even though *you* are a Dashboard Designer, if the Available Dashboards page contains dashboards created by (owned by) other Dashboard Designers, you may not be able to see those dashboards, based on your Group permissions and on the object-level permissions those owners have set for their dashboards.

Assigned Group Permissions

Procedure

-
- Step 1** Select the object type in the Permissions For panel. For Dashboard, Report or Report Definition type, you can select a category or an object within a category. For other object types, select an object from the list. All the groups that have already been assigned permissions for the object are displayed in the Group permissions for the selected item panel.
 - Step 2** Select a group in the All Groups panel. All user members of this group are displayed in the All Users for the selected group panel.
 - Step 3** Click **Set Permissions**. Check the level you want for the group (Execute, Write), and click **OK**.
 - Step 4** The **Group Permissions for the selected item** panel updates to include the group and its assigned permission you defined in **Step 3**.
-



Note If the Security Administrator adds or changes User Permissions, the change may not occur immediately.

Table 12: Fields on the Group Members Tab

Field	Description
Permissions For panel (top left)	Click the drop-down list to select the objects for which you want to set permissions. Options are: Data Sources, Report Definitions, Reports, Dashboards, Value Lists, and Collections. Selecting an object type refreshes the panel to show the list of items or categories for that object.
All Groups panel (top right)	This panel shows the available User Groups. Highlighting a user group refreshes the page to display an All Users for Selected Group panel that lists the member of the group.
All Users for the Selected Group panel (bottom right)	This panel shows all members in the group that is highlighted in the All Groups panel above.
Set Permissions button	Click this option to open a dialog box where you select the permission level for the selected object in the Permissions For panel and the selected group in the All Groups panel.
Group Permissions for the selected item	This panel shows the groups that have already been assigned permission for the selected object, and their permission level.

Assigned User Permissions

Procedure

-
- Step 1** Select the object type in the Permissions For panel. For Dashboard, Report, or Report Definition type, you can select a category or an object within a category. For other object types, select an object from the list. All the users that have already been assigned permission for the object are displayed in the User permissions for the selected item panel.
- Step 2** Select a user name in the User List panel.
- Step 3** Click **Show Groups** to see the groups for which this user is a member.
- Step 4** Click **Set Permissions**, check the level you want for this user (Execute, Write), and click **OK**.

The **All Permissions for the selected item** panel refreshes to show the user permissions you have added or changed for this user in steps 3 and 4.

Field	Description
Permissions For panel (top left)	Click the drop-down arrow to select the kinds of object for which you want to set permissions. Options are Data Sources, Report Definitions, Reports, Dashboards, Value Lists, Collections, and System Collections. Selecting an object type refreshes the panel to show the list of items or categories for that object.
User List panel (top right)	This panel shows current users. Filter the list and select one or many user names.

Field	Description
Show Groups button	Click this option to show the All Groups for the selected user panel.
All Groups for the selected User (bottom right)	This panel shows all groups to which the highlighted username in the User List panel above is a member.
Set Permissions button	Click this option to open a dialog box where you select the permission level for the object (Execute, Write).
All Permissions for the selected item	This panel shows users who have permission for the object, and the level of permissions they have.

Note You cannot change the permission for the owner of an object. The owner always has Write permission for the object. For example, if a user is the owner of Report 1, then that user has WRITE permission for Report 1, and no one else can change the permission to EXECUTE.

Run As

Security Administrators can select a name on the User List page and click **Run As**. This refreshes the Unified Intelligence Center web page so that it reflects the interface that user has when logged in.

Use this tool to verify that the User Roles and permissions are configured properly.



- Note**
- When you Run As another user, the top of the page shows both your Logged In identity and your Run As identity.
 - You cannot Run As yourself.
 - You can Run As one level of user. A Security Admin cannot *Run As* User A and, as User A, then *Run As* User B.

To leave Run As mode, click **Stop Run As** at the top of the page.

Audit Trail Logging in Cisco Unified Intelligence Center

Unified Intelligence Center now supports Audit Trail Logging. This feature allows you to view the sequence of audit records of the transactions related to create, update, modify, and delete that are performed on the entities of a Unified Intelligence Center server. You can view the audit trails using the Audit Trail stock report. Only System Administrators can access and view this feature by default. However, a System Administrator can then give permissions to other Unified Intelligence Center users to use this feature.



Note Localization of Audit Trail report is not supported.

View Audit Trail Logging in Unified Intelligence Center

Procedure

- Step 1** Log in to the Unified Intelligence Center Reporting Interface.
- Step 2** Navigate to **Reports > Stock > Intelligence Center Admin** and click **Audit Trail**. The system opens the **Audit Trail Report Filter** window.
- Step 3** Specify the required filter criteria and click **Run**. The system displays the Audit Trail report based on the filter criteria that you specified.
-

Audit Trail Report

Views: This report has three grid views - Non-grouped, Groupby – EntityName, Groupby –Username.

Grouping: This report has two grouped views - grouped and sorted by User and Entity Name. The third view is un-grouped which is also the default view for this report.

Value List: CUIC Users, CUIC Operations, CUIC Entity Types.

Database Schema Tables from which data is retrieved:

- CUICAUDITLOG
- CUICLOGEDENTITY

Security Considerations

If you make the user a member of one or more other groups, make one of those groups the user's default group, and set the permissions for the default group higher than those of the AllUsers group.

Higher permissions for the default group prevail over permissions in the AllUsers group. Individual user permissions prevail over group permissions.



CHAPTER 13

Unified CCX Outbound Dialer Configuration

- [Outbound Feature for Unified CCX, on page 217](#)
- [Supported Dialers and Dialing Modes for Outbound, on page 220](#)
- [Configure Outbound Subsystem in Unified CCX, on page 222](#)
- [Configure General Outbound Properties, on page 222](#)
- [Configure Application and Trigger for Outbound Campaign, on page 227](#)
- [Add New Campaign, on page 228](#)
- [Import Contacts for Campaign, on page 237](#)
- [Enable Campaigns, on page 238](#)
- [Outbound Subsystem and Time Detection, on page 239](#)
- [Add Area Codes, on page 240](#)
- [Call Status Values, on page 240](#)
- [Call Result Values, on page 242](#)
- [Reclassification Status Behavior, on page 244](#)
- [Call Retrieval Priority, on page 244](#)
- [Failover and System Restarts, on page 245](#)

Outbound Feature for Unified CCX

The Outbound feature provides outbound dialing functionality in addition to existing Unified CCX inbound capabilities.

The Unified CCX Direct Preview Outbound feature is bundled along with the Unified CCX Premium license package. The Unified CCX IVR and Agent Progressive and Predictive Outbound feature is available with the Unified CCX Outbound license. When you upload the Premium license, the Outbound subsystem will automatically appear in the Subsystems menu. With this Outbound feature, you can maintain high agent productivity by configuring contact centers for automated Outbound activities to perform Outbound calls.

Outbound Characteristics

The Outbound feature has the following characteristics:

- An Outbound subsystem that can be monitored from the control center
- IVR and Agent Progressive and Predictive Outbound
- Dialing modes - Direct preview, Progressive and Predictive

- Unified CCX Administration web pages, REST API to configure the Outbound feature
- Outbound Historical reports
- Outbound Live Data reports (Unified Intelligence Center)
- Real-Time reports are part of the Unified CCX Administration GUI real-time reporting applet



Note Calls made by the Outbound subsystem will not be displayed in the Contacts Summary Real-Time Report

- Access to real-time Outbound data from the GetReportingStatistics step for Direct Preview Outbound

Unified CCX Requirements

To use the Outbound feature, you must adhere to the following requirements:

Unified CCX Licensing Requirements

The licensing requirements for Outbound feature in Unified CCX will vary depending on the dialing modes.

- **For Unified CCX Outbound Direct Preview Dialer**—The Unified CCX Outbound Direct Preview Dialer feature is automatically available with Premium license package without any additional license. It is no longer available with Enhanced license.
- **For Unified CCX Outbound IVR Dialer**—You need to upload an Outbound license on top of the Unified CCX premium license with the required number of IVR ports that you would like to use for the Outbound feature.
- **For Unified CCX Outbound Agent Dialer**—You need to upload an Outbound license on top of the Unified CCX premium license with the required number of agent seats that you would like to use for the Outbound feature.



Note The sum of inbound and outbound IVR ports should be less than or equal to a maximum number of IVR ports supported for your hardware model.

You can view the licensed IVR ports for outbound and inbound and the dedicated ports for both outbound and inbound calls by navigating to **System > License Information > Display License(s)** submenu from the Unified CCX Administration menu bar.

Scenario 1:

If your Contact Center is already utilizing maximum licensed IVR ports supported for your hardware model, then:

- Inbound calls will take precedence over the configured Outbound IVR calls.
- If IVR ports are dedicated for a campaign, then the Outbound IVR ports available for the campaign will be gradually incremented as and when the inbound ports become free.

For example, if you have an UCS C220 hardware that supports maximum of 300 IVR ports and if you have 200 premium seats, then the current licensed IVR ports = 300 (Minimum of [seats*2, maximum supported for platform]).

In this case, if you upload an Outbound add-on license for 100 IVR ports and add 3 campaigns with 20 dedicated ports each running at the same time, then the 60 Outbound IVR ports will be available to the campaigns only when the number of inbound ports are freed up to support the Outbound IVR calls.

In other words, if the number of inbound ports that are used during the outbound IVR campaign time is 280, then only 20 Outbound IVR ports will be available to the campaigns. The number of Outbound IVR ports will be gradually incremented depending on the availability of free inbound ports.

Scenario 2:

If your Contact Center is close to utilizing the maximum IVR ports supported for your hardware model, then:

- Inbound calls will take precedence over the configured Outbound IVR calls.
- If IVR ports are dedicated for a campaign and if you reach the maximum inbound call limit, then the Outbound IVR ports available for the campaign will be gradually incremented as and when the inbound ports become free.

For example, if you have an UCS C220 hardware that supports a maximum of 300 IVR ports and if you have 130 premium seats, then the current licensed IVR ports = 260 (Minimum of [seats*2, max supported for platform]).

In this case, if you upload an Outbound add-on license for 50 IVR ports and add 2 campaigns with 25 dedicated ports each running at the same time and if you reach the inbound call limit of 260 during the outbound IVR campaign time, then only 40 ports (300-260) will be freed up initially for Outbound IVR calls. The number of Outbound IVR ports will be gradually incremented depending on the availability of free inbound ports.

Scenario 3:

If your Contact Center is using fewer ports than the maximum licensed ports supported for your hardware model, then the number of available IVR ports for inbound will continue to remain the same.

For example, if you have an UCS C220 hardware that supports maximum of 300 IVR ports and if you have 60 premium seats, then the current licensed IVR ports = 120 (Minimum of [seats*2, max supported for platform]).

In this case if you upload an Outbound add-on license for 50 IVR Outbound ports, and add 2 campaigns with 20 dedicated ports each running at the same time, then Unified CCX will support 40 IVR Outbound calls, and the inbound port limit will continue to be 120 as the sum of both inbound and outbound ports (160) are within the maximum licensed ports (300) for the platform.



Note The total number of dedicated IVR ports in all the IVR campaigns must be less than twice the number of Premium Seats that is equivalent to the Total Licensed Inbound IVR ports.

Unified CCX Subsystem Requirements

- The Outbound subsystem must be IN SERVICE.
- The RmCm subsystem must be IN SERVICE.
- The Unified CM Telephony subsystem must be IN SERVICE.

- The Unified CCX Database must be IN SERVICE.

Geographic Region Support

- The Outbound feature can be used in any geographic region supported by Unified CCX. The area codes and time zones mapping for North America are automatically prepopulated in the system. The system uses this information to determine the time zone of a customer's phone number.
- For regions outside North America, administrators must enter the mapping of the international area codes and their time zones using the Unified CCX Administration GUI or REST API.
- The national do_not_call list is not supported in this release. Be sure to abide by the national do_not_call list.



Note In this guide, the underscore character linking each word differentiates the national do_not_call list from the Outbound subsystem's Do Not Call list.

Outbound Components

This section provides details about the following Outbound feature components:

- Unified CCX Administration—Enables the Outbound subsystem configuration, creates campaigns, and imports contacts to generate the dialing list.
- Outbound subsystem—Is responsible for the following tasks:
 - Manages campaigns
 - Maintains Outbound system configurations
 - Manages the dialing list
 - Reserves agents
 - Makes Outbound calls
 - Updates the call data in the dialing list based on the outcome of the call
 - Decides which contact records to retrieve from a campaign

The Outbound subsystem views campaigns as logical entities that group a set of contacts together in a dialing list. Campaigns deliver outgoing calls to agents. Agents are assigned to campaigns using CSQs.

Supported Dialers and Dialing Modes for Outbound

In addition to the existing Direct Preview Outbound dialer option, Unified CCX supports IVR-based and agent-based dialing. If you select the IVR-based option for a campaign, the outbound calls are handled by IVR scripts. If you select the agent-based option for a campaign, the outbound calls are handled by agents. Typical applications include appointment and bill-payment reminders.

Unified CCX Outbound Dialing Modes

The Outbound feature in Unified CCX Release supports the following dialing modes:

- Direct preview dialing mode
- Progressive dialing mode
- Predictive dialing mode



Tip For agent predictive and agent progressive outbound calls, disable the Call Waiting option on the agent's phone to allow agents to preview a customer call on Cisco Finesse before the call is placed. The Call Waiting option must be disabled (default) in Unified Communications Manager on each Outbound agent phone to ensure that every customer call successfully transfers to an available agent.

When an Outbound call is transferred or conferenced to another agent, the second or subsequent agents are not counted towards the number of Outbound licenses. For example, if you have five seats licensed for Outbound and Agent1 gets an Outbound call, Agent1 accepts the call and conferences in Agent2 and Agent3. Now, three agents are on one Outbound call but only Agent1 is considered an Outbound agent and you are only using one licensed seat. Consequently, your system allows four more Outbound calls to agents.

Direct Preview Dialing Mode

The direct preview dialing mode allows agents to preview a customer call on Cisco Finesse before the call is placed. The advantage of this mode is that an agent is already on the call when the customer answers and can quickly begin talking with the customer immediately.

Progressive Dialing Mode

In the Progressive Dialing mode, you can specify a fixed number of lines that will always be dialed per available IVR port or per available agent. You can configure the progressive dialer settings for each campaign while creating the campaign through Unified CCX Application Administration web interface. You can also update the configuration at a later date.

Predictive Dialing Mode

The Predictive Dialing mode works similar to the Progressive Dialing mode in terms of dialing the Outbound calls. The difference remains in tuning the lines per port or per agent depending on the abandoned call-rate thus eliminating manual intervention as in the case of the Progressive Dialer.

In other words, in the Predictive Dialing mode, the Dialer adjusts the number of customers to dial per available IVR port or per available agent. The number of lines to dial is calculated by an algorithm and gets updated automatically.

Configure Outbound Subsystem in Unified CCX

Procedure

- Step 1** Configure the general properties of the outbound subsystem. See **Configure General Outbound Properties**.
 - Step 2** (Optional) If the dialing list contains contacts outside of North America or if Unified CCX is installed outside of North America, manually add the area codes and their corresponding time zones. See **Add New Area Code**.
 - Step 3** Configure the SIP Gateway parameters to enable communication between Unified CCX and the SIP gateway for IVR and agent-based progressive and predictive campaigns. See **Configure SIP Gateway**.
 - Step 4** Configure the campaign. See **Add New Campaign**.
-

Configure General Outbound Properties

General Outbound properties refer to the settings that is common for all the campaigns.



- Caution** Area code and long distance prefix configuration changes made to the Outbound subsystem do not take effect for the calls/contacts that are currently in the Outbound subsystem's memory. For example, if you change the long distance prefix or local area code, the contacts that are already in the Outbound subsystem's memory will continue to use the old long distance prefix and local area code.
-

To configure general Outbound properties, complete the following steps.

Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > General**.
The General Configuration web page opens.
- Step 2** Specify the following fields in the General Configuration section:

Field	Description
Customer Dialing Time Range (hh:mm) Start Time/End Time	<p>The time range during which a customer can be called. This time range supersedes the time range of the individual campaigns and ensures that a customer is never called outside the legally allowed time range for that country. This is a mandatory field.</p> <p>For example, in the USA, the Federal Communications Commission (FCC) specifies the legal time range as 8 AM to 9 PM. This does not apply to callbacks, since the customer explicitly requested to be called at a certain time. This time range is always converted to the local time for each contact record.</p> <p>Default = 8:00 AM to 9:00 PM (USA FCC regulations)</p>
Outbound Call Timeout (seconds)	<p>If an agent does not respond to the Outbound preview call on Cisco Finesse within the timeout duration that is specified in this field, the system sets the agent to the Not Ready state.</p> <p>If an agent does not respond to the Outbound progressive or predictive call on Finesse within the timeout duration that is specified in this field, then the call is dropped. The system sets the agent to the Ready or Not Ready state depending on the option that is selected for Agent State after Ring No Answer field in the System Parameters Configuration Web Page. This is a mandatory field.</p> <p>Default = 60 seconds, Range = 5 to 3600 seconds.</p> <p>Note</p> <ul style="list-style-type: none"> • This field is used only when Agent AutoAnswer is disabled for agent-based progressive and predictive outbound campaigns. • If the Unified CCX Engine or Finesse restarts when a call is being presented to an agent, then the timeout value specified in the Outbound Call Timeout field will not be applicable for that call.
Dialing Prefix	<p>The number that is prefixed to the phone number when the dialer dials an outgoing call (also referred to as switch prefix). This number can have a numeric value, including 0 or leading zeros. This is a user defined value.</p> <p>For example, if the dialing prefix is set as 9 and the phone number of the contact is 54321, then the dialer will dial out '954321'.</p>
Long Distance Prefix	<p>This is a user defined value that can have a numeric value, including 0 or leading zeros. When this value is set and an outgoing call is made, it helps to determine the long distance prefix in the phone number that is dialed by the dialer. It is first determined whether it is an international or domestic number by the presence of any matching International Prefix set in the General configurations page.</p> <p>When the phone number is a domestic number, based on the matching local area code set, it is determined if it is a local number or a long distance number.</p> <p>For example, if the long distance prefix is set as 044, the phone number of the contact is 54321, and if the Include Long Distance Prefix is enabled, then the dialer dials out '4454321'.</p>

Field	Description
International Prefix	<p>This is a user defined value that can have a numeric value, including 0 or leading zeros. When this value is set and an outgoing call is made, it helps to determine the international prefix in the phone number for that international number. If there is no International Prefix, then the number is considered to be a domestic number.</p> <p>If the imported number doesn't contain an international prefix but has a "+" sign prefixed to the phone number, then it is considered to be an international number.</p>
Local Area Code	<p>The area code of the location from where the PSTN call is made from. This number can have a numeric value, including 0 or leading zeros. The local area code when set in the General configurations page, helps to determine the prefix value in the domestic phone number which is included in the outgoing call if the Do Not Remove Local Area Code When Dialing is checked.</p>
Do Not Remove Local Area Code When Dialing	<p>If this box is checked, the local area code is included when dialing the phone numbers within this area code. If it is unchecked, then the local area code is stripped from the phone number before dialing the local numbers. It is expected that when contacts are imported into the system, the phone numbers include the area code. For international phone numbers, the country code must be included when importing contacts.</p>
Include Long Distance Prefix	<p>This field will be displayed only if you check the Do Not Remove Local Area Code When Dialing check box. For local numbers, the long distance prefix will be prefixed only if this check box is checked.</p> <p>The long distance prefix will be prefixed to the phone number for all non-local numbers (the numbers that do not start with local area code) irrespective of the status (checked/unchecked) of this check box.</p>
Agent AutoAnswer	<p>If this box is checked, any agent-based progressive or predictive campaign call that gets transferred to the agent is automatically answered by Unified CCX. This check box is checked by default.</p> <p>Note</p> <ul style="list-style-type: none"> • Either check this option in Unified CCX, or set Auto Answer to 'yes' in Unified Communications Manager. Do not select both of these options. • Enable Agent Autoanswer so that the call presented to the agent is automatically answered. A beep tone notifies the agent that the call has been answered. • If the workflow is enabled, it will be executed irrespective of the status (Checked/unchecked) of the AutoAnswer check box.

Field	Description
Assigned CSQs	<p>Assigned CSQs are CSQs that are used by the Outbound subsystem. This is a mandatory field. To allocate CSQs for Outbound:</p> <ol style="list-style-type: none"> 1. Select a CSQ in the Available CSQs list. 2. Select a value from the % of Logged in Agents for Outbound drop-down list to indicate what percentage of the CSQ is allocated for Outbound. 3. Click the left arrow icon to move the CSQ to the Assigned CSQs list. <p>The selected CSQ is removed from the Available CSQs box and appears in the Assigned CSQs box with the percentage allocation in parentheses next to the CSQ name.</p>
Available CSQs	The Available CSQs pane displays all CSQs configured in the CSQ Configuration page under the RmCm subsystem configuration.
% of Logged in Agents for Outbound	<p>The % of Logged in Agents for Outbound field indicates the percentage of logged in agents in each of the selected CSQs that are allocated for handling Outbound calls.</p> <p>Note The CSQ allocation percentage is defined at the global level and not at a campaign level.</p> <p>The number of agents allocated for OB is considered as the whole number of the % of Logged in Agents for Outbound. Any decimal value in the value is not considered. For example, If the percentage of allocation is 95% and 4 agents are logged in, then the number of agents allocated for OB are 3 [95% * 4 = 3.8 (decimal value is neglected)]. If the percentage of allocation is 80% and 4 agents were logged in, then the number of agents allocated for OB are 3 [(80% * 4 = 3.2 (decimal value is neglected))].</p>

Step 3 Click **Update** icon that is displayed in the tool bar in the upper, left corner of the window or the **Update** button that is displayed at the bottom of the window.

The System Options components are now updated.

Callbacks

A customer can request a callback at a specific callback phone number and also specify the time/date of the callback. The Outbound subsystem stores this information (the callback phone number, date, time) in the dialing list table.

The Outbound subsystem handles the callback as follows:

- Convert to GMT—The callback date and time specified with respect to the customer's time zone is converted to GMT time zone and then stored in the database.
- Agent not Available—When the Outbound subsystem looks up the database for contacts, it first checks the callbacks. The default callback time limit is 15 minutes (can be changed) before and after the

customer-specified time. If an agent is available, then the Outbound subsystem places the callback. If an agent is not available, the Outbound subsystem retries agent availability (agent state) after 10 minutes.

- **Missed Callbacks**—If the Unified CCX system is unable to process a callback request in the specified time, you have three action options:
 - Reschedule it to the same time on the next business day.
 - Mark it as another retry (the callback phone number is removed and the callback date time is ignored). In this case, it moves out of the call back state and into the retry state.
 - Close the record (never dialed again).



Note The selected status for the Missed Callbacks is applied at midnight.

- **Agent reclassifications**—If calls were retrieved and presented to the agent and if the agent reclassifies it (for example, changed it to answering machine status), then the call status is updated to the answering machine.

Outbound Area Code Functionality

In the Outbound option, the area code determines the geographical location of the phone number you dial, which correspondingly provides the Greenwich Meridian Time (GMT) zone. The db_cra database contains a mapping of the area codes to the time zones.

The U.S. area code mappings are provided along with the product. International customers should provide their own data and add it to the database.

Configuration Updates

Whenever Outbound parameters are modified in the Unified CCX Administration GUI, the changes take effect immediately. If a new CSQ is added using the **Subsystems > RmCm > Contact Service Queues** menu option, it is instantly displayed in the list of available CSQs in the General configuration page in the Unified CCX Administration GUI, as this list is dynamically updated. If a CSQ is modified and if this impacts the allocation of agents, the Outbound subsystem is aware of this change as it refreshes the list of agents in each relevant CSQ periodically.

- If a configuration change affects the Outbound contacts dialing process (for example, if a campaign is disabled or a CSQ is removed from a campaign), the Outbound subsystem stops processing the Outbound contacts, recalls these contacts to the database, and resets the call status to Pending.
- If a campaign start time is changed, the Outbound subsystem checks if the campaign is enabled. If it is enabled, and if the new start time is after the current time, it performs the following actions:
 - Sends a recall contact message to the Outbound subsystem passing the campaign ID.
 - For all Outbound contacts for this campaign in the Outbound subsystem's memory that are waiting to be dialed out, it resets all Outbound contacts to the Pending state and clears them from memory.

If the campaign is disabled or if the new start time is before the current time, the Outbound subsystem ignores this change.

- If campaign end time is changed, the Outbound subsystem checks if the campaign is enabled. If it is enabled, and if the new end time is before the current time, it performs the following actions:
 - Sends a recall contact message to the Outbound subsystem passing the campaign ID.
 - For all the Outbound contacts for this campaign in Outbound subsystem's memory that are waiting to be dialed out, it resets all the Outbound contacts to the Pending state and clears them from memory.

If the campaign is disabled or if the new end time is after the current time, the Outbound subsystem ignores this change.

- If a CSQ is deleted from a campaign or if the CSQ itself is deleted, the Outbound subsystem sends a recall contacts message with the csq ID of the deleted CSQ. It also reallocates any Outbound contacts in its memory that are currently allocated to this CSQ among the other existing CSQs for this campaign.

CSQ Agent Pool Allocation

You need to specify a percentage of total agents in the assigned CSQs to be allocated for Outbound calls. This pool of agents is shared by all Outbound campaigns.



Tip The CSQs for Outbound are the same as the CSQs for inbound. If you need more CSQs, you must first configure them in Unified CCX and assign the required CSQs for agents as required by your configuration, before allocating them.

Configure Application and Trigger for Outbound Campaign

For IVR campaigns, configure application and trigger before you create the campaign.

For an agent-based predictive campaign and an agent-based progressive campaign, configure the application and trigger if you configure the answering machine and the abandoned call treatment to transfer to IVR.

Procedure

- Step 1** Create a Call Control Group for Outbound type with the required number of IVR ports to be used for outbound campaigns. See **Add New Call Control Group**.
- Step 2** Create an application, which will be used for the outbound campaign. See **Cisco Applications Configuration**.
- Step 3** Create a trigger and assign the newly created Outbound Call Control group to this trigger. See **Cisco Applications Configuration**.
- Step 4** Create a new progressive or predictive outbound campaign. See **Add New Campaign**.
- Step 5** Import contacts for the campaign. See **Import Contacts for Campaign**.

Add New Campaign

Use the Campaign component to configure properties for the campaign, including the campaign name and description, CSQ selection, and the time range when a campaign can call contacts.

Complete the following steps to define or modify the settings that apply to a campaign.

Procedure

Step 1 From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > Campaigns**.

The Campaign web page opens, displaying the details of existing campaigns, if any. Click an existing campaign to view or update the configuration settings for the campaign.

Step 2 Click the **Add New** icon in the tool bar in the upper, left corner of the window or the **Add New** button at the bottom of the window.

Add a New Campaign web page opens up where you can specify the campaign type and the dialer type for the campaign using the following fields.

Note You need to upload an Outbound license on top of the Premium license for Unified CCX to create a campaign for Outbound.

Field	Description
Select the type of the campaign	
Campaign Type	Type of the campaign to be used for outbound calls. You can specify any one of the following two campaign types: <ul style="list-style-type: none"> • Agent-based—If you select this, all the outbound calls in a campaign will be handled by the available agents. • IVR-based—If you select the IVR-based option, the outbound calls in a campaign will be handled by the IVR scripts.
Select the type of dialer for the campaign	
Description	The dialer type options available for a campaign will vary depending on the selected Campaign Type. <ul style="list-style-type: none"> • If you select Agent-based campaign type, then you can select any one of the following dialer types: <ul style="list-style-type: none"> • Direct Preview (default) • Progressive • Predictive • If you select IVR-based campaign type, then you can select any one of the following dialer types: <ul style="list-style-type: none"> • Progressive (default) • Predictive

Note Once the campaign is created, you cannot change the Campaign Type and Dialer Type.

After you select the campaign type and dialer type, click **Next** to continue. The Campaign Configuration web page opens, displaying the following three column headings:

- Parameter Name
- Parameter Value
- Suggested Value

You can specify values for a new campaign or modify values for an campaign using the fields listed in the Parameter Value column. See the table below for a list of fields along with their description.

The Suggested Value displays the default configuration value for each campaign. You can refer to these values if you want to revert any changes made to one or more parameters listed in the Campaign Configuration web page.

Field	Description
Campaign Name	Name of the campaign (must be a unique identifier). This is a mandatory field.
Enabled	Indicates the current state of the campaign to the Outbound subsystem. Yes = The campaign is currently active. No = The campaign is currently inactive (default).
Description	Description of the campaign.
Start Time/End Time (hh:mm) AM PM Time Zone	Indicate the time range during which the campaign runs. These are mandatory fields. The name of the primary time zone is also displayed adjacent to these two field values. Default = 8:00 AM - 9:00 PM Pacific Standard Time (USA FCC regulations).
Campaign Calling Number	The campaign calling number is the number that will be displayed to the contact. This number is used by the dialer. This is a mandatory field. Note This field is not available if you have selected the direct preview dialer type for an agent based campaign.
Maximum Attempts to Dial Contact	The maximum number of times the Outbound subsystem attempts to dial a contact beyond which the call status will be marked as closed. You can choose this value from the drop-down list box. Default = 3, Range = 1 to 3.
Callback Time Limit	The time period before and after the scheduled callback time during which the Outbound subsystem attempts to dial out a callback. For example, if a callback was scheduled for 9:30 am and if the Callback Time Limit is set to 15 minutes, then the Outbound subsystem calls the customer anytime between 9:15 am to 9:45 am. This field is also used to determine the dialing time range for the Retries settings in the Add New Campaign web page. Default = 15 minutes, Range = 1 to 60 minutes.
Fields displayed only if you have selected IVR-based campaign type	

Field	Description
Application Trigger	This is the JTAPI trigger associated with this campaign. There will one-to-one mapping between a campaign and an application trigger. Only those triggers that are not associated with any other campaigns are displayed in the trigger list.
Application Name	The name of the application associated with the above-mentioned JTAPI trigger. This field is auto-populated.
Fields displayed only if you have selected Agent-based campaign type	
Abandoned Call Treatment	<p>If the agent is not available to handle the call, you can choose to abandon the call or transfer it to IVR by selecting the desired radio button in this field. If you choose to transfer the call to IVR, a trigger field and an application name field appears for selection.</p> <p>The trigger field is a drop-down list of JTAPI triggers associated with this campaign. There is one-to-one mapping between a campaign and a trigger. Only those triggers that are not associated with any other campaigns are displayed in the trigger list.</p> <p>The application name is associated with the above-mentioned JTAPI trigger. This field is auto-populated.</p> <p>Transfer to IVR radio button is enabled by default.</p> <p>Note</p> <ul style="list-style-type: none"> • This field is not applicable if you have selected the Direct Preview dialer type for an agent-based campaign. • If the agent is available to handle the call and if Unified CCX fails to transfer the call to the agent, then the call is dropped and will not be transferred to the IVR port.
Assigned CSQs	<p>The CSQs from which agents are selected for Outbound calls for this campaign. This is a mandatory field.</p> <p>Note</p> <ul style="list-style-type: none"> • For agent selection, the CSQs are used in the order in which they are assigned to the campaign. • CSQs that are associated with agent-based progressive or predictive campaigns cannot be shared across any other campaigns. • CSQs that are associated with direct preview campaigns can be shared only across other direct preview campaigns and not with agent-based progressive and predictive campaigns.
Available CSQs	<p>For direct preview campaigns—CSQs that are allocated for outbound but not assigned to any progressive or predictive agent-based campaign.</p> <p>For progressive and predictive agent-based campaigns—CSQs that are allocated for outbound and not assigned to any other campaign.</p>
Fields displayed only if you have selected Direct Preview dialer type for an Agent-based campaign	

Field	Description
Contact Records Cache Size	<p>The number of contact records the Outbound subsystem retrieves from the database in bulk for dialing. The allowed values are 1–100. This is a mandatory field. For example, if 50 records are retrieved in bulk for campaign1 and 10 for campaign2 and they are running at the same time, the Outbound subsystem attempts to place 50 Outbound calls for campaign1 and 10 Outbound calls for campaign2. The number of Outbound calls actually placed for each campaign depends upon the number of agents available for the respective campaigns.</p> <p>Once all the records retrieved for a campaign have been dialed, the Outbound subsystem retrieves another batch of records for that campaign. Over a period of time, it is likely that more contacts would have been called from campaign1 than from campaign2.</p> <p>If two campaigns run simultaneously and share CSQs or agents, the records in both campaigns may not be processed at the same rate even if their contact cache sizes are identical. It is possible that more records from one of these two campaigns is processed before the other.</p> <p>Default = 20, Range = 1 to 100</p>
Answering Machine Retry	<p>If you select Yes, then the Outbound subsystem retries the contact after all the callbacks and pending contacts for the campaign are dialed out.</p> <p>Default = No</p>
<p>The following fields in Dialing Options are displayed if you have selected IVR-based campaign type</p>	

Field	Description
Number of Dedicated Ports	<p>Number of dedicated IVR ports that you want to reserve for this campaign based on the number of CTI ports available in the outbound call control group for the campaign duration. That is, the total number of dedicated IVR ports for the selected campaign cannot exceed the maximum licensed ports for outbound IVR minus the sum total of IVR ports dedicated to other campaigns running at the same time.</p> <p>You can enter or update this value for a campaign only after associating a trigger with the campaign. Default value = 0, Range = 0 to number of available ports for the campaign duration.</p> <p>For example, if you have a medium or large profile VM, which supports maximum of 300 IVR ports with 50 licensed ports for outbound IVR and you have already dedicated:</p> <ul style="list-style-type: none"> • 20 ports for Campaign1, which runs between 10–12 pm • 10 ports for Campaign2, which runs between 2–4 pm, then the number of dedicated IVR ports that you can enter in this field for a new campaign cannot exceed: <ul style="list-style-type: none"> • 30 ports if the new campaign runs between 10–12 pm and • 40 ports if the new campaign runs between 2–4 pm and • 50 ports if the new campaign runs during any time other than 10–12 pm and 2–4 pm <p>If the number of configured ports for a campaign is greater than the available number of licensed ports at the specified campaign time, then an alert message stating the same will be shown while saving the campaign.</p> <p>Note Ensure that few IVR ports from the total number of licensed IVR ports are left free if you want to use the "Transfer to IVR" option available in the answering machine treatment and abandoned call treatment fields for agent-based progressive and predictive outbound campaigns.</p> <p>See Unified CCX Requirements, on page 218 to know how the licensed IVR ports are distributed between the inbound and outbound IVR calls in different scenarios.</p>

Field	Description
Lines Per Port (1-3)	<p>Number of lines to be dialed for each port. The dialer will try to connect as many live voices to the available port(s) where IVR script is playing and it will disconnect the remaining calls. The probability of abandoned calls increases geometrically as the lines per port increases.</p> <p>In an IVR based progressive campaign, you can configure the number of lines to dial per port at a time. The dialer will determine the number of calls to dial based on the following calculation - Lines per port * Available number of ports.</p> <p>In an IVR based predictive campaign, this is the seed value that is passed to the predictive algorithm. Initially the dialer starts dialing with this value.</p> <p>Note If you change this value in the middle, the predictive algorithm will take the updated value in this field during the next iteration.</p> <p>This is a mandatory field.</p> <p>Default value = 1.5; Range = 1 to 3.</p>
<p>The following fields in Dialing Options are displayed if you have selected Agent-based campaign type</p>	
Lines Per Agent (1-3)	<p>Number of lines to be dialed for each agent. The dialer will try to connect as many live voices to the available agent(s) and it will disconnect the remaining calls. The probability of abandoned calls increases geometrically as the lines per agent increases.</p> <p>In an agent-based progressive campaign, you can configure the number of lines to dial per agent at a time. The dialer will determine the number of calls to dial based on the following calculation - Lines per agent * Available number of agents.</p> <p>In an agent-based predictive campaign, this is the seed value that is passed to the predictive algorithm. Initially the dialer starts dialing with this value.</p> <p>Note If you change this value in the middle, the predictive algorithm will take the updated value in this field during the next iteration.</p> <p>This is a mandatory field.</p> <p>Default value = 1.5; Range = 1 to 3.</p> <p>Note This field is not applicable if you have selected the Direct Preview dialer type for an agent-based campaign.</p>
Callback Missed	<p>Determines the action that should be taken on the contacts that were not called back. The three options for this field are:</p> <ul style="list-style-type: none"> • Reschedule for same time next business day (default) • Mark it for a retry • Close the record.
<p>The following fields in Dialing Options are common if you have selected Progressive or Predictive dialer type for IVR-based and Agent-based campaigns</p>	

Field	Description
Handle Low Volume as Voice	<p>Determines whether a low volume call should be treated as voice or disconnected. Select Yes or No radio button accordingly.</p> <p>Default is Yes, which means low volume calls are handled as voice and they are connected to an IVR port or an agent.</p>
Answering Machine Treatment	<p>If the outbound call detects an answering machine, you can choose to end the call or transfer it to IVR by selecting the desired radio button in this field.</p> <p>For agent-based campaigns, if you choose to transfer the call to IVR, a trigger field and an application name field appears for selection.</p> <p>The trigger field is a drop down list of JTAPI triggers associated with this campaign. There is one-to-one mapping between a campaign and a trigger. Only those triggers that are not associated with any other campaigns are displayed in the trigger list.</p> <p>The application name is associated with the above-mentioned JTAPI trigger. This field is auto-populated.</p> <p>Transfer to IVR radio button is enabled by default.</p>
<p>The following fields in Dialing Options are common if you have selected Predictive dialer type for IVR-based and Agent-based campaigns</p>	
Predictive Correction Pace (10-1000)	<p>The number of calls that were answered by live voice that the predictive algorithm should consider for each iteration. This is directly proportional with the correction frequency made in the Lines Per Port or Lines Per Agent parameter. This is a mandatory field. Default value = 100, Range = 10 to 1000.</p> <p>Note It is advisable not to change this value.</p>
Predictive Gain	<p>The Gain parameter controls the size of the lines per port or lines per agent corrections. This is directly proportional to the size of the lines per port or lines per agent correction.</p> <p>This is a mandatory field. Default value = 1.0, Range = Greater than 0 to 1.0.</p> <p>Note It is advisable not to change this value.</p>
Call Abandon Limit (0-100)	<p>Call abandon percentage, which should be within the limit specified by Federal Trade Commission (FTC). This is a mandatory field.</p> <p>Default value - 3%, Range 0-100%. This means that no more than three percent of calls that are answered by a person are abandoned, measured per day per calling campaign.</p>
<p>The following field in Dialing Options is displayed only if you have selected Predictive dialer type for an IVR-based campaign</p>	
Maximum Lines Per Port (1-3)	<p>Maximum number of lines to be dialed for each port. You can configure the maximum number of lines that can be dialed per port and the predictive algorithm ensures that it does not exceed this number.</p> <p>This is a mandatory field. Default value = 3.0, Range = 1 to 3.</p>

Field	Description
<p>The following field in Dialing Options is displayed only if you have selected Predictive dialer type for an Agent-based campaign</p>	
<p>Maximum Lines Per Agent (1-3)</p>	<p>Maximum number of lines to be dialed for each agent. You can configure the maximum number of lines that can be dialed per agent and the predictive algorithm ensures that it does not exceed this number.</p> <p>This is a mandatory field. Default value = 3.0, Range = 1 to 3.</p>
<p>Dial Settings (displayed if you have selected IVR-based or Agent-based campaign types)</p>	
<p>No Answer Ring Limit</p>	<p>The duration for which the progressive/predictive dialer should allow the customer phone to ring before disconnecting an unanswered call.</p> <p>The duration is calculated from the time the dialer receives the ringing message from the gateway. If the dialer does not receive any ringing message from the gateway within the time duration entered for this field, then the dialer waits for the same time duration one more time before disconnecting the call.</p> <p>For example, if you have configured the value for No Answer Ring Limit as 30 seconds, then the dialer will wait for 60 seconds before disconnecting the call.</p> <p>Default = 15 seconds, Range = 1 to 60 seconds.</p> <p>Note This field is also used to determine the reservation timeout for agent-based progressive or predictive campaigns. If the agent does not receive any outbound calls, then the agent continues to remain in the reserved state up to maximum time duration of twice the value configured in the No Answer Ring Limit field.</p> <p>For example, if you have configured the value for No Answer Ring Limit as 30 seconds, then the range for reservation timeout is calculated as 30 to 60 (30 * 2) seconds.</p>
<p>Abandoned Call Wait Time</p>	<p>For IVR-based progressive and predictive outbound campaigns, if the customer disconnects the call within the time set here, then the call is classified as customer abandoned.</p> <p>For agent-based progressive and predictive outbound campaigns, if the customer or the agent disconnects the call within the time set here, then the call is classified as customer abandoned.</p> <p>This is a mandatory field.</p> <p>Default value = 2 seconds, Range = 1 to 10 seconds.</p>
<p>Retries (displayed if you have selected IVR-based or Agent-based campaign types): Set the value for the following four fields as “0” if you want to disable retry option for an existing IVR or agent based outbound campaign.</p>	
<p>Note</p>	<p>The time duration for the below fields is calculated as the value entered for each field, plus or minus the value entered for the Callback Time Limit field in the Add New Campaign web page.</p>

Field	Description
No Answer Delay	<p>The time duration (in minutes) for which the dialer waits before calling back a no-answer call.</p> <p>Default value = 60 minutes.</p> <p>Though the default value is 60 minutes, the retry attempt will not be made after 60 minutes. This is based on the value set for the Callback Time Limit configured in the subsystem. For example, if a callback was scheduled for 9:30 am and if the Callback Time Limit is set to 15 minutes, then the Outbound subsystem calls the customer anytime between 9:15 am to 9:45 am.</p> <p>Note The value set for the No Answer Delay should always be more than the value set for the Callback Time Limit.</p>
Busy Signal Delay	<p>The time duration (in minutes) for which the dialer waits before calling back a busy telephone number.</p> <p>Default value = 60 minutes.</p> <p>This parameter is also based on the value set for the Callback Time Limit as described above in the No Answer Delay.</p>
Customer Abandoned Delay	<ul style="list-style-type: none"> For IVR-based progressive and predictive outbound campaigns, if a customer abandons a call, the time duration (in minutes) after which the dialer should call the customer back. For agent-based progressive and predictive outbound campaigns, if a customer or an agent abandons a call, the time duration (in minutes) after which the dialer should call the customer back. <p>Default value = 0</p>
Dialer Abandoned Delay	<p>If the dialer abandons a call, the time duration (in minutes) after which the dialer should call back the customer.</p> <p>Default value = 0</p>

Step 3

Click **Add** or **Save** to save the configuration changes. While saving a new or updated campaign, the Outbound subsystem validates the Session values in the application and trigger pages based on following criteria, and it might display an alert message to increase Session value in application and trigger pages:

- In case of a Progressive campaign, the outbound subsystem checks whether the Lines Per Port * Dedicated Port for IVR-based campaigns and Lines Per Agent * Dedicated Agent for agent-based campaigns is greater than the minimum of the Session value in application and trigger.
- In case of a Predictive campaign, the outbound subsystem checks whether the maximum Lines Per Port * Dedicated Port for IVR-based campaigns and maximum Lines Per Agent * Dedicated Agent for agent-based campaigns is greater than minimum of the Session value in application and trigger.

You should increase the Session values in the application and trigger to the suggested value in the alert message to reduce the number of abandoned calls in an Outbound campaign.

Once you create a campaign, you need to import contacts for the campaign.

Import Contacts for Campaign

**Attention**

Cisco recommends that you import a total of 10,000 contacts for a campaign at any given time. If you wish to import more contacts, import them in chunks of 10,000 contacts.

To import additional contacts, ensure that the total count of additional and remaining contacts for a campaign does not exceed 1 million. The import process is rejected if the total count is greater than 1 million. Import contacts using a comma-separated plain text file with .txt extension. The contacts file should be ASCII-encoded or UTF-8 encoded if it contains special characters (for example, if the contact names are in Chinese, Russian, Japanese and so on).

When contacts are imported, the contact's text file is checked for duplicate entries. If the phone01 value of a contact matches the phone01, phone02, or phone03 values of another contact in the contacts list being imported, then the previous contact is overwritten with the new contact.

**Caution**

You must verify all the contacts against the national do_not_call list before importing them.

**Note**

- When you import contacts that have agent extension numbers, ensure that the agents are not logged in when the campaigns are executed.

**Tip**

Each time contacts are imported, they are appended to the existing list of contacts for the selected campaign. If the new list contains a contact with the same phone01 value as the phone01, phone02, or phone03 value, or the same phone02 value as the phone01, phone02, or phone03 value, or the same phone03 value as the phone01, phone02, or phone03 value, of an existing contact, the existing contact is overwritten with the new contact information. The call history for the contact (if any) is retained.

When Phone 1 of a contact is dialed and the CPA marks it as Busy or Unanswered the same number is retried based on the retry count and delay configured in the campaign. When the retry count reaches the maximum value, the contact is marked as closed. The other phone number for a given contact is dialed only when the called number is classified as Modem, Fax or Invalid.

To import contacts for a selected campaign, complete the following steps.

Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > Campaigns**.
The Campaigns web page opens, displaying the details of existing campaigns.
- Step 2** Click the hyperlink below the Name column for the campaign for which you want to import the contacts.
The Campaign Configuration web page opens for the selected campaign.

Step 3 Click **Import Contacts**. The Import Contacts web page opens.

Step 4 Specify a file name to import the contacts from the fields being imported.

A contact list can contain up to 7 fields:

- AccountNumber - The account number of a contact. The account number can be a maximum length of 25 characters.
- FirstName - The first name of a contact. The first name can be a maximum length of 50 characters.
- LastName - The last name of a contact. The last name can be a maximum length of 50 characters.
- Phone1 - The phone number for the contact. This field can be 28 characters long and must be a valid phone number. Phone1 is mandatory and must be specified.
- Phone2 - The phone number for the contact. This field can be 28 characters long and must be a valid phone number.
- Phone3 - The phone number for the contact. This field can be 28 characters long and must be a valid phone number.
- DialTime - The time to dial a number for individual contacts on the current date. The format to be used for this field is HH:MM. For example, to specify the dialing time as 08:25 am, the dial time field value should be 08:25 and for 03:45 pm, the dial time field value should be 15:45. This field is applicable only for Unified CCX Agent Preview campaigns.

Step 5 Navigate to the directory that contains the imported fields in the *same order* as they appear in the text file.

Allow Duplicate Contacts: Selecting this option will allow duplicate contacts from a particular file to be imported or from an already imported file. By default this option is unchecked.

What to do next

While uploading outbound contacts in a HA over WAN deployment of Unified CCX, if all the contacts that are being uploaded exist in the database and are being modified, follow these guidelines to avoid long delays:

- Upload the contacts during non-peak hours.
- Upload in batches of 500 contacts or less.

Enable Campaigns

You must verify that the configured campaigns are active and that the start and end times for the enabled campaigns are specified as required.

To verify the state of the required campaign, complete the following steps.

Procedure

Step 1 From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > Campaigns**.

The Campaigns web page opens, displaying following information for the existing campaigns:

Field	Description
Name	Name of the campaign.
Start Time/End Time (hh:mm) AM PM	Start Time and End Time fields indicate the time range during which the campaign runs.
Remaining Contacts	The Remaining Contacts field indicates the number of contacts that are yet to be dialed for each campaign. In addition to the contacts that have not been dialed, this number also includes contacts that have requested a callback and contacts that will be tried again because of unsuccessful prior attempt(s) (for example, the contact was busy or unavailable). A detailed breakdown of the pending contacts is provided in the Printable Reports page for each campaign.
Enabled	The Enabled field indicates to the Outbound subsystem whether this campaign is currently active.
Campaign Type	Denotes whether a specific campaign is IVR-based or Agent-based. The existing campaigns will be marked as Agent-based after an upgrade.
Delete	Click Delete icon next to the name of the campaign that you want to delete.

Step 2 Verify that the Enabled field is set to **TRUE** and that the start and end times are specified as required.

Outbound Subsystem and Time Detection

The Outbound subsystem uses the area code of a contact's phone number to determine the time zone of the contact's calling area. The contact's phone number can also be in E.164 format.

The subsystem provides the mapping for North American area codes to their corresponding time zones. The default North American area codes are used to determine the time zone for phone numbers that are not in the E.164 format (for example, 234-567-8900). The Area Codes web page allows you to add, modify, and delete any area-code-to-time-zone mapping. Some area codes extend across multiple time zones. For such area codes, you can edit the default time zone for that area code and specify a different one, if required.

Changes to area codes take affect the next time you import contacts. For example, if the time zone of area code 603 is changed from 16 to 17, contacts already present in the system that have an area code of 603 continue to have the GMT Offset of 16. Any contacts with area code 603 that are imported after the area code change have 17 for the GMT Offset.

When Outbound contacts are imported into the database, all contacts are assigned a GMT time zone for the three phone numbers provided. The Outbound subsystem determines this GMT time zone by extracting the area code of each phone number and checking it against the Area Codes table to obtain the corresponding time zone. If the area code cannot be matched, the Outbound subsystem uses the local time zone and Daylight Savings Time (DST) setting of the server. The Outbound subsystem also considers the DST to determine if an Outbound contact can be called at a given time.

The Outbound subsystem ensures that the contacts are dialed at valid times. For Outbound contacts which have been scheduled for callback, the scheduled callback time is converted to GMT time zone and stored in the callbackDateTime field in the database.

For pending records, the Outbound subsystem ensures that Outbound contacts are called only within the Customer Dialing Time Range (hh:mm) detected by the MinCustomerDialTime and MaxCustomerDialTime, as per federal regulations. You can configure this time in the Unified CCX Administration GUI.

Add Area Codes



Caution

Area code and long distance prefix configuration changes made to the Outbound subsystem do not take effect for calls/contacts currently in the Outbound subsystem's memory. For example, if you change the long distance prefix or local area code, the contacts already in the Outbound subsystem's memory will continue to use the old long distance prefix and local area code.

The Outbound subsystem provides all of the mappings from North American area codes to their corresponding time zones at the time of product release. The Area Codes page allows the administrator to add, modify, and delete any area-code-to-time-zone mappings.

Some area codes extend across multiple time zones. For such area codes, an administrator can edit the default time zone for that area code and specify a different one, if required.

The Area Codes Management page allows users to find, add, delete, and modify the mapping of area codes and time zones. The Outbound subsystem uses the area code of a contact's phone number to determine the time zone of the contact's calling area. This page can also be used for adding international area codes. International area codes must include the country code and the city code.

To add an area code, complete the following steps.

Procedure

-
- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > Area Codes**.
The Area Codes Management web page opens.
 - Step 2** In the Area Code field, specify a unique identifier for the area code. This field can have any numeric value, including 0 or leading zeros. This is a mandatory field.
 - Step 3** Click the **Add New** icon that is displayed in the tool bar in the upper, left corner of the window or the **Add New** button that is displayed at the bottom of the window.
The new Area Code information is updated.
-

Call Status Values

For each contact, the call statuses and their corresponding values are recorded in the database and described in the following table:

Call Status	Value (stored in database)	Description
Pending	1	The call is pending. This is the initial state for all records.
Active	2	The record was retrieved by the Outbound subsystem for dialing.
Closed	3	The record is closed (not dialed).
Callback	4	The record is marked for a callback.
Max Calls	5	Maximum attempts have been reached for this record (considered closed).
Retry	6	The record is redialed immediately whenever there is any miss in the callbacks for Retries with Delay.
Unknown	7	If the Outbound subsystem was restarted with records in the Active (2) state, they are moved to this state.
Retries with Delay	8	The record is redialed as it was either busy, no answer, customer abandoned or system abandoned. Retry time is set as per the corresponding configuration in Unified CCX Application Administration web interface.

Contact States Reset at Midnight

The Outbound subsystem performs the following actions at midnight:

- The DialingListConfig records with a call status of Unknown are reset to Pending.



Note Outbound contacts with a call status of Unknown indicate that these contacts were retrieved from the database but the system went down before they could be dialed out.

- Missed callback records (dialingListConfig records that have call status callback and a callBackDateTime smaller than the current time) are updated depending on the missed callback action configured in the Unified CCX Administration GUI.
 - MissedCallbackAction: Reschedule (for the same time on the next business day)
 - MissedCallbackAction: Retry (sets the call status to Retry and retries at the start of next business day)

- MissedCallbackAction: Close (sets the call status to Closed)
- Dialing list records with a call status of Closed or Max_Calls are moved to a separate historical data table



Note The records marked as closed today will be moved the next day at midnight. For example, the records closed on 4th June will be moved on 5th June at midnight.

- Dialing list records with a call result of Do Not Call are not deleted, as these records are exported to a text file.
- The DialingListConfig records with a call status of “Retries with delay” and which could not be retried due to lapsed time are marked for immediate retry at midnight.
- When the Unified CCX engine goes from offline to online (for example, the standby server becomes active [online] if the active [first] server fails), the dialing list records with a status of Unknown are reset to Pending.

Call Result Values

For each contact, the call results (as marked by the agent on Finesse or automatically deleted by the system) and their corresponding values are recorded in the database and described in the following table:

Call Result	Value (stored in database)	Description
Voice	1	Customer answered and was connected to agent.
Fax	2	Fax machine or modem detected.
Answering machine	3	Answering machine detected.
Invalid	4	Number reported as invalid by the network.
Wrong Number	6	Number successfully contacted but wrong number.
Customer Not Home	7	Number successfully contacted but reached the wrong person.
Callback	8	Customer requested callback.
Agent Rejected	9	Agent skipped or rejected the preview call.
Agent Closed	10	Agent skipped or rejected the preview call with the close option (not dialed).

Call Result	Value (stored in database)	Description
Busy	11	Busy tone detected.
Ring No Answer	12	<p>Agent did not respond to the preview call within the time out duration.</p> <p>Note You can configure the time out duration using the Preview Call Timeout field detailed in the Configure General Outbound Properties.</p>
Callback Failed	13	This value should not be written to the database; this is for internal use only.
Callback Missed	14	Callback missed and marked for Retry.
Timeout	15	Customer phone timed out either due to Ring No Answer (RNA) or Gateway failure.
Call Abandoned	16	Call was abandoned because IVR port was unavailable or Unified CCX failed due to transfer the call to the IVR port.
Call Failed	17	<p>Call failed due any one of the following reasons:</p> <ul style="list-style-type: none"> • Dialer asked the Gateway to cancel a call that has not yet been placed • Gateway has declined the call • Gateway is down or Gateway has timed out while placing the call • Gateway failure or configuration issues at the Gateway.
Customer Abandoned	18	Customer abandoned as customer disconnected the call within the time limit as configured in “Abandoned Call Wait Time” in Unified CCX Application Administration web interface.

Reclassification Status Behavior

When the Outbound contacts are imported into the database from the Unified CCX Administration GUI, the call status column in the Dialing List table is assigned the default value of 1 (Pending), indicating that these Outbound contacts are yet to be dialed. When the Outbound subsystem retrieves a batch of contacts from the database, the call status is set to 2 (Active). After a call is placed to the Outbound contact, the call status is set to 3 (Closed) and the call result is set to 1 (Voice), as all Outbound calls are classified by the agent desktop as voice by default. If the agent clicks the reclassification button on the agent desktop and reclassifies the call as answering machine/fax/busy/invalid or selects the callback button and schedules a callback, the Outbound subsystem updates the call result field accordingly and, based on the call result, it also updates the call status.

The following table describes the relationship between call status and call result values and the resulting behavior of the system. The values in brackets are the actual values stored in the database.

The following information is applicable only for Preview Dialer.

Call Result	Call Status	Behavior
Voice (1)	Closed (3)	This contact is not dialed again.
Fax (2)	Retry (6)	This contact is retried, using a different phone number provided for this contact. If alternate phone numbers are not available, the call status is closed.
Answering machine (3)	Retry (6)	This contact is retried, with the same phone number as before.
Invalid Number(4)	Retry (6)	This contact is retried, using a different phone number provided for this contact. If alternate phone numbers are not available, the call status is closed.
Busy	Retry (6)	This contact is retried, with the same phone number as before.

The call status is set to 5 (Closed) when the Outbound contact is no longer dialed for this campaign. This happens when a call was successfully placed (call result is voice) and also when an agent selects Skip-Closed, Reject-Closed, or Do Not Call. This also happens automatically if the system reaches the maximum attempts limit for an Outbound contact, which means that the system tried dialing the Outbound contact the maximum number of times configured in the Unified CCX Administration GUI.

Call Retrieval Priority

While retrieving Outbound contacts from the database, records that have scheduled callbacks have priority as the callback time must be adhered to. Outbound contacts are retrieved in the following order of priority:

- Priority 1—Outbound contacts with scheduled callback (call status = 4) and the current time is within the CallbackTimeLimit configured on the Campaigns page (default value is 15 minutes) of the scheduled callback time.
- Priority 2—Outbound contacts to be retried after a specific delay. This is not applicable for direct preview campaigns (call status = 8).

- Priority 3—Outbound contacts in the Pending state (call status = 1).
- Priority 4:—Outbound contacts in the Retry state (call status = 6).

Failover and System Restarts

Outbound contacts with an Active call status during a failover indicate that these contacts were retrieved from the database but the system went down either before they could be dialed or after they were dialed but before the call status and call result columns were updated. When the system restarts, the call status for all such Outbound contacts is changed to 7 (Unknown). All Outbound contacts in the Unknown state will be reset to the Pending state (should be retrieved for dialing again) at midnight every night.

If there is an Outbound call in progress during a failover, they cannot be dialed again, as the call status is set to Closed as soon as an Outbound call is placed and these records will not be retrieved for dialing again when the system comes back. However, if the failover happened before the system could update the call status to Closed, these records remain in the Active state and are marked Unknown so they transition to Pending state after midnight. Once they are in the Pending state, they will be dialed again.



CHAPTER 14

Cisco Unified Contact Center Express Supervisor and User Options Plug-Ins

The following sections provide detailed information on the additional plug-in options provided by the Unified CCX.

- [About User Management, on page 247](#)
- [About Unified CCX User Capabilities, on page 247](#)
- [Unified CCX Supervisor Web Interface, on page 249](#)
- [Unified CCX User Options Web Interface, on page 250](#)

About User Management

In earlier versions of Unified CCX, many user parameters like user ID, password, and pin were configured from the Unified CM Administrator. Some Unified CCX-related user parameters were configured through the Unified CCX Administration.

In Unified CCX, all Unified CCX user roles (capabilities) are consolidated into one User Configuration area.



Note Any changes made to the user privileges for the Unified CCX user roles after the backup operation is performed are not restored.

The Unified CM user details are stored in the Unified CM database.

About Unified CCX User Capabilities

The capability for each user refers to the Unified CCX access level assigned for each user. Unified CCX users can be assigned to one of the following four roles (or capabilities):

- Administrator
- Supervisor
- Historical Report User
- Agent

Each of these roles are described in this section.

Administrator Privileges

A Unified CCX Administrator is a user with complete access to the Unified CCX Administration and has the authority to configure the entire system. An Administrator can also be assigned a combination of other roles.

The Administrator can turn on/off the authority of a Supervisor to manage the teams and agents.

Supervisor Privileges

Supervisors can additionally modify and view skills, view the list of all teams for which this user is the supervisor, view the skills, CSQs, and resource groups configured in this system, view and manage resources, and configure the teams that they are to manage.

Unified CCX provides three types of supervisors:

- **Application Supervisor:** A basic supervisor role applicable to a Unified CCX Application server *without* a Unified CCX license. An application supervisor can only view reports.
- **ACD Supervisor:** A supervisor with an agent role. This role is applicable to a Unified CCX Application server with *any* Unified CCX license. An ACD supervisor can administer teams/agents and also view reports. Thus Unified CCX enables dynamic reskilling, the ability by which an ACD supervisor can add or remove skills from an agent without an administrator privilege.

Depending on the license allowed, Unified CCX Supervisors have the following privileges:

- View reports through Unified Intelligence Center web client.
- View agents and CSQ being monitored. This is only for a remote Supervisor.
- View the list of all teams for which this user is the Supervisor.
- Configure the teams managed by the Supervisor.
- View the skills, CSQs, and Resource Groups configured in this system.



Note

The RmCm menu can be viewed by the Supervisor only when any of the following two options are selected as the parameter value for the Supervisor Access field located in **System > System Parameters > Application Parameters**:

- Access to all Teams
 - Access to Supervisor's Teams only
-
- View and manage all the resources.

Historical Report User Privileges

A user with a historical report role can view various historical reports. The number and types of reports allowed to be viewed depends on the licenses available on a given Unified CCX system.

Agent Privileges



Note An agent capability is only available with a Unified CCX license.

Unified CM users in Unified CCX are assigned an agent role when an agent extension is associated to the user in the Unified CM User Configuration page. Consequently, this role can *only* be assigned or removed for the user using Unified CM Administrator End User Configuration web page. These users can not be assigned or removed in Unified CCX Administration.

Unified CCX Supervisor Web Interface

Use the Unified CCX Supervisor web page to:

- View and monitor permitted agents
- View and monitor permitted CSQs
- Access real-time reports, tools, and settings

Access Unified CCX Supervisor Web Page

To access the Unified CCX Supervisor web page, perform the following steps:

Procedure

Step 1 Ensure supervisor capability is assigned to the user designated as supervisor (see **Supervisor Privileges** and **User View Submenu**).

Note If the supervisor is assigned administrator capability as well, the Unified CCX Administration window is opened instead of the Supervisor web page.

Step 2 From a web browser on any computer on your network, enter the following case-sensitive URL:

```
https://<servername>/appadmin
```

In this example, replace <servername> with the hostname or IP address of the required Unified CCX server.

Tip If you have already accessed the Unified CCX Administration application or Supervisor web page in the browser, be sure to logout from the current session using **Logout** link displayed in the top right corner of any Cisco Unified CCX Administration web page or **System > Logout** and login with respective user credentials.

The Unified CCX Supervisor web page appears.

Unified CCX User Options Web Interface

Use the Unified CCX User Options web page to perform:

- Unified CCX downloads
- Alternate pronunciations for call by name
- Access the Unified CM User web page

Access Unified CCX User Options Web Page

To access the Unified CCX User Options web page, perform the following steps:

Procedure

Step 1 From the Unified CCX Administration, enter **https://<Cisco Unified CCX IP address>/appuser**.

Step 2 If prompted to do so, enter your User ID and Password.

The Unified CCX User Options web page appears.

Note Only Unified CM users are allowed to log in.

Step 3 When finished, click **Logout**.

Add Alternative Pronunciations

Alternative Pronunciations for Call by Name is an independent feature located on the Unified CCX User Options Welcome web page. This feature lets you add one or more alternate pronunciations for your first or last name and is useful if callers might refer to you by more than one name. For example, if your first name is Bob, you might add the alternate pronunciations “Bob” and “Bobby”. Similarly, if your last name is Xhu, you might add the alternate pronunciation “Xhu”.

To access the Alternative Pronunciations for Call by Name web page, perform the following steps:

Procedure

Step 1 In the Cisco Unified CCX User Options Welcome web page, choose **User Options > Alternative Pronunciations for Call by Name**.

The Alternate Pronunciations web page appears.

Step 2 In the First Name field, you can enter an alternate pronunciation of your first name. For example, if your name is “Mary,” you might enter “Maria.”

Step 3 Click **Add>>**.

The name moves to a list of alternate first name pronunciations.

- Step 4** Repeat Steps 2 and 3 as needed to add other alternate pronunciations.
- To remove an alternate pronunciation for your first name, click the alternate pronunciation and then click **Remove**.
- Step 5** In the Last Name field, you can enter an alternate pronunciation of your last name. For example, if your last name is “Smith,” you might enter “Smitty.”
- Step 6** Click **Add>>**.
- The name moves to a list of alternate last name pronunciations.
- Step 7** Repeat Steps 5 and 6 as needed to add other alternate pronunciations.
- To remove an alternate pronunciation of your last name, click the alternate pronunciation and then click **Remove**.
- Step 8** Click **Save** to apply the changes.
-

Access Unified CM User Options Page

To access the Unified CM User Options web page, perform the following steps:

Procedure

- Step 1** In the Unified CCX User Options Welcome web page, choose **User Options > Cisco Unified CM User Page**.
The Unified CM User Options Log On dialog box appears.
- Step 2** Enter your Unified CM user ID and password, and then click **Log On**.
The Unified CM User Options web page appears.
- Step 3** Click the option you want.
- Step 4** When finished, click **Logout**.
-



CHAPTER 15

System Menu

The System menu of the Unified CCX Administration system provides options for performing system-related tasks. Depending on the product package you purchased, the System menu contains some or all of the following menu options:

- [Access Server Menu, on page 253](#)
- [Unified CM Configuration, on page 255](#)
- [Recording Configuration, on page 255](#)
- [Custom File Configuration, on page 256](#)
- [Standalone Cisco Unified Intelligence Center Configuration, on page 256](#)
- [License Information, on page 256](#)
- [Language Information, on page 258](#)
- [Logout Menu, on page 258](#)

Access Server Menu

Choose **System > Server** from the Cisco Unified CCX Administration menu bar to access the **List Servers** web page. Use the **List Servers** web page to view, add, remove, and view servers in the cluster.



Note Before installing Unified CCX on the second node, you must configure the second server using this procedure. Installation of second node will fail if you do not perform this configuration.

To view, modify, or delete the server configuration information of any server, click the respective hyperlink in the **Host Name/IP Address** field. The **Server Configuration** web page opens to display Host Name/IP Address, IPv6 Address (for dual IPv4/IPv6), MAC Address, and Description of the server. Update the values in the fields and click **Save** to save the changes. Click **Delete** to delete the configuration information of a server.



Note You cannot delete the publisher.

Configure Server

To configure a new server that needs to be added to form a Unified CCX cluster for a High Availability setup, complete the following steps.

Procedure

Step 1 Click the **Add New** icon in the toolbar in the upper left corner of the **List Servers** web page or the **Add New** button at the bottom of the **List Servers** web page to add the new server.

The Server Configuration web page appears.

- Note**
- The **Add New** button is disabled when two servers are added to the cluster in a High Availability setup.
 - A warning message appears when you click the **Add New** button without having a High Availability license.

Step 2 Complete the following fields:

Field	Description
Host Name/IP Address	Hostname or IP address of the server that you want to add.
IPv6 Address (for dual IPv4/IPv6)	IPv6 address of the server that you want to add. Note This field is required only when IPv6 is enabled on the Unified CCX server.
MAC Address	MAC address of the server that you want to add.
Description	Description of the server that you want to add.

Step 3 Click **Add** to add details of the new server.

Configure IPv6 Address

Follow this procedure to configure IPv6 addressing.

Procedure

Step 1 On the **List Servers** page, click on the server name link to edit the server details.

The **Server Configuration** web page opens.

Step 2 Enter the IPv6 address or remove it in the **IPv6 Address (for dual IPv4/IPv6)** field.

Step 3 Click **Save** to add the IPv6 address.

What to do next

Login to **Cisco Unified CCX Serviceability** page and click **Tools>Control Center - Network Services**. Restart the **Cisco Unified Intelligence Center Reporting** service.



Note Eventhough the CTI ports are registered with dual stack or only with IPv6, this is displayed as IPv4 in the Call Manager.

Unified CM Configuration

Choose **System > Unified CM Configuration** from the Unified CCX Administration menu bar to access the Unified CM Configuration web page.

Use the Unified CM Configuration web page to update the following information:

- The Unified CM AXL provider used for Unified CCX AXL requests for agent authentication and SQL queries.
- The Unified CM JTAPI provider used by the Unified CCX Engine Unified CM Telephony subsystem to control and monitor CTI ports and route points.
- The Unified CM RmCm -JTAPI provider used by the Unified CCX Engine RmCm subsystem to control and monitor the agent phones and extensions.

Recording Configuration

Use the Recording Configuration web page to configure the host names, user name, and password to connect to the recording server such as Cisco MediaSense.

You must configure recording server details in Unified CCX so that supervisors can search and play recordings based on various filter criteria.

Choose **System > Recording Configuration** from the Unified CCX Administration menu bar to access the Recording Configuration web page.

This web page displays currently configured recording server details.



Note User name must be a MediaSense API user. API user name is a Unified CM end user, who is configured in Cisco MediaSense as a MediaSense API user.

For information about Cisco MediaSense API User Configuration, see MediaSense Installation and Administration guide at https://www.cisco.com/en/US/products/ps11389/tsd_products_support_series_home.html.

Custom File Configuration

Use the Custom Classes Configuration web page to specify the classpath for custom classes.

Choose **System > Custom File Configuration** from the Unified CCX Administration menu bar to access the Custom Classes Configuration area.



Note Restart Unified CCX engine and Unified CCX administration services to use the custom files in scripts.

Standalone Cisco Unified Intelligence Center Configuration

To access the Cisco Unified Intelligence Center standalone configuration webpage, perform the following steps:

Procedure

- Step 1** Click **System > Standalone CUIC configuration** for configuring standalone CUIC.
- Step 2** Enter FQDN (Fully Qualified Domain Name), DataSource Name, Username, and Password of standalone CUIC.
- Step 3** Click **Save**.
A Status message will be displayed.

Note Asterisk (*) indicates the required fields.

If the configuration is successful, a status message will be displayed. If the configuration is not successful, an error message will be displayed. This can be due to:

- An error in input validation (DataSource Name, Username or Password).
- A failure in connectivity between the CUIC and the Unified CCX servers.



Note The user name of the data source configured in standalone Cisco Unified Intelligence Center will be modified to **uccxhrc** after a Unified CCX failover. This is an expected behavior and will not have any impact on the execution of reports from standalone Cisco Unified Intelligence Center.

License Information

Use this page to select the appropriate Unified CCX license. Select one of the following and click **Next**.

- **Smart Licensing**- Smart licensing is a cloud-based software license management solution that enables you to automate time-consuming and manual licensing tasks. This solution allows you to easily track the status of your license and software usage trends. This solution helps simplify the following core functions:

- Purchasing
- Management
- Reporting

- **Classic Licensing**



Note By default, **Smart Licensing** is selected.

Add Licenses

From the Unified CCX Administration menu bar:

Procedure

- Step 1** Choose **System > License Information > Add License(s)**.
The License Information web page displays.
- Step 2** In the License File field, enter the path for the license file or click **Browse** to locate the license file. Select the required license file and click **Open**.
Use this page to specify a license file and upload it to Unified CCX.

Display Licenses

From the Unified CCX Administration menu bar:

Procedure

Choose **System > License Information > Display License(s)**.

The License Information web page opens, displaying the details of the Configured License such as the license type, number of IVR ports, number of seats, maximum number of agents, and so on.

Note The License Information page displayed on click of **Display License(s)** menu option will also specify the expiry date in case of time-bound licenses.

For Unified CCX, if you have a premium license with an outbound license, this web page will display:

- The number of licensed IVR ports and dedicated IVR ports for IVR outbound.

- The number of licensed agent seats and concurrent agent seats for progressive and predictive agent outbound.

Note The number of In Use IVR ports and In Use agent seats are displayed only for the master node.

Language Information

Customized Unified CCX languages such as American English, Canadian French, and so on are installed with Unified CCX.

Use the Languages Configuration web page to:

- Enable languages that can be used to play prompts and grammars through Cisco Unified IP IVR.

Choose **System** > **Language Information** from the Cisco Unified CCX Administration menu bar to access the Languages Configuration web page. The Languages Configuration web page opens to display the following fields and buttons.

Field	Description
IVR Language Configuration	
Language	Language that you wish to use with Unified IP IVR. You can select the language from the drop-down list. You can also specify the group and country-specific information for the language by selecting the desired radio button and check box respectively. Some languages have only one choice. US English (en_US) is the default.
Default IVR Language Configuration	
Default Language	System default language setting, which could be either one of the selected IVR languages or country-specific or a user-defined language entered using the Edit button. This is a mandatory field and you can choose from the drop-down list. Click Edit to add a new Language option. Default: English (United States) [en_US]

Logout Menu

To exit Unified CCX Administration without closing your web browser, you can perform one of the following:

- Choose **System** > **Logout** from the Unified CCX Administration menu bar.
- Click the **Logout** link displayed in the top right corner of any Cisco Unified CCX Administration web page.

The system logs you out of Unified CCX and displays the Unified CCX Authentication web page.



Note You can also exit Unified CCX Administration by closing your web browser.



CHAPTER 16

Applications Menu

The Applications menu on the top contains the following menu options:

- **Application Management**—to add, configure, copy, delete, or refresh a specific application
- **Script Management**—to add a new script and to view, refresh, upload, or delete an existing script
- **Prompt Management**—to display, modify, or delete existing prompts, and to add new prompts
- **Grammar Management**—to display, modify, or delete existing grammars, and to add new grammars
- **Document Management**—to display, modify, or delete existing documents, and to add new documents
- **AAR Management**—to upload AAR files to Unified CCX
- **Calendar Management**—to create a new calendar, configure, and schedule the contact center business hours

The following sections describe the menu options:

- [Access Application Management Menu, on page 261](#)
- [Manage Scripts, on page 262](#)
- [Prompt Management, on page 262](#)
- [Grammar Management, on page 263](#)
- [Document Management, on page 263](#)
- [AAR Management, on page 264](#)

Access Application Management Menu

The Application Management menu option in the Unified CCX Administration web interface contains options for configuring and managing the applications the Unified CCX system uses to interact with contacts and perform a wide variety of functions.

To access the Application Management web pages, perform the following steps:

Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Applications > Application Management**.

The Applications Configuration web page opens, displaying a list of applications that are currently configured on your Unified CCX server.

- Step 2** Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the **Add New** button that displays at the bottom of the window to add a new application. Add a New Application web page opens.
- Step 3** Select the type of application that you want to create from the Application Type drop-down list.
-

Manage Scripts

Use the Script Management web page to add a new script and to rename, refresh, or delete an existing script. Unified CCX applications are based on scripts created in the Unified CCX Editor.

To create a new subfolder under the `default` folder, perform the following steps:

Procedure

- Step 1** To access the Script Management web page, choose **Applications > Script Management** from the Unified CCX Administration menu bar.
- The Script Management web page opens, displaying the default directory that contains the scripts uploaded to the repository.
- Step 2** Click the **Create New Folder** icon that displays in the toolbar in the upper left corner of the window or the **Create New Folder** button that displays at the bottom of the window.
- The Create New Folder dialog box opens.
- Step 3** Enter a name of the new subfolder in the **Folder Name** field and click **Create**.
- Once the folder is successfully created, the dialog box refreshes with the following message:
- ```
Folder successfully created
```
- Step 4** Click the **Return to Script Management** button to return to the `default` folder's updated Script Management page. You can create any number of folders within the `default` folder.
- 

## Prompt Management

Several system-level prompt files are loaded during Unified CCX installation. However, any file *you* create must be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the prompt files are created, stored, and updated.



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**Note** You can use a custom script or the Unified CCX Administration to upload a prompt.

---

To access the Prompt Management page, choose **Applications > Prompt Management** from the Unified CCX Administration menu bar.

The Prompt Management web page contains the following icons and buttons:

- **Create Language**—Click the **Create Language** icon that displays in the toolbar in the upper left corner of the window or the **Create Language** button that displays at the bottom of the window to create a new language folder.
- **Upload Zip Files**—Click the **Upload Zip Files** icon that displays in the toolbar in the upper left corner of the window or the **Upload Zip Files** button that displays at the bottom of the window to upload a new prompt or zip file.

See **Manage Prompt Files** section to know more about the different fields in this page and how to rename, refresh, or delete existing prompts.

## Grammar Management

Several system-level grammar files are loaded during Unified CCX installation. However, any file *you* create must be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the grammar files are created, stored, and updated.

To access the Grammar Management page, choose **Applications > Grammar Management** from the Unified CCX Administration menu bar.

The Grammar Management web page contains the following icons and buttons:

- **Create Language**—Click the **Create Language** icon that displays in the toolbar in the upper left corner of the window or the **Create Language** button that displays at the bottom of the window to create a new language folder.
- **Upload Zip Files**—Click the **Upload Zip Files** icon that displays in the toolbar in the upper left corner of the window or the **Upload Zip Files** button that displays at the bottom of the window to upload a new grammar or zip file.

## Document Management

Several system-level document files are loaded during Unified CCX installation. However, any file *you* create must be made available to the Unified CCX Engine before a Unified CCX application can use them. This is done through the Unified CCX cluster's Repository datastore, where the document files are created, stored, and updated.

To access the Document Management page, choose **Applications > Document Management** from the Unified CCX Administration menu bar.

The Document Management web page contains the following icons and buttons:

- **Create Language**—Click the **Create Language** icon that displays in the toolbar in the upper left corner of the window or the **Create Language** button that displays at the bottom of the window to create a new language folder.

- **Upload Zip Files**—Click the **Upload Zip Files** icon that displays in the toolbar in the upper left corner of the window or the **Upload Zip Files** button that displays at the bottom of the window to upload a new document or zip file.



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**Note** Ensure that you do not upload any .jar files that are already used by Unified CCX. For the list of .jar files that are used, refer to the specific versions of the [Open Source Used In UCCX](#) document.

---

## AAR Management

Use the AAR Management web page to upload an AAR file to Unified CCX.

To access the AAR Management web page, choose **Applications > AAR Management** from the Unified CCX Administration menu bar. The AAR Management web page appears.





## CHAPTER 17

# Subsystems Menu

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The Subsystems menu of the Unified CCX Administration web interface provides access to the subsystems that are licensed for your Unified CCX system.

The Unified CCX system uses subsystems for communicating with other services. Depending on the Unified CCX package you have installed, the Subsystems menu may contain some or most of the following menu options:

- **Cisco Unified CM Telephony**—to enter Unified CM Telephony provider information, Computer Telephony Interface (CTI) port group information, Unified CM Telephony trigger information, and to resynchronize Unified CM Telephony information.
  - **RmCm**—to set up your Unified CCX resources.
  - **Chat / Chat and Email**—allows Unified CCX to configure and manage chat and email CSQs, configure mail server and SocialMiner, predefined responses for chat and email, channel parameters, chat widget list, and teams.
  - **Outbound**—to configure contact centers for automated outbound activities.
  - **Database**—to configure the Unified CCX system to communicate with database servers.
  - **HTTP**—to configure the Unified CCX Engine to respond to requests from a variety of web clients, including computers and IP phones.
  - **eMail**—to configure the Unified CCX Engine to communicate with your email server and enable your applications to create and send email.
  - **Cisco Media**—to configure Cisco Media Termination (CMT) dialog groups that can be used to handle simple Dual-Tone Multi-Frequency (DTMF) based dialog interactions with customers.
  - **MRCP ASR**—to configure the MRCP Automated Speech Recognition (ASR) subsystem, which allows users to navigate through a menu of options using spoken responses to prompts.
  - **MRCP TTS**—to configure the MRCP Text-to-Speech (TTS) subsystem, which converts plain text (UNICODE) into spoken words to provide a user with information or to prompt a user to respond to an action.
- 
- [Unified CM Telephony Menu, on page 266](#)
  - [RmCm Menu, on page 269](#)
  - [Chat and Email Menu Options, on page 273](#)
  - [Outbound Menu, on page 286](#)

- [Database Menu, on page 291](#)
- [HTTP Menu, on page 293](#)
- [eMail Menu, on page 294](#)
- [Cisco Media, on page 294](#)
- [MRCP ASR Menu, on page 295](#)
- [MRCP TTS Menu, on page 296](#)

## Unified CM Telephony Menu

The Unified CCX system uses the Unified CM Telephony subsystem of the Unified CCX Engine to send and receive call-related messages from the Unified CM Computer Telephony Interface (CTI) Manager.

To access the Unified CM Telephony Configuration web pages, choose **Subsystems > Cisco Unified CM Telephony** from the Unified CCX Administration menu bar.

The Unified CM Telephony Configuration menu contains the following submenu options:

- **Unified CM Telephony Provider**—Choose this option to enter Unified CM Telephony provider information.
- **Unified CM Telephony Call Control Group Configuration**—Choose this option to configure CTI port groups for applications.
- **Unified CM Telephony Trigger Configuration**—Choose this option to configure Unified CM Telephony triggers for applications.
- **Data Synchronization**—Choose this option to check and synchronize data components like Unified CM Telephony Users (JTAPI Application Users), Unified CCX Triggers/Route points, and Call Control Groups between Unified CCX and Unified CM.
- **Cisco JTAPI Resync**—Choose this option to resynchronize Cisco JTAPI Client versions.
- **Advanced Settings**—Choose this option to configure advanced settings for the Cisco Unified CM Telephony client.

## Unified CM Telephony Provider Configuration

To access this configuration area, choose **Subsystems > Cisco Unified CM Telephony > Provider** from the Unified CCX Administration menu bar. The Cisco Unified CM Telephony Provider web page opens.

Use the Unified CM Telephony Provider Configuration web page to view and modify the primary and secondary location of your Unified CM Telephony provider, and user prefix.

## Unified CM Telephony Call Control Group Configuration

Choose **Subsystems > Cisco Unified CM Telephony > Call Control Group** from the Unified CCX Administration menu bar to access the Unified CM Telephony Call Control Group list web page. Use the Unified CM Telephony Call Control Group Configuration web pages to display, add, modify, and delete information about the call control group.

To add a new Unified CM Telephony Call Control Group, click the **Add New** icon or button on the Unified CM Telephony Call Control Group Configuration web page.

To modify an existing Unified CM Telephony Call Control Group, click any hyperlink within the Ports List table entry; the Cisco Unified CM Telephony Call Control Group Configuration web page opens.

## Unified CM Telephony Triggers Configuration

Choose **Subsystems** > **Cisco Unified CM Telephony** > **Triggers** from the Cisco Unified CCX Administration menu bar to configure Unified CM Telephony Triggers.

The Cisco Unified CM Telephony Trigger Configuration web page opens where you can view, add, modify, and delete Unified CM Telephony triggers. To add a Unified CM Telephony trigger, click the **Add New** icon or button. The Cisco Unified CM Telephony Trigger Configuration web page opens.



**Note** Use of two(2) wildcard CTI Route Points that overlap with each other is not supported. For example, Route Point 1: 123XXXX and Route Point 2: 1234XXX overlap with one another and is not supported.

However, a wildcard CTI Route point can overlap with a full DID (best match pattern) that doesn't contain a wildcard. For example, Route Point 1: 123XXXX and Route Point 2: 1234567 is supported.

## Synchronize Unified CM Telephony Data

From Unified CCX Release 9.0(1), you can configure the telephony data synchronization through a new web page called Cisco Unified CM Telephony Data Synchronization.

The data synchronization process ensures that data components like Unified CM Telephony Users (JTAPI Application Users), Unified CCX Triggers/Route points, and Call Control Groups between Unified CCX and Unified CM are in sync, without any inconsistency.

**Data Check** displays whether the selected data components are in synch or not between Unified CCX and Unified CM. If you find any inconsistency, click **Data Resync** to rectify the issue. To check and synchronize the JTAPI data components between Cisco Unified CM and Cisco Unified CCX, perform the following steps:



**Caution** It is important that you plan to perform this task during off peak hours to avoid hampering routine contact center operations.

### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems** > **Cisco Unified CM Telephony** > **Data Synchronization**.

The Cisco Unified CM Telephony Data Synchronization page appears.

**Step 2** Select one or more of the following three components by checking the corresponding check boxes:

- Call Control Group(s)
- Trigger(s)
- CM Telephony User(s)

**Step 3** Click **Data Check** or **Data Resync**. Once you click **Data Check** or **Data Resync**, a confirmation message dialog box appears prompting you to either proceed or cancel. Click **OK** to continue.

**Note** Once you click **OK** in the confirmation message for Data Check or Data Resync, you will not be allowed to cancel the process.

**Step 4** The Cisco Unified CM Telephony Data Synchronization web page continues to update until the Data Check or Data Resync process is complete. On completion of the Data Check or Data Resync process, the result is displayed in the same web page in a tree structure. The result for each selected component is displayed in collapsed format with a tick mark if no mismatch is found. Click the arrow adjacent to each selected component to expand and view the detailed results.

If any mismatch is found in the elements of the selected component, the results for those components are displayed automatically in an expanded format.

**Note** If you had multiple device pools (for Call Control Groups) in your older versions of Unified CCX setup, performing Data Resync after an upgrade would merge all multiple device pools to a single default device pool. However, you can manually assign a different device pool to the Call Control Group if the default device pool is not the intended one.

---

## Unified CM Telephony Cisco JTAPI Resync

Choose **Subsystems** > **Cisco Unified CM Telephony** > **Cisco JTAPI Resync** from the Cisco Unified CCX Administration menu bar to resynchronize the JTAPI client version on the Unified CCX with the JTAPI version on the Unified CM. You can view the status of Cisco JTAPI client resynchronization in this web page.

If the Unified CCX detects a mismatch, the system downloads and installs the compatible or JTAPI client required installer version. Restart the Unified CCX Engine to view these configuration changes.

The JTAPI client update happens only on the local node and not on the second node in case of High Availability deployment.

## Unified CM Telephony Advanced Settings

Choose **Subsystems** > **Cisco Unified CM Telephony** > **Advanced Settings** from the Cisco Unified CCX Administration menu bar to configure advanced settings for the Unified CM Telephony Client.

Use the Unified CM Telephony Advanced Settings web page to update the following information:

- Periodic Wakeup Interval (seconds): Select the check box before Enable Periodic Wakeup prior to updating the existing value in this field.
- Queue Size Threshold: Select the check box before **Enable Queue Stats** prior to updating the existing value in this field.
- CTI Request Timeout (sec)
- Provider Open Request Timeout (sec)
- Provider Retry Interval (sec)
- Server Heartbeat Interval (sec)

- Route Select Timeout (ms)
- Post Condition Timeout
- Use Progress As Disconnect

Click the **Update** icon that displays in the toolbar in the upper left corner of the window or the **Update** button that displays at the bottom of the window to save the changes. Restart the Unified CCX Engine to view these configuration changes.

In case of High Availability deployment, the changes are propagated to the second node. If the second node cannot be contacted, an alert message indicating that the update has failed on the remote node is displayed.

## RmCm Menu

Use the RmCm Configuration web page to configure skills groups, resources, resource groups, Contact Service Queues (CSQs), and RM (Resource Manager) Unified CM Telephony providers. To access the Unified CCX Configuration web page, choose **Subsystems > RmCm** from the Unified CCX Administration menu bar.

The RmCm menu contains the following submenu options:

- **Skills**—Click this submenu to create skills. This option is available only with the Unified CCX Enhanced and Unified CCX Premium license packages.
- **Resources**—Click this submenu to assign a resource group and skills to agents.
- **Resource Groups**—Click this submenu to create resource groups.
- **Contact Services Queues (CSQs)**—Click this submenu to configure CSQs.
- **RmCm Provider**—Click this submenu to configure the RM (Resource Manager) Unified CM Telephony provider for the RmCm subsystem.
- **Assign Skills**—Click this submenu to assign skills and a resource group to agents in bulk.
- **Agent Based Routing Settings**—Click this submenu to send a call to a specific agent, rather than to any agent available in a CSQ.
- **Teams**—Click this submenu to create or associate teams with various agents, CSQs, and supervisors.

## Skill Configuration

Use the Skills page to add, modify, or delete skill.

Choose **Subsystems > RmCm > Skills** from the Unified CCX Administration menu bar to access the Skills summary web page.

### Add New Skill

Use the Skill Configuration area to add a new skill name.

### Procedure

---

Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the **Add New** button that displays at the bottom of the window to access the Skill Configuration area.

---

## Modify Skills

Click the required skill in the Skill name column on the Skill Configuration web page to access the Skill Configuration area.

### Procedure

---

Click the **Open Printable Report of this Skill Configuration** icon to view a list of the resources associated with that skill.

---

## Resources Configuration

Use the Resources Configuration area to assign a resource group, to assign skills to a resource, and to assign an alias to the agent. When the agent is on chat, the alias of the agent is displayed to the customer.

To access this configuration area, choose **Subsystems > RmCm > Resources** from the Unified CCX Administration menu bar. The main area of the Resources area of the Unified CCX Configuration web page contains a list of resources (if configured).

Click the **Open Resources Summary Report** icon to open the Resources Summary Report in a new window. For each resource, this report lists the resource groups associated with the resource, the Unified CCX extension of the resource, and the number of CSQs and team to which the resource is assigned.

## Modify Resource

Use the Resource Configuration area to modify resource configuration.

To access the Resource Configuration area, click any of the required resource in the Resource area of the Unified CCX Configuration summary web page.

### Procedure

---

Click the **Open Printable Report of this Resource Configuration** icon to open a Resource Report for the agent. The Resource Report lists each agent resource ID, resource name, Unified CCX extension, resource group, automatic available status, skills, CSQs, and team.

---

## Resource Group Configuration

Use the Resource Group Configuration web page to display and modify the names of existing resource groups and to add new resource groups.

Choose **Subsystems > RmCm > Resource Groups** from the Unified CCX Administration menu bar to access the Resource Groups web page.

### Add New Resource Group

Use the Resource Configuration area to enter resource group name in the Resource Group Name field.

#### Procedure

---

Add a new Resource Groups by clicking **Add New** icon or button in the Resource Group area of the Unified CCX Configuration web page.

---

### Modify Existing Resource Groups

Use the Resource Modification page to change or update the resource group name into the Resource Group Name field.

Modify an existing Resource Group by clicking the required resource group in the Resource Groups area. In the Resource Group Configuration area, change the Resource Group and update.

#### Procedure

---

Click the **Open Printable Report of this Resource Group Configuration** icon to view a list of the available resources for this resource group.

---

## Contact Service Queues Configuration

Use the Contact Service Queues area of the Unified CCX Configuration web page to display existing CSQs, delete a CSQ, and add a new CSQ.

To access the Contact Service Queues area, choose **Subsystems > RmCm > Contact Service Queues** from the Unified CCX Administration menu bar.

### Add a CSQ

Use the Contact Service Queues Configuration area to add a new CSQ.

To access the Contact Service Queues Configuration area, click the **Add New** icon or button in the Contact Service Queues area of the Unified CCX Configuration web page.

To open the Contact Service Queue Report for the required CSQ, click the **Open Printable Report of this CSQ Configuration** icon from the Contact Service Queues Configuration area.

## RmCm Provider Configuration

Use the RmCm Provider area of the Unified CCX Configuration web page to identify the Unified CM Telephony user for the Resource Manager.

Choose **Subsystems > RmCm > RmCm Provider** from the Unified CCX Administration menu bar to access the RmCm Provider web page.

## Skills Configuration Assignment

Use the Assign Skills area of the Unified CCX Configuration web page to modify an existing resource group and skill configuration or to assign new resource groups and skills to all or selected agents.

Choose **Subsystems > RmCm > Assign Skills** from the Unified CCX Administration menu bar to access this configuration area.

This web page also contains the following icons and buttons:

- **Add Skill**—to add new skills or resource groups to all or selected agents.
- **Remove Skill**—to remove skills of all or selected agents.

### Add Skills

When you click the **Add Skill** button in the Assign Skills area of the Unified CCX Configuration web page, the Add Skill area opens. Use the Add Skill area to add a resource group and skills to the selected agents.

### Remove Skills

When you click the **Remove Skill** button in the Assign Skills area of the Unified CCX Configuration web page, the Remove Skill area opens. Use the Remove Skill area to remove skills of all or selected agents.

## Agent Based Routing Settings Configuration

Use the Agent Based Routing Settings area of the Unified CCX Configuration web page to configure Automatic Work and Wrapup Time.

Choose **Subsystems > RmCm > Agent Based Routing Settings** from the Unified CCX Administration menu bar to access this configuration area.

## Teams Configuration

Use the Teams area of the Unified CCX Configuration web page to create or associate teams with various agents, CSQs, and supervisors.

Choose **Subsystems > RmCm > Teams** from the Unified CCX Administration menu bar to access this configuration area.

### Add New Team

Click the **Add New** icon or button on the Teams summary web page. The Team Configuration page appears.



Click the **Open Printable Report of this Team Configuration** icon in the Teams web page to open the report in a new window and send it to a printer.

## Chat and Email Menu Options

**Tip**

- The **Chat and Email** option is available with Unified CCX Premium license package.

To access either of these menu options, choose **Subsystems > Chat and Email** as applicable.

The Chat and Email menu contains the following submenu options:

- **SocialMiner Configuration**—Choose this option to configure the SocialMiner parameters. This page also displays the overall health of SocialMiner.
- **Mail Server Configuration**—Choose this option to configure the mail server. This page is available on the Unified CCX node with a premium license.
- **Contact Service Queues**—Choose this option to configure chat and Email CSQs. You can configure the email CSQs on the Unified CCX node with a premium license.
- **Predefined Responses**—Choose this option to define the chat and email predefined responses that are available in the Manage Chat and Email gadget on the Finesse Agent Desktop.
- **Channel Parameters**—Choose this option to configure channel parameters.
- **Chat Widget**—Choose this option to configure and manage chat widgets.
- **Teams**—Choose this option to configure teams.

## SocialMiner Configuration

Use the **SocialMiner Configuration** web page to configure Cisco SocialMiner. You must configure information only on this web page to enable the chat and email features.

Cisco Unified CCX does not support custom configuration changes on the chat and email campaigns or feeds from the SocialMiner administration page.

This option is available only with the Unified CCX Premium license package. The email feature support for Unified CCX depends on the SocialMiner version. For information about feature compatibility, see the Unified CCX Compatibility related information, located at: <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>.

Any configuration change using SocialMiner Administration interface is not supported.

**Note**

On a high availability setup, after the **Add to Cluster** operation is successful, the following message is displayed:

In case of HA, configure the SocialMiner on secondary node after adding to cluster in the secondary node.

Every time you navigate to this page, the state of feeds, campaigns, and notifications rules are validated for chat and email, the connectivity to the email server is checked, and the web page shows the appropriate status. Icons are used as visual indicators to display the status of each service. Hover the cursor over the icon to display a tool tip that explains the reason for the current state. As part of validation, Unified CCX checks the following:

- **SocialMiner XMPP Service**

Unified CCX checks the connectivity with the SocialMiner XMPP service. If the XMPP service is down, the following message is displayed:

```
SocialMiner XMPP service is not accessible. Check the logs for more details.
```

- **SocialMiner Runtime Service**

Unified CCX checks the connectivity with the SocialMiner runtime service. If the runtime service is down, the following message is displayed:

```
SocialMiner runtime service is not accessible. Check the logs for more details.
```

- **SocialMiner Tomcat Service**




Unified CCX checks the connectivity with the SocialMiner Tomcat service. If the Tomcat service is down, the following message is displayed:

```
Unable to communicate to the SocialMiner on the IP address(Hostname) provided. Please verify whether SocialMiner is running on this IP address(Hostname) or check the network connection and make sure that SocialMiner is reachable from CCX.
```

- **SocialMiner Status**




- **Feeds**

Unified CCX validates the status of the intended chat and email feeds in SocialMiner.

- —All the feeds are operating normally in SocialMiner.
- —One or more feeds mismatches with SocialMiner.
- —All the feeds are missing in SocialMiner.








- **Campaigns**

Unified CCX validates the status of the intended chat and email campaigns in SocialMiner.

- —All the campaigns are operating normally in SocialMiner.
- —One or more campaigns mismatches with SocialMiner.
- —All the campaigns are missing in SocialMiner.

- **Notifications**

Unified CCX validates the status of the intended chat and email notifications in SocialMiner.

- —All the notifications are operating normally in SocialMiner.
  - —One or more notifications mismatches with SocialMiner. This status icon also appears after configuration, when no chat and email contact is injected yet. The status will change to normal after successful injection of chat and email contact.
  - —All the notifications are missing in SocialMiner.
- **Email Cache**  
Unified CCX checks and alerts the user about the email cache.
    - —Email cache is operating normally.
    - —Unable to cache emails. No new emails will be fetched.
    - **Not Applicable**—SocialMiner version is not compatible.
  - **Email Server**  
Unified CCX checks the connectivity with the email server.
    - —Email server is operating normally.
    - **Not Configured**—Channel provider is not configured.
    - **Not Applicable**—The following are the reasons for the current state:
      - Cisco Finesse is not active.
      - Email CSQ is not configured.
      - SocialMiner version is incompatible with the Email feature.
    - —Unable to reach the email server.

## Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat > SocialMiner Configuration** OR **Subsystems > Chat and Email > SocialMiner Configuration** as applicable.

The **SocialMiner Configuration** web page appears.

**Note** Ensure that SocialMiner certificate is uploaded to the Unified CCX Tomcat trust store using the Cisco Unified OS Administration interface. You can also use the `set cert import trust tomcat CLI`.

Unified CCX and SocialMiner servers must have DNS entries. SocialMiner must be accessible to Unified CCX by hostname. If the entries are not valid, an error is displayed.

- Step 2** Specify the following fields for SocialMiner:

| Field                  | Description                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------|
| IP Address / Host Name | IP address or fully qualified domain name of the SocialMiner server. For example, 192.168.1.5 or host.example.com. |
| User Name              | Username of the SocialMiner administrator.                                                                         |
| Password               | Password of the SocialMiner administrator.                                                                         |

**Note** When the SocialMiner application password is reset, ensure that the new password is first updated in Unified CCX and then reset the password in SocialMiner. This prevents the account getting locked due to the authentication attempts from Unified CCX with old password.

**Step 3** Click **Save** to save the changes.

- Note**
- After saving a valid SocialMiner configuration, you cannot change the **IP Address / Host Name** details. If you want to change the configuration, delete the existing configuration and create a new one.
  - If you see an error message, click **Save** to re-create feeds, campaigns, and notifications for chat and email in SocialMiner.
  - When Unified CCX hostname is changed or when a new Unified CCX node is added, the SocialMiner Configurations must be saved again. This enables the change to take effect to re-create all the notifications for email and chat in SocialMiner.

## Reinject Email Contacts

Emails may be parked in SocialMiner due to component failures or if the email server is down or not reachable. You can ensure that these emails are attended to when the services are restored by reinjecting the email contacts.



**Note** The latest 200 unread or reserved, social email contacts across the email CSQs are reinjected.

### Procedure

To reinject the email contacts back to Unified CCX, click **Subsystems > Chat and Email > SocialMiner Configuration > Reinject**.

**Note** The **SocialMiner Configuration** web page is reloaded, but the configuration is not updated.

## Chat Transcripts

You can search and retrieve stored chat transcripts. You can search by username (chat.agentName) and alias (chat.agentNickname). For more information on how to perform a default search or a field-specific search, see the “Search” section of the *Cisco SocialMiner User Guide* or the SocialMiner interface online help.

For information on how to change chat storage space and calculate the disk space that you need to store data for a specific duration, see the online help that is available for the SocialMiner interface or see the *Cisco SocialMiner User Guide*, located at:

<https://www.cisco.com/c/en/us/support/customer-collaboration/socialminer/products-user-guide-list.html>

## Mail Server Configuration

Use the **Mail Server Configuration** web page to configure the mail server. This web page is available on the Unified CCX node with a premium license.

### Before you begin

- Execute the commands **set-service msExchangeIMAP4 -startuptype automatic**, and **start-service msExchangeIMAP4** on Microsoft Exchange to set the Microsoft Exchange IMAP4 service to start automatically.
- Execute the command **set-service msExchangeIMAP4BE -startuptype automatic**, and execute **start-service msExchangeIMAP4BE** (for Microsoft Exchange 2013) on Microsoft Exchange to set the Microsoft Exchange IMAP4 Back End service to start automatically.
- Create accounts and email addresses to be used for CSQ creation.

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat and Email > Mail Server Configuration**.  
The **Mail Server Configuration** web page opens.
- Step 2** Complete or modify the following fields for the mail server:

| Field                  | Description                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------|
| Incoming (Secure IMAP) |                                                                                                |
| Host Name              | Fully qualified domain name (FQDN) of the incoming (IMAP) server. Do not enter the IP address. |
| Port Number            | Port number that is used to connect to the IMAP server.<br>The default port number is 993.     |
| Outgoing (Secure SMTP) |                                                                                                |
| Host Name              | FQDN of the outgoing (SMTP) server. Do not enter the IP address.                               |

| Field       | Description                                                                                |
|-------------|--------------------------------------------------------------------------------------------|
| Port Number | Port number that is used to connect to the SMTP server.<br>The default port number is 587. |
| Description | Description of the mail server.                                                            |

**Step 3** Click **Update** to save the changes.

---

## Contact Service Queues

### Before you begin

- You must create a skill before creating a CSQ. For information about creating a skill, see [Skills Configuration, on page 92](#).
- Before creating an email CSQ, you must have configured the mail server .

### Procedure

---

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat > Contact Service Queues** or **Subsystems > Chat and Email > Contact Service Queues** as applicable.

The Contact Service Queues (CSQs) web page opens and displays the information for existing chat and email CSQs if any.

**Step 2** To add a new chat or email CSQ, click the **Add New** icon that appears in the toolbar in the upper left corner of the window or the **Add New** button that appears at the bottom of the window.

The Contact Service Queue Configuration web page opens.

**Step 3** Specify the following fields:

| Field Name | Description       |
|------------|-------------------|
| CSQ Name   | Name for the CSQ. |

| Field Name                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resource Selection Criteria | <p>Resource selection criteria chosen for the chat CSQ.</p> <ul style="list-style-type: none"> <li>• <b>Longest Available</b>—Selects the agent who has been in the Available state for the longest amount of time.</li> <li>• <b>Most Skilled</b>—Used for expert agent chat distribution. Selects the agent with the highest total competency level. The total competency level is determined by adding the agent's competency levels for each assigned skill that is also assigned to the CSQ. <ul style="list-style-type: none"> <li>• Example 1: If Agent1 is assigned Skill1(5), Skill2(6), and Skill3(7) and CSQ1 specifies Skill1(min=1) and Skill3(min=1), the total competency level for Agent1 for CSQ1 is 12.</li> <li>• Example 2: If Agent1 is assigned Skill1(5) and Skill2(6), and Skill3(7) and CSQ1 specifies Skill1(min=1), only, the total competency level for Agent1 for CSQ1 is 5.</li> </ul> </li> </ul> <p><b>Note</b> If two agents score equal in the primary selection criteria, the agent who was updated first is assigned to the incoming chat.</p> |

Table 13: CSQ Type—Chat

| Field Name | Description  |
|------------|--------------|
| CSQ Type   | Choose Chat. |

Table 14: CSQ Type—Email

| Field Name     | Description                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSQ Type       | <p>Choose Email.</p> <p><b>Note</b> You can create up to 100 email CSQs. If you exceed the limit, the following error is displayed:</p> <pre>Cisco Unified CCX supports a maximum of 100 Email CSQs. Exceeded maximum limit for Email CSQs.</pre> |
| Mail Server    | Fully Qualified Domain Name (FQDN) of email server. This field displays the mail server that you configured.                                                                                                                                      |
| Email username | The email address to which emails are sent or retrieved.                                                                                                                                                                                          |
| Email password | Password for email account.                                                                                                                                                                                                                       |
| Folder Name    | The folder that holds the email messages in the email server.<br>Default value = Inbox                                                                                                                                                            |

| Field Name              | Description                                                                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poll Interval (Seconds) | Frequency in seconds to fetch emails from the server.<br>Default value = 600, Range = 10 to 86400                                                                                                                      |
| Snapshot Age (Minutes)  | Specify the time in minutes from when the emails are to be fetched.<br>Default value = 120, Range = 10 to 43200<br><br>For example, if you specify 120 minutes, this field fetches the emails from the last two hours. |

**Step 4** Click **Next**.

The Skill Association for CSQ area opens with the newly assigned CSQ name.

**Note** You can create up to 100 email CSQs. If you exceed the limit, the following error is displayed:

```
Cisco Unified CCX supports a maximum of 100 Email CSQs. Exceeded maximum limit for Email CSQs.
```

**Step 5** From the Available Skills list, choose the skill that you want to associate with the CSQ by clicking it. To choose more than one skill, press the **Ctrl** key and click the skills that you want to associate with the CSQ.

**Step 6** Click **Add**.

The chosen skill and the minimum competence level for that skill are displayed in the right pane under the heading **Selected**.

**Note** To delete the skill from the Skills Required list, click the **Delete** icon next to **Minimum Competence**.

**Step 7** Specify a minimum competence level for the skill assigned to the CSQ.

**Step 8** To view the associated resources, click **Show Resources**.

**Step 9** Click **Save** to save the changes for the CSQ.

The newly added CSQ appears in the **List of CSQs**.

**Note** You can create up to 100 email CSQs. If you exceed the limit, the following error is displayed:

```
Cisco Unified CCX supports a maximum of 100 Email CSQs. Exceeded maximum limit for Email CSQs.
```

You can sort the CSQs by title by clicking the **CSQ Name** header and by type by clicking the **CSQ Type** header.

**Step 10** To view the printable report and associated resources, click the CSQ for which you want view the report and the associated resources and then click **Open Printable Report**.

**Note** To delete a CSQ, click the CSQ that you want to delete and then click **Delete**. A warning dialog box appears, asking you to confirm the deletion. To delete, click **OK**.



**Caution** Deletion of the chat CSQ affects the associated chat web forms. After deleting, modify the corresponding chat web form configurations and generate the HTML code.

---

## Predefined Responses

To access the predefined responses, choose **Subsystems > Chat > Predefined Responses OR Subsystems > Chat and Email > Predefined Responses** as applicable.

Use the **Predefined Responses** page to configure and manage chat and email predefined responses. You can add a maximum of 500 chat and email predefined responses in total. These predefined responses are available in the Manage Chat and Email gadget on the Finesse Agent Desktop.

You can configure the responses to be available either to all the agents or only to the agents that are associated with specific CSQs.



**Note** Predefined responses are not available in the Cisco Agent Desktop. They are only available with the Finesse Agent Desktop.

---

## Predefined Responses

Using this web page, you can add, modify, and delete predefined responses.

You can add a maximum of 500 chat and email predefined responses in total.



**Note** To modify an existing predefined response, click the Title header for the predefined response that you want to modify. To delete an existing predefined response, click the **Delete** icon for the predefined response that you want to delete.

---

### Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat > Predefined Responses OR Subsystems > Chat and Email > Predefined Responses** as applicable.  
The **Predefined Responses web page** opens, displaying the information for existing responses, if any.
- Step 2** Click the **Add New** icon that is displayed in the toolbar in the upper left corner of the window or the **Add New** button that is displayed at the bottom of the window to create a new response.  
The **Predefined Response Configuration web page** opens.
- Step 3** Specify the following information:

| Field                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title                | <p>Unique identifier of the predefined response.</p> <p><b>Note</b> The special characters angle brackets (&lt;&gt;), parentheses ( ( ) ), double quotation marks ( " " ), and pipe symbol (   ) are not allowed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Type                 | Types of media.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Response Description | <p>Description for the predefined response.</p> <ul style="list-style-type: none"> <li>Rich Text Editor is available to create an HTML-based email predefined response.</li> </ul> <p>Use the supported tags as provided in the Rich Text Editor for formatting purpose.</p> <ul style="list-style-type: none"> <li>Plain Text Editor is available to create a chat predefined response.</li> </ul> <p><b>Note</b> The special characters angle brackets (&lt;&gt;), parentheses ( ( ) ), double quotation marks ( " " ), and pipe symbol (   ) are not allowed in Plain Text Editor for Chat Predefines Response.</p> <p>The maximum characters limit for predefined response for chat and email is 1500.</p> <p>In case of email, rich text is supported and includes the HTML tag characters for representing rich text.</p> |
| Tags                 | <p>Choose a tag for the predefined response.</p> <ul style="list-style-type: none"> <li><b>Global for all CSQs:</b> The predefined response is available to all the agents that are associated with all the CSQs.</li> <li><b>Customize (Maximum 10 CSQs):</b> The predefined response is available only to the agents that are associated with the selected CSQs.</li> </ul> <p>If you choose this option, select the CSQs from the <b>Available CSQs</b> pane, and then click the left arrow to assign them.</p> <p><b>Note</b> Predefined responses can be used only for emails sent in HTML format and not plain text.</p>                                                                                                                                                                                                  |

**Step 4** Click **Save**.

The newly added predefined response appears with the assigned tags in the **List of Predefined Responses**. You can sort the predefined responses by title by clicking the Title header and by type by clicking the Type header.

## Channel Parameters

Use the Channel Parameters web page to configure channel parameters.

## Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat > Channel Parameters** OR **Subsystems > Chat and Email > Channel Parameters** as applicable.

The Channel Parameters Configuration web page opens.

**Step 2** Use this web page to specify or modify the following fields for channel parameters:

| Field                                      | Description                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Answer Timeout (Seconds)                | The time for an agent to respond to the chat request after which, the chat request is routed back to the chat queue.                                                                                                                                                                                                                                                        |
| Join Timeout (Minutes)                     | The time after which the customer initiates a chat and, if an agent is not joined, the customer gets a message as per the configuration in the <b>Chat Web Form Configuration</b> page. But an agent can still join the chat after this timeout. The default timeout is one minute and the maximum timeout value allowed is 60 minutes.                                     |
| Inactivity Timeout (Minutes)               | The customer inactivity time after which, the system ends the chat. This timeout is on the customer side only.<br><br>The agent gets a message " <b>You are alone in the chat room. Click End to close the chat interface.</b> "<br><br>The customer gets a message " <b>Warning: the server connection was lost due to an inactivity timeout or connection failure.</b> ". |
| Offer Chat Contact When On Voice Call      | Click Yes if agents are allowed to handle a chat session during a voice call.<br><b>Note</b> This setting takes effect when the agent ends the current voice call.                                                                                                                                                                                                          |
| Offer Voice Call When On Chat              | Click Yes if agents are allowed to handle a voice call during a chat session.<br><b>Note</b> This setting takes effect when the agent receives a new incoming chat.                                                                                                                                                                                                         |
| Maximum Number Of Chat Sessions Per Agent  | Number of chat sessions (ranging from 1 to 5) that an agent is allowed to handle.                                                                                                                                                                                                                                                                                           |
| Maximum Number Of Email Sessions Per Agent | Number of Email sessions (ranging from 1 to 5) that an agent is allowed to handle.                                                                                                                                                                                                                                                                                          |

| Field                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sticky Email Timeout (Hours) | <p>Specify the amount of time for which an email message waits in a specific agent CSQ.</p> <p>Sticky email routing (Last-agent email routing) is a mechanism to route an email message to the agent who handled the last leg of the email conversation.</p> <p>When an email message, which is part of an ongoing conversation, comes in and the agent who handled the last leg of the conversation is not available, then the email does not wait indefinitely in that agent queue. After the configured time expires, the email message is placed on the intended CSQ to be handled by any available agent.</p> <p><b>Note</b> Last-agent email routing is not available if the customer changes the subject line of the email message.</p> <p>Default = 4 hours, Range = 1 to 120 hours.</p> |

**Step 3** Click **Save** to save the changes for the channel parameters.

**Note** If any of the above parameters are changed during the call center operation, the updated values are not applied to the existing contacts in the system. The changed parameters will affect only the new contacts coming into the system.

## List Chat Web Forms

Use the chat widgets to generate HTML code that can be hosted on the customer website. Use the List Chat Web Forms page to configure and manage chat web forms. To access the chat web forms, choose **Subsystems > Chat > Chat Widget List** OR **Subsystems > Chat and Email > Chat Widget List** as applicable.

### Chat Web Form Configuration

You can add, modify, and delete chat web forms.



**Note** To modify an existing chat web form, click the web form. To delete an existing chat web form, click the delete icon.

#### Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Chat > Chat Widget List** OR **Subsystems > Chat and Email > Chat Widget List** as applicable .

The List Chat Web Forms web page opens, displaying the information for existing Chat Web Forms, if any.

**Step 2** Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the **Add New** button that displays at the bottom of the window to create a new chat web form.

The Chat Web Form Configuration web page opens

**Step 3** Specify the following information:

| Page Area      | Field                 | Description                                                                                                                                                                                                            |
|----------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Widget Details | Name                  | Unique identifier of the chat widget.                                                                                                                                                                                  |
|                | Description           | Chat widget description.                                                                                                                                                                                               |
|                | Logo URL              | Location of the logo file that is displayed in the widget.<br><b>Note</b> The custom logo size will be resized to 300 x 300 pixel by default.                                                                          |
|                | Widget Wait Message   | Message that is displayed to the customer when the customer starts a chat session.<br>Default message: “Welcome. Please wait while we connect you to a customer care representative.”                                  |
|                | Join Time-out Message | Message that is displayed to the customer when a chat request is not handled within the set time.<br>Default message: “All customer care representatives are busy. Please wait or try again later.”                    |
|                | Error Message         | Message that is displayed to the customer when Unified CCX or chat service is not available to handle chat requests.<br>Default message: “Sorry, the chat service is currently not available. Please try again later.” |

**Step 4** Select the desired fields from the **Available Fields** and move it to the **Selected Fields** in the User Form Fields area.

**Step 5** Click the **Add Custom Field** button if you want to create new field(s) in addition to the list of available fields. The Explorer User Prompt dialog box opens.

**Step 6** Enter the name of the new custom field in the text box and click **OK**. The new custom field should appear in the list of Selected Fields.

**Step 7** Click **Next**. The Add problem Statement CSQ mapping area opens.

**Step 8** Add the problem statement for the chat web form and map the same with an existing chat CSQ.

**Step 9** Click any of the following:

- Click the **Add More** button if you want to add more problem statements and associate the same with chat CSQs.
- Click the **Delete** button subsequent to the CSQ List if you want to delete the problem statement.

**Step 10** Click **Next**.

The Web Form Preview area displays a preview of how the chat web form will look after it is created. It will display all the fields that you had selected for the user form and problem statements along with CSQ mapping.

**Step 11**

Click any of the following:

- Click the **Back** button if you want to modify the configuration of the chat web form.
  - Click the **Finish** button if you want to generate the web form code.
- 

## Teams

Choose **Subsystems > Chat > Teams** OR **Subsystems > Chat and Email > Teams** as applicable from the Unified CCX Administration menu bar to access this configuration area.

**Note**

The team configuration for chat is the same as it is for voice.

---

## Outbound Menu

Use the Outbound Configuration web page or REST API to provision outbound dialing functionality feature.

The Outbound menu option will be displayed when you upload the Cisco Unified Premium license.

## General Configuration

Choose **Subsystems > Outbound > General** from the Cisco Unified CCX Administration menu bar to access the General Configuration web page.

Use this web page to add or modify Outbound dialing preferences.

## Campaign Configuration

Choose **Subsystems > Outbound > Campaigns** from the Cisco Unified CCX Administration menu bar to access the Campaigns web page. You can create and schedule a campaign, modify the settings that apply to a campaign, and import a list of contacts (in bulk from a text file) into the Unified CCX database for each campaign using this web page.

You can define any one of the following two types for a campaign:

- Agent-based - If you select this campaign type, all the outbound calls will be handled by the available agents.
- IVR-based - In this campaign type, the outbound calls will be handled by the IVR scripts.

**Note**

The existing campaigns will be marked as Agent-based after an upgrade from Unified CCX versions prior to 9.0(1).

---

## Add New Campaigns

To configure the properties for direct preview, progressive and predictive agent-based campaigns, for campaign name and description, callback settings, skill group selection, time range, dialing options, retry settings, and the dial settings, click **Add New** icon or button in the Campaigns web page.

## Import Contacts

To import contacts for a selected campaign, click the hyperlink for the required campaign under the Name column and click **Import Contacts**. This will open the Import Contacts window through which you can import contacts.

The **Open Printable Report for this Campaign Configuration** icon provides the information for the selected campaign in addition to call-specific information, which varies depending on the selected dialer type for outbound. Few of them are:

- Campaign Name
- Enabled - Yes or No
- Description
- Start Time of the campaign
- End Time of the campaign
- Contact Records Cache Size
- Remaining Contacts

## Delete Contacts

To ensure that a contact does not get called again for subsequent campaigns, you must delete the contact from all campaigns to which it belongs.

Click **Delete All Contacts** icon or button in the Campaign Configuration web page to delete all contacts of a particular campaign. Once you click **Delete All Contacts**, you will see a dialog box with the message “This campaign will be disabled and all its contacts will be permanently deleted. Continue?” with **OK** and **Cancel** buttons.

If you click **OK**, the Outbound subsystem checks whether the contacts are used in an active Outbound campaign. If the contacts are used as part of an active Outbound campaign, you will see the following alert message in the status bar at the top of the Campaign Configuration web page: “Campaign is active. Cannot remove contacts from an active campaign. Disable the campaign and try again.” In such cases, disable the campaign first and then try deleting all contacts. Click **Cancel** if you do not want to delete all contacts for the specific campaign.

## Area Code Management

Use this page to manually add new area codes, update existing area codes, and to add international area codes.

### Add New Area Code

The Area Codes Management page allows you to find, add, delete, and modify the mapping of area codes and time zones. The dialer uses the area code of a contact phone number to determine the time zone of the contact calling area.

## Configure SIP Gateway

You can use the SIP Gateway Configuration web page to add or modify the parameters that enable the Outbound subsystem of Unified CCX to communicate with the SIP gateway. You can also update the parameters specific to Call Progress Analysis functionality of the gateway using this web page.

Call Progress Analysis is a feature of the SIP gateway by which it determines whether the outcome of a call is an answering machine, live voice, fax, or beep tone and so on. The SIP gateway performs call progressive analysis of the call and informs the outcome of the call to Unified CCX.



**Note** It is mandatory to configure the SIP Gateway used by the Outbound subsystem to place calls in case of IVR-based and agent-based progressive and predictive Outbound campaigns.

Follow this procedure to configure the SIP gateway parameters through Unified CCX Administration web interface:

### Procedure

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Outbound > SIP Gateway Configuration**.
- The SIP Gateway Configuration web page opens.
- Step 2** Click **Update** to save the configuration changes.
- The new SIP gateway configuration is added to the Unified CCX system.
- Step 3** Click **Cancel** to restore the default settings.

## SIP Gateway Configuration Web Page

The SIP Gateway Configuration web page.

| Field                        | Description                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gateway Configuration</b> |                                                                                                                                                                                   |
| Gateway Hostname/IP Address  | The HostName or IP Address of the SIP Gateway in the Unified CCX server, which will be used by the Outbound subsystem to place calls for the predictive or progressive campaigns. |
| Gateway Port                 | The SIP port used by the gateway to communicate with Unified CCX. The default value is 5060.                                                                                      |
| Local CCX Port               | The port number to be used on the Unified CCX server to communicate with the gateway.<br>Default = 5065, Range = 1025-32767 or 61001-65535                                        |



|                                                                                                                                          |                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local User Agent                                                                                                                         | This read-only field provides a description of the owner for this connection. The default value is Cisco-UCCX/8.5.                                                                                                                                       |
| Transport(TCP/UDP)                                                                                                                       | The protocol required to send SIP messages. You can select any one of the following protocols: <ul style="list-style-type: none"> <li>• TCP - Transport Control Protocol or</li> <li>• UDP - User Datagram Protocol</li> </ul> The default value is UDP. |
| <b>Call Progress Analysis Configuration (displays the parameter name, parameter value, and suggested value for the following fields)</b> |                                                                                                                                                                                                                                                          |
| Minimum Silence Period (10-1000)                                                                                                         | The amount of time that the signal must be silent after speech detection to declare a live voice (in milliseconds).<br>Default = 375 milliseconds, Range = 10-1000 milliseconds                                                                          |
| Analysis Period (1000 - 10000)                                                                                                           | Maximum amount of time (from the moment the system first detects the speech) during which analysis will be performed on the input audio.<br>Default = 2500 milliseconds, Range = 1000-10000 milliseconds                                                 |
| Maximum Time Analysis (1000-10000)                                                                                                       | The amount of time to wait when it is difficult for the dialer to determine voice or answering machine.<br>Default = 3000 milliseconds, Range = 1000-10000 milliseconds                                                                                  |
| Minimum Valid Speech Time (50-500)                                                                                                       | Amount of time that the signal must be active before being declared speech. Anything less is considered as a glitch.<br>Default = 112 milliseconds, Range = 50-500 milliseconds                                                                          |
| Maximum Term Tone Analysis (1000-60000)                                                                                                  | This is the amount of time the gateway will look for a terminating beep once an answering machine has been detected.<br>Default = 15000 milliseconds, Range = 1000-60000 milliseconds                                                                    |

## Dial Peer Configuration for Outbound

Dial peer configuration is required to transfer the outbound calls to the IVR ports and agents in case of progressive and predictive outbound campaigns. The dial peer maps to the CUCM trigger for IVR-based campaigns and to the agent extension for agent-based campaigns.

When you configure voice-network dial peers, the key commands that you must configure are the **destination-pattern** and **session-target** commands.

### IVR

For IVR-based progressive and predictive campaigns, the **destination-pattern** command specifies the Unified CM Telephony Trigger associated with the IVR campaign. The **session-target** command specifies a destination address for the voice-network peer.

### Agent

For agent-based progressive and predictive campaigns, the **destination-pattern** command specifies the agent extension. The **session-target** command specifies a destination address for the voice-network peer.

For Extend and Connect, the **destination-pattern** must specify the destination address of the CTI Remote Device (CTIRD). See the *Cisco Unified TAPI Developers Guide for Cisco Unified Communications Manager* at [https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod\\_installation\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html) for more information on CTIRD.

### Disable Hunting for Agent-Based Outbound Calls

When the agent does not answer a live voice call within the time limit configured for Outbound Call Timeout in General Configuration web page, then the call has to be dropped. If hunting is not disabled on the gateway, the call is not dropped and is forwarded to the agent extension.

The gateway receives a 403 forbidden error message and hunts for the “preference 2 dial peer.” The gateway forwards the call to the agent extension using the “preference 2 dial peer.” Hence, the call is seen on the agent desktop and the state of the agent is changed to Ready or Not Ready depending on the option selected for the Agent State after Ring No Answer field in System Parameters Configuration web page.

To disable hunting for the gateway, use **no voice hunt 57** command (57 maps to 403 forbidden in SIP).



#### Note

This is a global configuration to restrict the gateway from hunting for all 403 forbidden error messages.

### Translation of Phone Numbers

Unified CCX does not support the translation or modification of the phone number that it uses to dial out outbound calls. Any “voice translation rules” configured in the gateway that modifies the phone number are not supported. If the phone number is translated, then those calls are not treated as IVR or agent-based outbound calls. Any such calls cannot have all the functionality and capabilities of a normal IVR or agent-based outbound calls.



#### Note

You can use either of the below two supported methods to modify a dialed number in the gateway:

- To remove the initial digits of the phone number use **forward-digits** or **digit-strip** in the dial peer configuration.
- To add a prefix to the phone number use **prefix** in the dial peer configuration.

See the *Dial Peer Configuration on Voice Gateway Routers* at [https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod\\_installation\\_guides\\_list.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1844/prod_installation_guides_list.html) for detailed information on dial peers.

## Database Menu

The Unified CCX system uses the Database subsystem of the Unified CCX Engine to communicate with database servers, to obtain information that can be relayed to callers or to make application decisions. The Database subsystem enables the Unified CCX applications to obtain information from data sources, which are databases configured to communicate with the Unified CCX system.

The Database menu contains the following options, which are explained below:

- Datasource
- Parameters
- Drivers

## DataSource

Use the DataSources web page to add a new data source, display, modify, or delete existing datasources.

Choose **Subsystems > Database > DataSource** from the Cisco Unified CCX Administration menu bar to access the DataSources web page.

## New DataSource

Follow this procedure from the DataSources web page to add a new DataSource:

### Procedure

---

Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the button that displays at the bottom of the window to add a new data source.

The DataSource Configuration web page opens.

---

## Add New Database Driver

Follow this procedure to add a new jdbc driver:

### Procedure

---

**Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Database > Drivers**.

The Driver List web page opens up displaying a list of uploaded driver class file names along with a Delete icon.

**Step 2** Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the **Add New** button that displays at the bottom of the window to add a new driver class name.

The Driver Management web page opens.

**Step 3** Specify a valid JDBC driver jar file in the Driver File field or click **Browse** to locate the driver file.

The driver file is validated before uploading.

**Step 4** Choose the supported class name for the new driver from the Driver Class Name drop-down list box.

**Step 5** Click **Upload** to save the new driver to the database.

- Tip**
- Contact your database vendor to know the appropriate JDBC driver versions that is compatible with your Enterprise database server. Though multiple jdbc driver versions are supported, the following table lists the JDBC drivers that have been tested with different databases.
  - While uploading com.ibm.db2.jcc.DB2Driver, if your IBM DB2 deployment also requires a license Jar to be in the application's classpath, upload the license Jar as a Custom Jar File using the procedure detailed in [Specify Custom Classpath Entries](#). Then, restart the Unified CCX Engine on all nodes through Unified CCX Serviceability.

**Table 15: JDBC Driver Versions Tested with Enterprise Database**

| Databases                 | Tested JDBC Drivers    |
|---------------------------|------------------------|
| Oracle 11g R2             | ojdbc6.jar             |
| Sybase Adaptive Server 12 | jTDS 1.2.2, jconn2.jar |
| IBM DB2 8.2               | db2jcc4.jar            |
| MS SQL Server 2000        | jTDS 1.2.2             |
| MS SQL Server 2005        | jTDS 1.2.2             |
| MS SQL Server 2008        | jTDS 1.2.5             |
| MS SQL Server 2012        | jTDS 1.2.5             |

## Driver

Use the Driver List web page to upload new drivers, or to view and delete existing drivers.

## Add New Database Driver

Follow this procedure to add a new jdbc driver:

## Procedure

---

- Step 1** From the Unified CCX Administration menu bar, choose **Subsystems > Database > Drivers**.
- The Driver List web page opens up displaying a list of uploaded driver class filenames along with a Delete icon.
- Step 2** Click the **Add New** icon that displays in the toolbar in the upper left corner of the window or the **Add New** button that displays at the bottom of the window to add a new driver class name.
- The Driver Management web page opens.
- Step 3** Specify a valid JDBC driver jar file in the Driver File field or click **Browse** to locate the driver file.
- The driver file is validated before uploading.
- Step 4** Choose the supported class name for the new driver from the Driver Class Name drop-down list box.
- Step 5** Click **Upload** to save the new driver to the database.
- Tip**
- For details on the compatible Enterprise database server version see, <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>. Ensure that a valid JDBC driver version is used that is compatible with the Enterprise database server.
  - Contact your database vendor to know the appropriate JDBC driver versions that is compatible with your Enterprise database server.
  - While uploading com.ibm.db2.jcc.DB2Driver, if your IBM DB2 deployment also requires a license Jar to be in the application's classpath, upload the license Jar as a Custom Jar File using the procedure detailed in **Specify Custom Classpath Entries**. Then, restart the Unified CCX Engine on all nodes through the Unified CCX Serviceability.
- 

## HTTP Menu

The Unified CCX system uses the HTTP subsystem of the Unified CCX Engine to add components to the Unified CCX Engine that allow applications to be triggered in response to requests from a variety of web clients, including computers and IP phones.

HTTP/HTTPS triggers are available if your system has a license installed for one of the following Cisco product packages: Unified IP IVR or Unified CCX Premium.

## HTTP Trigger Configuration

Use the HTTP Trigger Configuration web pages to display, add, modify, and delete existing HTTP triggers.

Choose **Subsystems > HTTP** from the Cisco Unified CCX Administration menu bar to access the HTTP Trigger Configuration web page.

## Add New HTTP Trigger

To add a new HTTP trigger:

### Procedure

---

Click the **Add New** icon or button on the HTTP Trigger Configuration web page to access the HTTP Trigger Configuration web page.

To modify an existing trigger, click any hyperlink within the HTTP Trigger List table; the HTTP Trigger Configuration web page opens.

---

## eMail Menu

The Unified CCX system uses the eMail subsystem of the Unified CCX Engine to communicate with your email server and enable your applications to create and send email. The email configuration identifies the default email address and server to be used for sending email (including e-pages and faxes) and for receiving acknowledgments.



---

**Note** This email subsystem is not related to agent email-based routing.

---

Choose **Subsystems** > **eMail** from the Cisco Unified CCX Administration menu bar to access the eMail Configuration web page. You must configure email functionality so that Unified CCX scripts created with the email steps will function correctly.

## Cisco Media

Choose **Subsystems** > **Cisco Media** from the Unified CCX Administration menu bar to access the Cisco Media Termination Dialog Group Configuration web page.

The Unified CCX system uses the Media subsystem of the Unified CCX Engine to configure Cisco Media Termination (CMT) dialog groups that can be used to handle simple Dual-Tone Multi-Frequency (DTMF) based dialog interactions with customers. A dialog group is a pool of dialog channels in which each channel is used to perform dialog interactions with a caller.

To modify an existing CMT dialog group, click any hyperlink within the trigger's summary table entry; the Cisco Media Termination Dialog Group Configuration web page opens.

To add a new CMT dialog group, click the **Add New** icon or button in the Cisco Media Termination Dialog Group Configuration web page. The Cisco Media Termination Dialog Group Configuration web page opens.

# MRCP ASR Menu

The Unified CCX system uses the MRCP ASR (Automatic Speech Recognition) subsystem to allow navigation through a menu of options by speaking instead of pressing keys on a touch-tone telephone.

## MRCP ASR Provider

Choose **Subsystems > MRCP ASR > MRCP ASR Provider** from the Cisco Unified CCX Administration menu bar to configure information about the vendor of your speech server, including the number of licenses, and the grammar type.

To modify an existing ASR Provider information, click any hyperlink within the provider's summary table entry; the ASR Provider Configuration web page opens.

To add a new ASR Provider information, click the **Add New** icon or button.

## MRCP ASR Servers

Choose **Subsystems > MRCP ASR > MRCP ASR Servers** from the Cisco Unified CCX Administration menu bar to configure your speech server name, port location, and available languages.



---

**Note** You must have a MRCP ASR Provider defined before you can provision a MRCP ASR Server.

---

To modify an existing ASR Server, click any hyperlink within the server summary table entry; the ASR Server Configuration web page opens.

To add a new ASR Server, click the **Add New** icon or button.

## MRCP ASR Dialog Groups

Use the MRCP ASR Dialog Group Configuration web page to display, add, modify, and delete information about MRCP ASR dialog control groups, which enable Unified CCX applications to use speech recognition.

Choose **Subsystems > MRCP ASR > MRCP ASR Dialog Groups** from the Cisco Unified CCX Administration menu bar to configure the MRCP ASR dialog control groups.



---

**Note** You must have a MRCP ASR Provider defined before you can provision a MRCP ASR Group.

---

To modify an existing MRCP ASR Dialog Group, click any hyperlink within the group summary table entry; the MRCP ASR Dialog Control Group Configuration web page opens.

To add a new MRCP ASR Group, click the **Add New** icon or button.

# MRCP TTS Menu

The Unified CCX system uses the MRCP (Text-to-Speech) subsystem to convert plain text (UNICODE) into spoken words to provide a user with information or to prompt a user to respond to an action.

## MRCP TTS Providers

Use the MRCP TTS Provider Configuration web pages to display, add, modify, and delete information about your TTS Provider.

Choose **Subsystems** > **MRCP TTS** > **MRCP TTS Provider** from the Cisco Unified CCX Administration menu bar to configure information about the vendor of your TTS system.

To modify an existing MRCP TTS Provider, click any hyperlink within the provider summary table entry; the MRCP TTS Provider Configuration web page opens.

## MRCP TTS Servers

Use the MRCP TTS Server Configuration web page to display, add, modify, and delete the text-to-speech server name, port location, and available language.

To modify an existing MRCP TTS Server, click any hyperlink within the server summary table entry; the MRCP TTS Server Configuration web page opens.

To add a new MRCP TTS Server, click **Add New** icon or button in the MRCP TTS Server Configuration web page.

### Related Topic

[Provision MRCP TTS Servers, on page 84](#)

## MRCP TTS Default Genders

Use the MRCP TTS Default Genders Configuration web page to display or modify the gender setting for each Locale. You can modify the default gender setting for the Locales specified during TTS Server provisioning using this page. Click the **Update** icon or button to save the changes.

### Related Topic

[Provision MRCP TTS Default Genders, on page 86](#)





## CHAPTER 18

# Wizards Menu

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The Wizards menu of the Unified CCX Administration web interface provides access to the wizards available for your Unified CCX system.

In each Wizard web page, you are provided with a list of procedures and a description for each procedure in the main pane.

Click the **Exit** icon in the toolbar in the upper left corner of the window or the **Exit** button that displays at the bottom of the window to exit the wizard at any time and to go to the main Unified CCX Administration menu bar. Click **Next** to go to the next wizard menu option.

The Unified CCX system contains the following options in the Wizards menu:

- [Application Wizard, on page 297](#)
- [RmCm Wizard, on page 298](#)

## Application Wizard

Application Configuration is one of the very basic requirements in Unified CCX Administration. You must complete several steps in the following order to successfully complete Application Configuration.

To access the Application Wizard, select **Wizards > Application Wizard > Description of Steps** from the Unified CCX Administration menu bar. The Application Configuration Wizard: Description of Steps web page opens up, displaying the different steps to perform the configuration, along with a brief description of each step as shown in the following bulleted list.

Click **Next** to proceed to the subsequent steps from the main Application Configuration Wizard web page or jump directly to any step using **Wizards > Application Wizard** and clicking the desired submenu (see **Configure Unified CCX Applications**).

- **Scripts**—In this step, you can view a list of existing custom scripts. When you click the **Next** button from the main Application Configuration Wizard web page, you are transferred to Script Management web page, which lists the available scripts, provides links to create a folder, and uploads custom scripts. Scripts can be uploaded as either a single script file or a zip file of scripts. You can upload multiple scripts in this step (see **Script Management**).
- **Prompts**—In this step, you can view a list of existing custom prompts. The Prompt Management web page lists the available prompts, provides links to create new folders, and uploads custom prompts. Prompts can be uploaded as either a single prompt file or a zip file of prompts. You can upload multiple prompts in this step (see **Manage Prompt Files**).

- **Grammars**—In this step, you can view a list of existing custom grammar files that are used to recognize and respond to caller prompts. The Grammar Management web page lists the available grammars, provides the links to create new folders, and uploads custom grammars. Grammars can be uploaded as either a single grammar file or a zip file of grammars. You can upload multiple grammars in this step (see **Manage Grammar Files**).
- **Documents**—In this step, you can view a list of existing custom documents such as .txt, .doc, .jsp, or .html, custom classes, and Java Archive (JAR) files that allow you to customize the performance of your Unified CCX system. The Document Management web page lists the available documents, provides the links to create new folders, and uploads custom documents. Documents can be uploaded as either a single document file or a zip file of documents. You can upload multiple documents in this step (see **Manage Document Files**).
- **Application Configuration**—In this step, you can select the type of application to be configured using Add a New Application page. Click **Next** to provide configuration details for the selected application type. Each application can be any combination of the scripts, prompts, grammars, and documents on file. By default, the uploaded script, prompt, document and grammar are selected, if applicable. You can create multiple applications in this step (see **About Unified CCX Applications**).
- **Triggers**—In this step, you can create different types of triggers for the applications that were created in the previous step using the Trigger Configuration page. More than one trigger can be created for one application. By default, the application configured in the previous step is automatically selected. On providing the Directory Number, device name and language, the trigger configuration is complete. You can create multiple triggers in this step (see **Application Triggers**).

Selecting the type of the trigger concludes the Application Configuration wizard process.

## RmCm Wizard

RmCm Configuration is a commonly performed procedure in the contact center environment. You must complete several steps to successfully complete RmCm Configuration. The RmCm Configuration wizard leads you through the following steps.




---

**Note** The RmCm Wizard option is available with all Unified CCX license packages.

---

To access the Application Wizard, select **Wizards > RmCm Wizard > Description of Steps** from the Unified CCX Administration menu bar. The Application Configuration Wizard: Description of Steps web page opens up displaying the different steps in which you can perform the configuration along with a brief description of each step as shown in the bulleted list below.

Click **Next** to proceed to the subsequent steps from the main RmCm Wizard web page or jump directly to any step using **Wizards > RmCm Wizard** and clicking the desired submenu.

- **Add a Skill**—Choose this submenu to configure the skills to be associated with the user. In this step, you are transferred to the **RmCm > Skills** web page. Repeat this step to create multiple skills.
- **Add a Resource Group**—Choose this submenu to upload multiple custom scripts. In this step, you are transferred to the Resource Group Configuration web page, where you can enter the Resource Group Name.

- **Add Resources**—Choose this submenu to create resource groups that will later be assigned to resources. In this step, you are transferred to RmCm Wizard - User Configuration web page, which has a hyperlink to **Add resources in Unified CM**. This link invokes **Unified CM** automatically (see the following related topics):
  - [RmCm Provider Configuration, on page 272](#)
  - [Unified Communications Manager for Unified CCX Configuration, on page 28](#)
- **Add Supervisors**—Choose this submenu to assign supervisor privileges to a user. In this step, you are transferred to the User Management web page, which allows you to search for a specific user.
- **Configure Resources**—Choose this submenu to add or remove skills that are associated with resources. In this step, you are transferred to the RmCm Configuration Resources web page, which lists the configured resources. Resources can be modified together to obtain the same skills, or they can be modified separately to be assigned different skills.
- **Modify Existing Contact Service Queues**—Choose this submenu to modify skills that are associated with a contact service queue. In this step, you are transferred to the RmCm Configuration Contact Service Queue web page, which lists the configured CSQs.
- **Add a Contact Service Queue**—Choose this submenu to add contact service queues. Skills or resource groups are associated to these contact service queues to filter out the resources. In this step, you are transferred to the RmCm Configuration Contact Service Queue Configuration web page, which allows you to add CSQs.
- **Modify Existing Teams**—Choose this submenu to modify agents in existing teams. In this step, you are transferred to the RmCm Configuration Contact Teams web page, which lists the configured teams.
- **Add a Team**—Choose this submenu to create new teams and associate those teams with new agents. In this step, you are transferred to the RmCm Configuration Team Configuration web page, which allows you to create new teams.
- **Create an Application**—On completing the RmCm configuration, you can optionally proceed to the Application Wizard configuration.





## CHAPTER 19

# Tools Menu

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The Tools menu of the Unified CCX Administration web interface provides access to system tools you can use to perform a variety of administrative tasks and contains the following menu options:

- **Plug-ins**—to download plug-ins that you can use to enhance the Unified CCX Engine.
- **Real-Time Reporting**—to generate reports that provide detailed information about the status of your Unified CCX system.
- **Real-Time Snapshot Config**—to configure the Unified CCX database connection to a wallboard display.
- **Historical Reporting**—to perform Historical Reporting tasks, including configuring the database server, synchronizing data, configuring users, installing client software, and purging your database.
- **User Management**—to assign access levels to administrators and supervisors.
- **Password Management**—to reset passwords for external database access users like workforce management, historical reporting user and so on.
- **W1 Upgrade**—to show if you have selected "Upgrade from a previous Unified CCX release" option during initial Appadmin setup in a single-node or high availability deployment.

The following sections describe the various menu options.

- [Plug-Ins Menu, on page 301](#)
- [Real-Time Reporting Menu, on page 302](#)
- [Real-Time Snapshot Config Menu, on page 302](#)
- [Historical Reporting Menu, on page 306](#)
- [User Management Menu, on page 309](#)
- [Password Management, on page 313](#)

## Plug-Ins Menu

The Unified CCX system includes software components called *plug-ins* that you can use to enhance the Unified CCX Engine. You can download these plug-ins from the Plug-ins web page.

To access the Plug-ins web page, choose **Tools > Plug-ins** from the Unified CCX Administration menu bar.

The Plug-ins web page contains one or more of the following hyperlinks (depending on the Unified CCX package you have purchased):

- **Cisco Unified CCX Editor**—Click this hyperlink to install the client-side Unified CCX Editor. For more information, see the *Cisco Unified Contact Center Express Getting Started with Scripts and Cisco Unified Contact Center Express Editor Step Reference Guide*.

**Caution**

Do not install the Unified CCX editor on the same machine as the Cisco Unity Editor. Both editors cannot coexist on the same machine.

- **Cisco Unified CCX Real-Time Monitoring Tool for Windows**—Click this hyperlink to install client-side Unified CCX Serviceability Real-Time Monitoring Tool (RTMT) for Windows. This tool monitors real-time behavior of the components in a Unified CCX cluster. RTMT uses HTTP/HTTPS and TCP to monitor device status, system performance, device discovery, and CTI applications. It also connects directly to devices by using HTTP/HTTPS for troubleshooting system problems. This plug in is available only for users with administrator capability.

**Note**

To download on Windows, right-click **Download** hyperlink and select Save Target As option.

- **Cisco Unified CCX Real-Time Monitoring Tool for Linux**—Click this hyperlink to install client-side Unified CCX Serviceability Real-Time Monitoring Tool (RTMT) for Linux. RTMT uses HTTP/HTTPS and TCP to monitor device status, system performance, device discovery, and CTI applications. It also connects directly to devices by using HTTP/HTTPS for troubleshooting system problems. This plug in is available only for users with administrator capability.

## Real-Time Reporting Menu

**Caution**

While Unified CM supports Unicode characters in first and last names, those characters become corrupted in Unified CCX Administration web pages for RmCm configuration, and Real Time Reporting.

The Real-Time Reporting tool is a Java applet that you can use to generate a variety of reports that provide detailed information about the status of your Unified CCX system. You use the Application Reporting web page to access the Real-Time Reporting tool.

To access the Application Reporting web page, choose **Tools > Real Time Reporting** from the Unified CCX Administration menu bar.

## Real-Time Snapshot Config Menu

Many call centers use wallboards to display their real-time reporting status. Wallboards can display data such as available agents in CSQs, call volumes, talk times, wait times, and number of handled calls. You can enable the Unified CCX system to write Unified CCX real-time information to a database that can then be displayed on a wallboard.



**Note** You must purchase the wallboard separately, and configure and control it with its own wallboard software. Wallboard software and hardware are supported by the third-party wallboard vendors, not by Cisco.

You must install the wallboard software on a separate machine or desktop, not on the Unified CCX server. During installation of your wallboard software, you must configure your wallboard software to access the Unified CCX database. To do this, you must assign a DSN, User ID, and password.

Use the Real-Time Snapshot Writing Configuration for Wallboard web page to enable the system to write data to the wallboard system.

To access the Real-Time Snapshot Writing Configuration for Wallboard web page, choose **Tools > Real Time Snapshot Config** from the Unified CCX Administration menu bar.

The following fields are displayed on the Real-Time Snapshot Writing Configuration for Wallboard web page.

| Field                            | Description                                                                                                                                                                                                                                                      |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Writing Enable              | If checked, the system writes the data to the database. If not checked, the system does not write the data to the database.<br><br>The default is disabled.                                                                                                      |
| Data Writing Interval            | Sets the refresh interval for the wallboard data. Valid options: 5, 10, 15, 20, 25, 30, 60, 90, 120, 150 and 180.                                                                                                                                                |
| Cisco Unified CCX CSQs Summary   | If checked, writes information about each CSQ to the RtCSQsSummary table in the Unified CCX database.                                                                                                                                                            |
| Cisco Unified CCX System Summary | If checked, writes overall Unified CCX system summary to the RtICDStatistics table in the Unified CCX database.                                                                                                                                                  |
| <b>Wallboard System</b>          |                                                                                                                                                                                                                                                                  |
| Server Name                      | IP addresses of the servers running the Wallboard software pointing to the HDS Database Server, which contains the Wallboard Real-Time Snapshot data. If you have multiple Wallboard servers, you can list their IP addresses in this field separated by commas. |



**Note** For details about the information written to the RtCSQsSummary and RtUnified CCXStatistics database tables, see the *Cisco Unified Contact Center Express Database Schema Guide*. Only the RtCSQsSummary and RtICDStatistics statistics tables can be used in wallboard queries. Use of historical reporting tables in wallboard queries is not supported.

See the Unified CCX Compatibility related information, located at: <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>

## Create System DSN for Wallboard

You can create a system Data Source Name (DSN) on your Windows server by performing the following procedure.

### Procedure

**Step 1** Install the wallboard software and IBM Informix ODBC Driver (IDS Version 3.0.0.13219 and above) on the wallboard client desktop.

- Note**
- You can download the Informix ODBC driver from the following URL: <http://www14.software.ibm.com/webapp/download/search.jsp?rs=ifxdl>. Download the IBM Informix Client Software Development Kit (CSDK) Version 3.00 or higher for the operating system you are installing with the wallboard client. More information about the CSDK can be found at the following URL: [http://www.ibm.com/software/data/informix/tools/csdk/..](http://www.ibm.com/software/data/informix/tools/csdk/)
  - The ODBC connections to Unified CCX do not support encryption.

**Step 2** Select **Start > Settings > Control Panel**.

**Step 3** From the Control Panel menu, select **Administrative Tools > Data Sources ODBC** to launch the ODBC Data Source Administrator.

**Step 4** Click the **System DSN** tab. Then click **Add** to open the Create New Data Source dialog box.

**Step 5** Scroll down to locate and select the IBM INFORMIX ODBC DRIVER.

**Step 6** Click **Finish** to open the IBM Informix Setup dialog box.

**Step 7** On the **General** tab, enter and apply a Data Source Name and Description.

**Step 8** On the **Connection** tab, enter the values for the fields as shown in the following table:

| Field       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server Name | <p>This is the instance name of the Informix database.</p> <p>Informix database instance name can be formed using Host Name of the Unified CCX server by following these conventions:</p> <ul style="list-style-type: none"> <li>Convert all upper case letters to lower case.</li> <li>Replace hyphens with underscore.</li> <li>Add the letter "i" as a prefix to the instance name, if the hostname starts with a number.</li> <li>Append the letters "_uccx" to the instance name.</li> </ul> <p>For example, if the hostname is "802UCCX-Ha-Node1", enter "i802uccx_ha_node1_uccx" in the Server Name field.</p> |
| Host Name   | Enter the hostname of the primary Unified CCX server.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Service     | Enter <i>1504</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Protocol    | Enter <i>onsoctcp</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| Field         | Description                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Options       | Leave blank.                                                                                                                                                                                             |
| Database Name | Enter <i>db_cra</i> .                                                                                                                                                                                    |
| User ID       | Enter <i>uccxwallboard</i> . This is the user id of the Unified CCX database created for wallboard.                                                                                                      |
| Password      | The password for the wallboard user that has been configured. You can change the password by going to <b>Tools &gt; Password Management</b> submenu option from the Unified CCX Administration menu bar. |

**Step 9** Click **Apply**.

**Step 10** Click the **Environment** tab and enter the values for the following fields:

| Field           | Description               |
|-----------------|---------------------------|
| Client Locale   | Enter <i>en_US.UTF8</i> . |
| Database Locale | Enter <i>en_US.UTF8</i> . |

**Step 11** Click **OK**.

**Step 12** Return to the **Connection** tab and click **Apply and Test Connection**.

If the phrase “Test completed successfully” is returned, click **OK**.

If the test is unsuccessful, return to the configuration sequence and fix any errors.

## Wallboard Software in High Availability (HA) Deployment

If you use wallboard software in an High Availability (HA) deployment of Unified CCX and do not want any manual intervention in case of failover, you must upgrade your wallboard software.

Upgraded wallboard software should have a new service which periodically requests Unified CCX server for database mastership information using REST API (URL - *http://<Unified CCX server IP Address>/uccx/isDBMaster*). During failover, this new service in wallboard will update DSN registry to use new database master server.

REST API can be requested only from wallboard servers configured through **Tools > Real Time Snapshot Config** web page from the Unified CCX Administration menu bar.

### Use Upgraded Wallboard Software with New Service in HA Deployment

If you use wallboard software in a High Availability (HA) deployment of Unified CCX, you must work with your wallboard vendor to use the new API exposed by Unified CCX.

Wallboard software with the new service ensures that the wallboard server always displays data from the master database server of Unified CCX and no manual intervention is required. Follow this procedure to complete the setup:

### Procedure

---

- Step 1** Create DSN using secondary server information and modify the same DSN using primary server information. This will create sqlhost entries for both the servers in a registry at *HKEY\_LOCAL\_MACHINE\SOFTWARE\Informix\SqlHosts*.
- Step 2** Configure the wallboard software with new service as described in the wallboard software documentation.
- Step 3** Configure information of both the Unified CCX servers with new service of wallboard as described in the wallboard software documentation.
- 

### What to do next

After you complete this procedure, no manual intervention is required in case of failover.

## Use Wallboard Software (without New Service) in HA Deployment

If you use the existing wallboard software without the new service in an High Availability (HA) deployment of Unified CCX, you must complete the following actions:

### Procedure

---

- Step 1** Create DSN using secondary server information and modify the same DSN using primary server information. This will create sqlhost entries for both the servers in a registry at *HKEY\_LOCAL\_MACHINE\SOFTWARE\Informix\SqlHosts*.
- Step 2** Configure the wallboard software as described in the wallboard software documentation.
- Step 3** Whenever there is a failover, you must manually change the DSN registry entry as follows:
- Enter `http://<Unified CCX server IP Address>/uccx/isDBMaster` in a web browser from any wallboard client to know whether the requested Unified CCX IP address server has a database master or not.
  - On failover, change SERVER value to master DB instance name in registry of DSN under *HKEY\_LOCAL\_MACHINE\SOFTWARE\ODBC\ODBC.INI*
  - You can find the exact database instance name at *HKEY\_LOCAL\_MACHINE\SOFTWARE\Informix\SqlHosts*
- 

## Historical Reporting Menu



### Caution

While Unified CM supports Unicode characters in first and last names, those characters become corrupted in Unified CCX Administration web pages for RmCm configuration, and Real Time Reporting.

---

Use the areas of the Historical Reporting Configuration web page to perform a variety of tasks, including configuring users, installing client software, and purging your database.

To access the different Historical Reporting Configuration options, choose **Tools > Historical Reporting** and click any of the following submenu options from the Unified CCX Administration menu bar:

- **Database Server Configuration**—to configure the database server to specify the reporting options provided to the user.
- **SMTP Configuration**—to configure the email server used to email scheduled Cisco Unified Intelligence Center (CUIC) reports.
- **Purge Schedule Configuration**—to automatically purge data as per the following configurations:
  - Timing of the purge
  - Automatic purge configuration
- **Purge Now**—to manually purge data.
- **File Restore**—to restore database records written to HR files when the database goes down.

## Database Server Configuration

Use the Database Server Configuration area to specify the maximum number of client and scheduler connections that can access the database server.

## SMTP Configuration

Use SMTP Server Settings area to configure the email server used to email scheduled Cisco Unified Intelligence Center (CUIC) reports.

The following fields are displayed in the SMTP Server Settings area:

| Field                   | Description                                                                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Host/IP Address         | The host name or IP address of the SMTP server.                                                                                                                                                                        |
| From email address      | The email address that is to appear in the From field of emails sent by the Scheduler.<br><br><b>Note</b> Unified CCX supports alphanumeric IDs and special characters (only hyphen "-", underscore "_", and dot "."). |
| Use Email Proxy         | Check this if you use a proxy server to reach your SMTP server.<br>Only HTTPS is supported as an email proxy type. SOCKS proxy is not supported.                                                                       |
| Email Proxy Hostname    | The hostname or IP address of the proxy server used to reach the SMTP server.                                                                                                                                          |
| Email Proxy Port        | The port used to connect to the SMTP proxy server.                                                                                                                                                                     |
| Use SMTP Authentication | Check this if your SMTP server expects to receive username and password credentials.                                                                                                                                   |
| SMTP Username           | If you check the Authenticate checkbox, enter the username that is to be authenticated.                                                                                                                                |
| SMTP Password           | If you check the Authenticate checkbox, enter the password that is to be authenticated.                                                                                                                                |



---

**Note** You will not be able to save the SMTP configuration if Cisco Unified Intelligence Center service on the publisher node is down.

---



---

**Note** The Unified Intelligence Center email client does not support SSL/TLS based SMTP servers to email the scheduled Unified Intelligence Center reports.

---

## Purge Schedule Configuration Option

Use the Purge Schedule Configuration area to select a user for whom you want to choose a reporting package for the Unified CCX Historical Reports system.

Choose **Tools > Historical Reporting > Purge Schedule Configuration** from the Unified CCX Administration menu bar to access the Purge Schedule Configuration web page.

The Historical Reporting Configuration web page opens, enabling you to configure the following:

- Daily purge schedule
- Automatic purge (you can specify how long records should persist before the system purges them)

## Purge Now Option

Use the Purge Now area to manually purge data.

Choose **Tools > Historical Reporting > Purge Now** from the Unified CCX Administration menu bar to access the Purge Now area.

## File Restore Option

Use the File Restore area to restore the database records written to HR files when the database goes down.

In case of an High Availability setup, files from both the nodes are restored to the HR Database of the first and second node respectively. If it is unable to connect to the second node, you will see an alert message stating that the remote node is not reachable. When the second node comes up, the restored data will be replicated but you must repeat this Restore operation to restore the HR files, if any, on the second node.

### Procedure

---

**Step 1** Choose **Tools > Historical Reporting > File Restore** from the Unified CCX Administration menu bar to access the Historical Reporting Configuration web page.

**Note** **Restore Now** radio button is enabled by default on this page.

**Step 2** Click the **Start** icon that displays in the toolbar in the upper left corner of the window or the **Start** button that displays at the bottom of the window to restore the database records.

You can view the status of the restore operation on this page.

---

## User Management Menu

The User Management menu option allows you to assign access levels to Unified CCX system administrators and supervisors.

When you configure a Unified CCX supervisor, you are configuring users who can access the Unified CCX Supervisor web pages. You are not creating a supervisor for Unified CCX.

**Note**

Only administrators can update the Unified CCX system. You must select at least one administrator, so that someone is available to perform updates.

---

**Attention**

Do not edit users, teams and permissions in Unified Intelligence Center. The Unified CCX to Unified Intelligence Center sync runs as part of daily purge and synchronizes these settings on Unified Intelligence Center according to Unified CCX settings.

---

### Procedure

---

Choose **Tools > User Management** and click any of the following submenu options from the Unified CCX Administration menu bar to assign administrative privileges to administrators and supervisors:

- [User Configuration, on page 309](#)
  - [Name Grammar Generator Configuration, on page 310](#)
  - [Spoken Name Upload Submenu, on page 311](#)
  - [Administrator Capability View Menu, on page 311](#)
  - [Supervisor Capability View Menu, on page 311](#)
  - [Reporting Capability View Menu, on page 312](#)
  - [Agent Capability View Menu, on page 312](#)
- 

## User Configuration

From the Unified CCX Administration menu bar, choose **Tools > User Management > User View** to access the User Configuration web page.

Use this page to view existing users and assign administrative privileges to administrators and supervisors. You can provide a search string based on a user ID; for example, if you provide the search string as

- “\*Agent1”, it will display user IDs ending with Agent1
- “Agent1\*”, it will display user IDs starting with Agent1
- “Agent1”, it will display user IDs that contain Agent1.

All the columns are hyperlinked to the user configuration page.



**Note** This search bar will search the users only by last name or user ID. Do not use the first name for searching.

## Name Grammar Generator Configuration

Use the Name Grammar Generator Configuration web page to define scheduling information for the Name Grammar Generator.

From the Unified CCX Administration menu bar, choose **Tools > User Management > Name Grammar Generator Configuration** to access Name Grammar Generator Configuration area.

Name Grammars must be generated if you wish to use the Name to User Step with ASR. The Name Grammar Generator scans the User Directory and creates a speech recognition grammar containing every user in the directory. These grammars are saved in the grammar repository.

You may use the Name Grammar Generator Configuration page to run the Name Grammar Generator or schedule it to run at some later time. The page also displays the date and time that the Name Grammar Generator was last run and the completion status of that run.

The following fields are displayed on the Name Grammar Generator web page.

| Field                     | Description                                                                                                                                                                                                  |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency                 | How often Name Grammar Generator is automatically run. Valid options: Never, Daily, and Weekly. This is a mandatory field.                                                                                   |
| Run task on (hrs of day)  | Time of day to run the task. This is a mandatory field.                                                                                                                                                      |
| Run task on (day of week) | Day of week to run the task. This is a mandatory field.                                                                                                                                                      |
| Last Completed on         | Date of last generation of name grammar.                                                                                                                                                                     |
| Last Completion Result    | The status after the last name grammar generation. (Display only.)                                                                                                                                           |
| Grammar Variant           | Select one or more grammar variants to generate from the check box next to the following three options: <ul style="list-style-type: none"> <li>• OSR 3.1.x</li> <li>• 2003 SISR</li> <li>• Nuance</li> </ul> |
| Current Status            | Running status of the Name Grammar Generator. (Display only.)                                                                                                                                                |

Click the **Generate Name Grammar Now** icon or button to trigger the Name Grammar Generator.



---

**Note** Clicking **Generate Name Grammar Now** will not apply changes to the scheduling configuration; you must click **Update** to apply scheduling changes.

---

## Spoken Name Upload Submenu

When a caller requests to be transferred to a specific extension, Unified CCX applications can playback a recording of the spoken name of the person to whom the caller has called. These spoken name recordings are stored as .wav files and managed by the Spoken Name Upload tool of the Unified CCX Administration web interface.

To access the Spoken Name Prompt Upload web page, choose **Tools > User Management > Spoken Name Upload** from the Unified CCX Administration menu bar.

The Spoken Name Prompt Upload web page also contains the **Click Here for Recording Information** icon and button, which displays a .htm page in your browser with more information on recording spoken name prompts.

## Administrator Capability View Menu

From the Unified CCX Administration menu bar, choose **Tools > User Management > Administrator Capability View** to access the capability view for the Administrator User Management area.

This web page contains a pane for users identified as Unified CCX Administrator and another pane with the list of Available Users. Based on your requirements, you can move users back and forth between these two panes by clicking the arrows in either direction. Click **Update** to save the changes.



---

**Note**

- You cannot assign Administrator capability to a user ID that is the same as the application administrator user ID created during the Unified CCX installation. If you assign Administrator capability to such a user ID, an error appears.

---

## Supervisor Capability View Menu

From the Unified CCX Administration menu bar, choose **Tools > User Management > Supervisor Capability View** to access the capability view for the Supervisor User Management area.

This web page contains a pane for users identified as the Unified CCX Supervisor and another pane with the list of Available Users. Based on your requirements, you can move users back and forth between these two panes by clicking the arrows in either direction.



---

**Note** For a supervisor to access Unified Intelligence Center Live Data reports, an extension should be assigned to the supervisor.

---



**Note** You cannot assign Supervisor capability to a user ID that is the same as the application administrator user ID created during the Unified CCX installation. If you assign Supervisor capability to such a user ID, an error appears.

## Reporting Capability View Menu

From the Unified CCX Administration menu bar, choose **Tools > User Management > Reporting Capability View** to access the capability view for the Historical Report Users area.

The capability view for the Reporting Management web page contains a pane for users identified as Unified CCX Historical Report Users and another pane with the list of Available Users. Based on your requirements, you can move users back and forth between these two panes by clicking the arrows in either direction.



**Note** You cannot assign Reporting capability to a user ID that is the same as the application administrator user ID created during the Unified CCX installation. If you assign Reporting capability to such a user ID, an error appears.

The following users can access Unified Intelligence Center:

| Roles                     | Access                                                     | Available reports                                                                                   |
|---------------------------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Application administrator | Super user                                                 | <ul style="list-style-type: none"> <li>• Historical reports</li> <li>• Live Data reports</li> </ul> |
| Reporting user            | Unified CCX administrator must assign this role to a user. | <ul style="list-style-type: none"> <li>• Historical reports</li> <li>• Live Data reports</li> </ul> |
| Supervisor                | Unified CCX administrator must assign this role to a user. | Live Data reports                                                                                   |
| Agent                     | Unified CCX administrator must assign this role to a user. | Agent-specific Live Data reports                                                                    |

## Agent Capability View Menu

From the Unified CCX Administration menu bar, choose **Tools > User Management > Agent Capability View** to access the capability view for Unified CCX agents.

The capability view for the Agent User Management web page contains a pane for users identified as Unified CCX Agents and another pane with the list of Available Users. Based on your requirements, you can move users back and forth between these two panes by clicking the arrows in either direction.



# Password Management

From the Unified CCX Administration menu bar, choose **Tools > Password Management** to access the password management web page.

You can set or reset the passwords for the following external database users using this web page:

| User                                                                       | Username      | Description                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wallboard                                                                  | uccxwallboard | This user can connect to Configuration and Historical databases and has read-only access to RtICDStatistics and RtCSQsSummary tables.                                                                                                                                                                                |
| Recording SFTP                                                             | uccxrecording |                                                                                                                                                                                                                                                                                                                      |
| Workforce Management                                                       | uccxworkforce |                                                                                                                                                                                                                                                                                                                      |
| Historical Reporting                                                       | uccxhruser    | This user can connect to Configuration, Historical, and Repository databases and has the following privileges: <ul style="list-style-type: none"> <li>• read-only access to Historical, Configuration, and Repository tables</li> <li>• execute stored procedures</li> <li>• create new stored procedures</li> </ul> |
| System Call Tracking (part of Real Time Monitoring Tool/ Analysis Manager) | uccxsct       |                                                                                                                                                                                                                                                                                                                      |

Click **Save** icon that displays in the toolbar in the upper left corner of the window or the **Save** button that displays at the bottom of the window. An error message appears if the old and new passwords are same for any of the users.

To remove the data entered and to retain the existing passwords, click the **Clear** button.



## Note

- The maximum length of the password entered is limited to 80 characters.
- A new password cannot be one of the last five passwords used.
- There is no default password set. You must manually reset it for the first time.

In case of a High Availability deployment, the password change will not be propagated to the second node. You must access the Administration web interface of the second node manually to change the password. In an HA setup, you can see **Check Consistency** icon or button in the Password Management page. Use this button to check and confirm whether the passwords between the two nodes match or not. You can see the status of the password check in the Password Management page.





## CHAPTER 20

# Help Menu

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The Help Menu of the Unified CCX Administration web interface provides access to online help for the Unified CCX system.

Use the Help menu to access configuration procedures and descriptions of Unified CCX components.

The Help menu contains the following menu options:

- **Contents and Index**—Choose this option to view the entire Unified CCX Administrator Guide online help system and index.
- **For this page**—Choose this option to view context-sensitive help.
- **Unified CCX Documentation on Cisco.com**—Choose this option to view the documentation index page.
- **About**—Choose this option to view Unified CCX version information.

The following sections describe the Help menu options.

- [Contents and Index, on page 315](#)
- [For This Page Menu, on page 316](#)
- [Troubleshooting Tips Menu, on page 316](#)
- [Unified CCX Documentation Link, on page 316](#)
- [About Menu, on page 317](#)

## Contents and Index

To view the entire Unified CCX Administration Guide online help system and index, choose **Help > Contents and Index** from the Unified CCX Administration menu bar. The Unified CCX Administration Guide Online Help window opens.

When you click any topic in the top pane, the section of the online help that corresponds to that topic appears in the bottom pane.

The following table describes the menu options in the Unified CCX Administration Guide Online Help window.

| Menu Option | Description                       |
|-------------|-----------------------------------|
| Back        | Returns you to the previous page. |

| Menu Option        | Description                                                                                                                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forward            | Leads you to the next page.                                                                                                                                                                                                          |
| -                  | -                                                                                                                                                                                                                                    |
| Print              | Prints the help document.                                                                                                                                                                                                            |
| View PDF           | Opens a PDF version of the Cisco Unified CCX Administration Guide.                                                                                                                                                                   |
| Contents and Index | Displays the index and contents of the Unified CCX Administrator Guide online help files in a separate web page. The index is displayed in the left pane while the contents are displayed in the right pane in the online help page. |

## For This Page Menu

To access context-sensitive help, open the web page for which you want help and choose **Help > For This Page** from the Unified CCX Administration menu bar. The Unified CCX Administration online help displays information that is specific to the open web page.

## Troubleshooting Tips Menu

The Unified CCX system provides the Troubleshooting Tips tool as a way for you to search the troubleshooting wiki page for suggestions on how to solve problems that may arise in the performance of your Unified CCX system.




---

**Note** For more information, see the Troubleshooting Wiki page:  
[http://docwiki.cisco.com/wiki/Troubleshooting\\_Unified\\_Contact\\_Center\\_Express](http://docwiki.cisco.com/wiki/Troubleshooting_Unified_Contact_Center_Express).

---

To access the Troubleshooting Tips wiki page, choose **Help > Troubleshooting Tips** from the Unified CCX Serviceability Administration menu bar.

## Unified CCX Documentation Link

To access the complete Unified CCX documentation set for Unified CCX, and Unified IP IVR, choose **Help > Cisco Unified CCX Documentation on Cisco.com** from the Unified CCX Administration menu bar. A new browser window opens to display the following documentation index page:  
[https://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd\\_products\\_support\\_series\\_home.html](https://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd_products_support_series_home.html).

# About Menu

To access Unified CCX version information, choose **Help > About** from the Unified CCX Administration menu bar. The Unified CCX Administration web page opens, displaying version information and package information.





## CHAPTER 21

# Cisco Mobile Skill Manager

The Unified CCX supervisor can use the Cisco Mobile Skill Manager on a smart phone to remotely manage the skill data of all associated agents. This application is not a native one and can run on smart phone browsers.

The devices with the following operating systems are supported:

- For Apple devices using iOS - 5.x and above with Safari browser
- For Android devices - 2.x and above with default browser

The following sections provide procedures to allow you to access Cisco Mobile Skill Manager, such as modify the team; add and delete new skills, add, delete and update skills of agents; and view skills and agents.

- [Access Mobile Skill Manager, on page 319](#)
- [Adding Skills Using Cisco Mobile Skill Manager, on page 320](#)
- [Searching Skills Using Cisco Mobile Skill Manager, on page 320](#)
- [View Details of Resources Assigned to Supervisor, on page 321](#)
- [View Resources Assigned to Supervisor, on page 321](#)
- [Search Resources Using Cisco Mobile Skill Manager, on page 321](#)
- [Modify Resource Team, on page 322](#)
- [Assign Skill Competency to Resource, on page 322](#)
- [Unassign Skill Competency of Resource, on page 323](#)

## Access Mobile Skill Manager

### Pre-requisites

Cisco Mobile Skill Manager allows you as the supervisor to manage the skill data associated with an agent. You can also modify the agent team, and add and delete new skills. Before you access the Cisco Mobile Skill Manager, make sure

- the supervisor capability is assigned to you. To know more on supervisor options, see sections Supervisor Privileges and User View submenu option, in this guide.
- Cisco Tomcat and Cisco Unified Cluster View Daemon services are up and running.

Follow the steps below to login to Cisco Mobile Skill Manager from your smart phone:

1. Open Cisco Mobile Skill Manager home page from your mobile smart phone browser and enter the following case-sensitive URL: **https://<ipaddress>/mobileskillmanager**

In this example, replace <ipaddress> with the IP address of the required Unified CCX server.

2. In the Security Alert dialog box that displays, click the appropriate button.
3. In the Cisco Mobile Skill Manager authentication page, enter the supervisor credentials, and click **Sign In**.

A window with the Resources and Skills links is displayed.

- **Resources:** This link is used to access the Resources page. This page displays the resources assigned to you.
  - **Skills:** This link is used to access the Skills page. You can add a new skill or delete an existing skill from this page.
4. Select either depending on what you want to do. Individual tasks related to these two choices are provided separately.

## Adding Skills Using Cisco Mobile Skill Manager

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
  - Step 2** Click **Skills**.
  - Step 3** In the Skills page, enter the name of the skill in the edit box and click the **Add** button.  
A dialog box confirming the successful addition of skill is displayed.
  - Step 4** Click **OK**.  
The dialog box closes and the Skills page refreshes to display the updated list of skills.
- 

## Searching Skills Using Cisco Mobile Skill Manager

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
  - Step 2** Click **Skills**.
  - Step 3** In the Skills page, enter the skill to be searched in the search filter box.
  - Step 4** If the skill exists, the same will be displayed.
-



## View Details of Resources Assigned to Supervisor

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
- Step 2** Click **Resources**.
- The Resources page launches to display all resources assigned to the supervisor.
- Step 3** Click the selected resource name. The Resource details page launches and lists the following details of the selected resource.

| Field          | Description                                                                                 |
|----------------|---------------------------------------------------------------------------------------------|
| Full Name      | Displays the full name of the resource.                                                     |
| User Id        | Displays the user id of the resource.                                                       |
| IPCC Extension | Displays the IPCC extension of the resource.                                                |
| Team           | Link to launch the Teams page which displays the team to which the resource is assigned.    |
| Skills         | Link to launch the Assigned skills page which displays the skills assigned to the resource. |

---

## View Resources Assigned to Supervisor

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
- Step 2** Click **Resources**.
- The Resources page launches to display all resources assigned to the supervisor.
- 

## Search Resources Using Cisco Mobile Skill Manager

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.

- Step 2** Click **Resources**.
- Step 3** In the Resources page, enter the name of the agent, that you want to search, in the Search box.  
The agent information is displayed.
- 

## Modify Resource Team

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
- Step 2** Click **Resources**.  
The Resource page launches and all resources assigned to the supervisor are displayed.
- Step 3** Click the resource name to launch the Resource details page.
- Step 4** In the Resource details page, click **Teams**.  
The Teams page launches to display all the teams configured in the Cisco CCX system.
- Step 5** Click the team name, then in the confirmation box click **OK**.  
A window displays the successful modification of the team.
- Step 6** To return back to the Agents Details page, click **OK**.
- 

## Assign Skill Competency to Resource

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
- Step 2** Click **Resources**.  
The Resource page displays all the resources assigned to the supervisor.
- Step 3** Click the resource name to display the Resource details window.
- Step 4** Click **Skill**.  
All skills configured in Unified CCX are displayed.
- Step 5** To set the competency level for a particular skill, select the value from the drop down list displayed against each skill.
- Step 6** Click the **Update** button located at the top of the window.  
A dialog box displays the successful assignment of a skill to a resource.

- Step 7** Click **OK** to be redirected to the Resources Details page.
- 

## Unassign Skill Competency of Resource

### Procedure

---

- Step 1** Login to Cisco Mobile Skill Manager using supervisor credentials.
- Step 2** Click **Resources**.
- Example:**  
The Resources page launches displaying names of all resources assigned to the supervisor.
- Step 3** Click on a resource name to launch the Resources details page.
- Step 4** Click **Skills**.  
The skills page with all skills configured in Unified CCX is displayed.
- Step 5** To unassign the competency level for a particular skill, select the value **NA** from the drop-down list for that resource.
- Step 6** Click the **Update** button that displays at the top of the window.  
**Example:**  
A dialog box shows the success of the task, that is unassigning a skill.
- Step 7** Click **OK** to return to the Resource Details page.
-





## CHAPTER 22

# Cisco Finesse

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- [Introduction, on page 325](#)
- [Cisco Finesse Administration Console, on page 325](#)
- [Cisco Finesse Agent and Supervisor Desktop , on page 393](#)
- [Call Manager-Based Call Recording Using Cisco MediaSense, on page 393](#)

## Introduction

Cisco Finesse is a next-generation agent and supervisor desktop designed to provide a collaborative experience for the various communities that interact with your customer service organization. It helps improve the customer experience while offering a user-centric design to enhance customer care representative satisfaction as well.

Cisco Finesse provides:

- A browser-based administration console and a browser-based desktop for agents and supervisors; no client-side installations required.
- A single, customizable "cockpit", or interface, that gives customer care providers quick and easy access to multiple assets and information sources.
- REST APIs that simplify the development and integration of value-added applications and minimize the need for detailed desktop development expertise.

Finesse configuration changes are permitted on only the primary server. Access to Finesse administration console on the secondary server is read-only.

When you attempt to save the changes in Finesse administration console on the secondary node, you receive a message that administration on the secondary node is read-only.

## Cisco Finesse Administration Console

### Getting Started

This chapter describes the interfaces that you use to configure, administer, and maintain Cisco Finesse and describes how to access them.

## Administration Tools

### Cisco Finesse Administration Console

The Cisco Finesse administration console is a web-based interface used to configure system settings in Cisco Finesse. The administration console contains tabs that you click to access the various administration features. The tab names and the tasks that you can perform on each tab are as follows:

- **Settings:** IP Phone Agent Settings.
- **Call Variables Layout:** Manage the call variables and ECC variables that appear on the agent desktop call control gadget.
- **Desktop Layout:** Make changes to the default desktop layout for agents and supervisors.
- **Phone Books:** Add, edit, or delete phone books or phone book contacts.
- **Reasons:** Add, edit, or delete Not Ready reason codes, Sign Out reason codes, or Wrap-Up reasons.
- **Team Resources:** Assign desktop layouts, phone books, reason codes, and wrap-up reasons to specific teams.
- **Workflows:** Create and manage workflows and workflow actions.

The features you configure in the administration console are case-sensitive. For example, you can create two workflows named WORKFLOW and workflow or two phone books named BOOK and book.

#### *Sign In to Cisco Finesse Administration Console*

You can access the Cisco Finesse administration console only through HTTPS.

When you sign in to Finesse, always use the fully qualified domain name (FQDN) of the Finesse server in the URL, not the server IP address or hostname.

#### **Procedure**

- 
- Step 1** Direct your browser to `https://FQDN:8445/cfadmin`, where *FQDN* is the fully qualified domain name of your primary server.
  - Step 2** On the Sign-In page, in the ID field, enter the Application User ID that was established during the installation.
  - Step 3** In the Password field, enter the Application User password that was established during the installation.
  - Step 4** Click **Sign In**.

A successful sign-in launches an interface with defined administration gadgets and a Sign Out link.

---

#### *Account Locked After Five Failed Sign In Attempts*

If an administrator tries to sign in to the Finesse administrator console (or diagnostic portal) with the wrong password five times in a row, Finesse blocks access to that user account for a period up to 30 minutes. For security reasons, Finesse does not alert the user that their account is locked. They must wait 30 minutes and try again.

Similarly, if agents or supervisors sign in to the desktop five times in a row with the wrong password, Finesse blocks access to that user account. However, in this case, the lockout period is only 5 minutes. This restriction also applies when agents and supervisors sign in using the mobile agent or Finesse IP Phone Agent (IPPA).



**Note** When an agent or supervisor account is locked, subsequent attempts to sign in, even with correct credentials, reset the lockout period to 5 minutes again. For example, if a locked user tries to sign in again after only 4 minutes, the lockout period is reset and the user must wait another 5 minutes. This reset does not apply to the administrator account.

To view whether a user account is locked, enter the following CLI command:

**file get activelog desktop recurs compress**

Then extract the zipped output, and search the catalina.out logs (/opt/cisco/desktop/finesse/logs/catalina.out) for the following message referring to the locked username:

```
An attempt was made to authenticate the locked user "<username>"
```

## Manage System Settings



**Note** For information about Finesse IP Phone Agent Settings, see **Manage Finesse IP Phone Agent**.

## Manage Call Variables Layouts

### Call Variables Layouts

You can use the Call Variables Layouts gadget to define how call variables appear on the Finesse agent desktop. You can configure up to 200 unique Call Variables Layouts (one default layout and 199 custom layouts). As part of this functionality:

- Each layout has a name (required) and description (optional).
- After an upgrade from a release earlier than Cisco Finesse Release 11.0, Finesse migrates the previously configured default layout and assigns it the default name (Default Layout) and description (Layout used when no other layout matches the user layout Custom/ECC Variable).
- You can change the name and description of the default Call Variables Layout.
- You cannot delete the default Call Variables Layout.
- Finesse appends (*Default*) to the name of the default Call Variables Layout.
- To display a custom Call Variables Layout, in the Unified CCX routing script set the user.layout ECC variable to the name of a configured Call Variables Layout. In this case, if no custom layouts match the user.layout value (or no custom layouts are configured), Finesse displays the default layout.
- Finesse retains the custom layout as specified by the user.Layout ECC variable on CTI server failover. During PG failover, Finesse changes the active call layout to the default layout while retaining the call variables and time indicators.

## Call Variables

Each Call Variables Layout supports one variable in the header of the call control gadget and up to a total of 20 variables in two columns below the header (up to 10 in each column). You can use call variables, Extended Call Context (ECC) variables, or the following Outbound Option ECC variables.

- BACampaign
- BAAccountNumber
- BAResponse
- BAStatus
- BADialedListID
- BATimeZone
- BABuddyName
- BACustomerNumber

Columns can be empty.

To enable Outbound Option data to appear in Cisco Finesse, the administrator must edit the Default layout to include some or all Outbound Option variables.

## Configure Call Variables Layouts

### Procedure

---

- Step 1** From the Manage Call Variables Layouts gadget:
- To create a new Call Variables Layout, click **New**.
  - To modify an existing Call Variables Layout, choose a layout from the list, and click **Edit** (or click **Delete** to remove it).
- Step 2** Under Create New Layout (or under Edit <layout name> when editing an existing layout):
- Enter a name for the Call Variables Layout (maximum 40 characters).
  - Enter a description of the Call Variables Layout (maximum 128 characters).



The screenshot shows the 'Manage Call Variables Layouts' interface. At the top, there is a table titled 'List of Call Variables Layouts' with two columns: 'Name' and 'Description'. The table contains one entry: 'Default Layout (Default)' with the description 'Layout used when no other layout matches the user layout Custom/ECC Variable'. Below the table is a 'Create New Layout' section. It includes a 'Name' field with the value 'Custom' and a 'Description' field with the value 'Custom Layout'. Under 'Call Header Layout', there is a field for 'Account Number' with a dropdown menu showing 'callVariable1'. Under 'Call Body Left-Hand Column Layout', there is a field for 'Display Name' with a dropdown menu showing 'callVariable1' and a red 'X' icon. Under 'Call Body Right-Hand Column Layout', the text '[None Configured]' is displayed. There are 'Add Row' buttons for each of the layout sections, and 'Save' and 'Cancel' buttons at the bottom.

**Step 3** Under Call Header Layout:

- Enter the display name that you want to appear in the header of the Call Control gadget on the Finesse desktop, for example, Customer Name (maximum 50 characters).
- From the drop-down list, choose the call variable or Outbound Option ECC variable that you want to appear in the header, for example, callVariable3 (maximum 32 characters).

**Step 4** In the Call Body Left-Hand Layout and Call Body Right-Hand Layout areas:

- Click **Add Row** to add a new row (or click the “X” to delete a row).
- For each row:
  - Enter the display name that you want to appear on the desktop, for example, Customer Name (maximum 50 characters).
  - Enter the corresponding call variable or Outbound Option ECC variable from the drop-down list (maximum 32 characters).

**Step 5** Click **Save** to save the changes, or **Cancel** to discard the changes.

**Note** When you modify the Call Variables Layout of the agent desktop, the changes you make take effect after three seconds. However, agents who are signed in when the changes are made must sign out and sign back in to see those changes reflected on their desktops.

**Step 6** To view the latest configured Call Variables Layout, click **Refresh** from the Manage Call Variables Layouts gadget.

## Add ECC Variables to Call Variables Layout



**Note** Cisco Finesse only supports Latin1 characters for ECC variables. Other Unicode characters are not supported. For example, if you add an ECC variable that contains Chinese characters to the call variable layout, it may not appear correctly on the agent desktop.

### Procedure

**Step 1** In the header or the row where you want the ECC variable to appear, from the Variable drop-down list, choose **Custom**.

The Custom/ECC Variable Entry dialog box appears.

**Step 2** In the Custom/ECC Variable Name field, enter the name of the ECC variable you want to appear on the agent desktop.

**Step 3** Click **Set**.

The ECC variable now appears in the Variable drop-down list for selection.

## Assign Call Variables Layouts

### Procedure

**Step 1** In the CCX Editor's Expanded Call Variables tab, create an ECC variable called **user.layout** in the Set Enterprise Call Info Step used in the CCX routing script.

**Note** If both a user.layout and a user.Layout are specified, Finesse will prioritize user.layout over user.Layout. If the layout specified in the user.Layout or user.layout is not found, Finesse will use the Default layout.

- Step 2** Set the value of user.layout to the name of the call variables layout that should be used. The layout name should match the name of a call variables layout that was created on the Call Variables Layout tab in Finesse Administration.
- 

## Manipulate Call Variables Layouts with a Workflow

You can manipulate the call variables layout that an agent sees when a call is answered by using a workflow. To do so, configure an HTTP Request workflow action and set the value of the ECC variable user.layout to the name of the custom layout to display.

For information about how and when workflows are executed, see **Workflows and Workflow Actions**.

For more details, see the section, "Adding an HTTP Request Workflow Action" in the white paper *Cisco Finesse: How to Create a Screen-Pop Workflow*.

## Manage Desktop Layout

You can define the layout of the Finesse desktop on the Desktop Layout tab.



### Important

Requirements, such as processor speed and RAM, for clients that access the Finesse desktop can vary. Desktops that receive events for more than one agent (such as agent and supervisor desktops running Live Data reports that contain information about other agents and skill groups) require more processing power than desktops that receive events for a single agent.

Factors that determine how much power is required for the client include, but are not limited to, the following:

- Contact center traffic
  - Additional integrated gadgets in the desktop (such as Live Data reports or third-party gadgets)
  - Other applications that run on the client and share resources with the Finesse desktop
- 

## Finesse Desktop Layout XML

The Finesse Layout XML defines the layout of the Finesse desktop, including tab names and the gadgets that appear on each tab.

Use the Manage Desktop Layout gadget to upload an XML layout file to define the layout of the Finesse desktop for agents and supervisors.

### Actions on the Manage Desktop Layout gadget:

- **Finesse Default Layout XML:** Expands to show the layout XML for the default Finesse desktop.
- **Restore Default Layout:** Restores the Finesse desktop to the default layout.
- **Save:** Saves your configuration changes.
- **Revert:** Retrieves and applies the most recently saved desktop layout.

## Default Layout XML

The Finesse default desktop layout XML for Unified CCX contains optional tabs and gadgets for MediaSense, Web Chat and Email, and notes that describe how to modify the layout for your deployment type.

Remove the comments from the optional gadgets and tabs that you want to appear on the Finesse desktop.

Remove any gadgets or tabs that you do not want to use.



**Note** Line breaks and spaces that appear in the following text are provided only for readability and must not be included in the actual code.

```
<finesseLayout xmlns="http://www.cisco.com/vtg/finesse">
 <layout>
 <role>Agent</role>
 <page>
 <gadget>/desktop/gadgets/CallControl.jsp</gadget>
 <!--
 The following Gadget is used for WebChat and Email. It is *ONLY* supported with
 WebChat and Email. If you are not using WebChat and Email, then remove it. If you
 are using WebChat or Email, include this Gadget in the Desktop Layouts used by
 Teams associated with chat and email CSQs. To include this functionality:
 1) Remove these comments leaving the gadget

 RESTRICTIONS:
 - The NonVoiceControl gadget must be configured as a page level gadget
 - The NonVoiceControl gadget must not be configured in a column

 -->
 <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
 -->
 </page>
 <tabs>
 <tab>
 <id>home</id>
 <label>finesse.container.tabs.agent.homeLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=310&
 viewId=76D964AD10000140000000830A4E5E6F&
 filterId=AgentCSQStats.csqName=CL&compositeFilterId=
 AgentCSQStats.AgentIds.agentId=loginId</gadget>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=310&
 viewId=5C626F9C10000140000000600A4E5B33&
 filterId=ResourceIAQStats.resourceId=CL</gadget>
 </gadgets>
 </column>
 </columns>
 </tab>
 <tab>
 <id>myStatistics</id>
 <label>finesse.container.tabs.agent.myStatisticsLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=150&
 viewId=67D4371110000140000001080A4E5E6B&
```

```

 filterId=ResourceIAQStats.resourceId=loginId</gadget>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=420&
 viewId=5D411E8A10000140000000230A4E5E6B&
 filterId=AgentStateDetailStats.agentID=loginId</gadget>
 </gadgets>
</column>
</columns>
</tab>
<!--
The following Tab and Gadget are used for WebChat and Email. They are *ONLY*
supported with WebChat and Email. If you are not using WebChat or Email, then remove
them. If you are using WebChat or Email, include this Gadget in the Desktop Layouts
used by Teams associated with chat or email CSQs. To include this functionality:
 1) Remove these comments leaving the tab and gadget
 2) Replace all instances of "my-socialminer-server" with the Fully Qualified
 Domain Name of your SocialMiner Server.
 3) [OPTIONAL] Adjust the height of the gadget by changing the "gadgetHeight"
 parameter.

IMPORTANT NOTE:
 - In order for this Gadget to work, you must have performed all documented
 prerequisite steps.

RESTRICTIONS:
 - The multisession-reply-gadget must not be configured as a page level gadget
 - The multisession-reply-gadget must not be configured in a column

 <tab>
 <id>manageNonVoiceMedia</id>
 <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://my-socialminer-server/multisession/ui/
 gadgets/multisession-reply-gadget.jsp?gadgetHeight=430
 </gadget>
 </gadgets>
 </column>
 </columns>
 </tab>
-->
</tabs>
</layout>
<layout>
 <role>Supervisor</role>
 <page>
 <gadget>/desktop/gadgets/CallControl.jsp</gadget>
<!--
The following Gadget is used for WebChat and Email. It is *ONLY* supported with
WebChat and Email. If you are not using WebChat and Email, then remove it. If
you are using WebChat or Email, include this Gadget in the Desktop Layouts used
by Teams associated with chat or email CSQs. To include this functionality:
 1) Remove these comments leaving the gadget

RESTRICTIONS:
 - The NonVoiceControl gadget must be configured as a page level gadget
 - The NonVoiceControl gadget must not be configured in a column

 <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
-->
</page>

```

```

<tabs>
 <tab>
 <id>manageTeam</id>
 <label>finesse.container.tabs.supervisor.manageTeamLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>/desktop/gadgets/TeamPerformance.jsp</gadget>
 </gadgets>
 </column>
 </columns>
 </tab>
 <tab>
 <id>teamData</id>
 <label>finesse.container.tabs.supervisor.teamDataLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=620&
 viewId_1=7291DCB410000140000000890A4E5B33&
 filterId_1=ResourceIAQStats.resourceId=CL&
 viewId_2=728283C210000140000000530A4E5B33&
 filterId_2=ResourceIAQStats.resourceId=CL</gadget>
 </gadgets>
 </column>
 </columns>
 </tab>
 <!--
 The following Gadget is used for WebChat. It is *ONLY* supported with WebChat. If
 you are not using WebChat, then remove it. If you are using WebChat, include this
 Gadget in the Desktop Layouts used by Teams associated with chat CSQs. To include
 this functionality:
 1) Remove these comments leaving the gadget

 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=310&
 viewId=F2F1FC17100001440000014E0A4E5D48&
 filterId=ChatAgentStats.agentId=CL</gadget>
 -->
 <!--
 The following Gadgets are used for Predictive/Progressive/Preview Agent Outbound.
 To include this functionality:
 1) Remove these comments leaving the gadget

 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=310&
 viewId=FD919FB9100001440000005D0A4E5B29&
 filterId=ResourceIAQStats.resourceId=CL</gadget>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=310&
 viewId=FD919FB510000144000000470A4E5B29&
 filterId=ResourceIAQStats.resourceId=CL</gadget>
 -->
 </gadgets>
 </column>
</columns>
</tab>
<tab>
 <id>queueData</id>
 <label>finesse.container.tabs.supervisor.queueDataLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://localhost:8444/cuic/gadget/
 LiveData/LiveDataGadget.jsp?gadgetHeight=620&
 viewId_1=C8E2DB1610000140000000A60A4E5E6B&
 filterId_1=VoiceIAQStats.esdName=CL&
 </gadget>
 </gadgets>
 </column>
 </columns>
</tab>

```

```

 viewId_2=9A7A14CE10000140000000ED0A4E5E6B&
 filterId_2=VoiceCSQDetailsStats.agentId=CL&
 compositeFilterId=VoiceCSQDetailsStats.
 AgentVoiceCSQNames.agentVoiceCSQName=CL&
 viewId_3=C8EF510810000140000000EB0A4E5E6B&
 filterId_3=VoiceIAQStats.esdName=CL&
 viewId_4=C8EE241910000140000000C30A4E5E6B&
 filterId_4=VoiceIAQStats.esdName=CL</gadget>
<!--
 The following Gadget is used for WebChat. It is *ONLY* supported with WebChat. If
 you are not using WebChat, then remove it. If you are using WebChat, include this
 Gadget in the Desktop Layouts used by Teams associated with chat CSQs. To include
 this functionality:
 1) Remove these comments leaving the gadget

 <gadget>https://localhost:8444/cuic/gadget/LiveData/
 LiveDataGadget.jsp?gadgetHeight=310&
 viewId=E42ED788100001440000007B0A4E5CA1&
 filterId=ChatQueueStatistics.queueName=CL</gadget>
-->
 </gadgets>
 </column>
</columns>
</tab>

<!--
 The following Tab and Gadget are used for WebChat and Email. They are *ONLY*
 supported with WebChat and Email. If you are not using WebChat or Email, then remove
 them. If you are using WebChat or Email, include this Gadget in the Desktop Layouts
 used by Teams associated with chat or email CSQs. To include this functionality:
 1) Remove these comments leaving the tab and gadget
 2) Replace all instances of "my-socialminer-server" with the Fully Qualified
 Domain Name of your SocialMiner Server.
 3) [OPTIONAL] Adjust the height of the gadget by changing the "gadgetHeight"
 parameter.

 IMPORTANT NOTE:
 - In order for this Gadget to work, you must have performed all documented
 prerequisite steps.

 RESTRICTIONS:
 - The multisession-reply-gadget must not be configured as a page level gadget
 - The multisession-reply-gadget must not be configured in a column

 <tab>
 <id>manageNonVoiceMedia</id>
 <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://my-socialminer-server/multisession/ui/
 gadgets/multisession-reply-gadget.jsp?gadgetHeight=430
 </gadget>
 </gadgets>
 </column>
 </columns>
 </tab>
-->
<!--
 The following Tab and Gadget are for MediaSense. They are *ONLY* supported with
 MediaSense. If you are not using MediaSense, then remove them. If you are using
 MediaSense and wish to show Recording Management, then do the following:
 1) Remove these comments leaving the tab and gadget

```

- 2) Replace all instances of "my-mediasense-server" with the Fully Qualified Domain Name of your MediaSense Server.

**IMPORTANT NOTE:**

- In order for this Gadget to work, you must have performed all documented prerequisite steps.

```

<tab>
 <id>manageRecordings</id>
 <label>finesse.container.tabs.supervisor.manageRecordingsLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://my-mediasense-server:8440/ora/gadget/
 MediaSenseGadget.xml</gadget>
 </gadgets>
 </column>
 </columns>
</tab>
-->
 </tabs>
</layout>
</finesseLayout>

```

## Update Default Desktop Layout

When you modify the layout of the Finesse desktop, the changes you make take effect on the desktop after 10 seconds. However, agents who are signed in when the changes are made must sign out and sign back in to see those changes reflected on the desktop.



**Note** The call control gadget is only supported at the page level. You must ensure that the call control gadget (<gadget>/desktop/gadgets/CallControl.jsp</gadget>) is placed within the <page></page> tag for it to work correctly. Do not place this gadget within a <tab></tab> tag.

### Procedure

**Step 1** In the Finesse Layout XML area, make changes to the XML as required.

**Example:**

If you want to add a new tab called Reports, add the following XML within the tabs tags under the <role>Agent</role> tag.

```

<tab>
 <id>reports</id>
 <label>Reports</label>
</tab>

```

If you want to add this tab to the supervisor desktop, add the XML within the tabs tags under the <role>Supervisor</role> tag.

To add a gadget to a tab, add the XML for the gadget within the gadgets tag for that tab.

```

<gadgets>

```



```
<gadget>http://<ipAddress>/gadgets/<gadgetname>.xml</gadget>
</gadgets>
```

Replace `<ipAddress>` with the IP address of the server where the gadget resides.

If you want to add multiple columns to a tab on the Finesse desktop, add the gadgets for each column within the columns tags for that tab. You can have up to four columns on a tab.

```
<tab>
 <id>tab-id</id>
 <label>Tab Label</label>
 <columns>
 <column>
 <gadgets>
 <gadget>/gadget/1/url.xml</gadget>
 <gadget>/gadget/2/url.xml</gadget>
 </gadgets>
 </column>
 <column>
 <gadgets>
 <gadget>/gadget/3/url.xml</gadget>
 <gadget>/gadget/4/url.xml</gadget>
 </gadgets>
 </column>
 </columns>
</tab>
```

**Step 2** Click **Save**.

Finesse validates the XML file to ensure that it is valid XML syntax and conforms to the Finesse schema.

**Step 3** After you save your changes, if you want to revert to the last saved desktop layout, click **Revert**. If you want to revert to the default desktop layout, click **Restore Default Layout**.

**Note** During upgrade, any changes made to the Cisco Finesse Default Layout will not be updated. You need to click on **Restore Default Layout** to get the latest changes.

## XML Schema Definition

You must ensure the XML you upload conforms to the XML schema definition for Finesse. The XML schema definition for Finesse is as follows:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
 targetNamespace="http://www.cisco.com/vtg/finesse"
 xmlns="http://www.cisco.com/vtg/finesse"
 elementFormDefault="qualified">

 <!-- definition of role type -->
 <xs:simpleType name="role">
 <xs:restriction base="xs:string">
 <xs:enumeration value="Agent"/>
 <xs:enumeration value="Supervisor"/>
 <xs:enumeration value="Admin"/>
 </xs:restriction>
 </xs:simpleType>
```

```

<!-- definition of simple elements -->
<xs:element name="id">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:pattern value="[a-zA-Z]([-_\.a-zA-Z0-9])*"/>
 </xs:restriction>
 </xs:simpleType>
</xs:element>

<xs:element name="label">
 <xs:simpleType>
 <xs:restriction base="xs:string">
 <xs:minLength value="1" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>

<xs:element name="gadget">
 <xs:simpleType>
 <xs:restriction base="xs:anyURI">
 <xs:minLength value="1" />
 </xs:restriction>
 </xs:simpleType>
</xs:element>
<xs:element name="role" type="role"/>

<xs:element name="gadgets"> <!-- Grouping of a set of gadgets -->
 <xs:complexType>
 <xs:sequence maxOccurs="unbounded">
 <!-- No limit to number of gadget URIs for now -->
 <xs:element ref="gadget"/> <!-- URI of the gadget xml -->
 </xs:sequence>
 </xs:complexType>
</xs:element>

<xs:element name="page"> <!-- Grouping of a set of persistent gadgets -->
 <xs:complexType>
 <xs:sequence maxOccurs="unbounded">
 <!-- No limit to number of gadget URIs for now -->
 <xs:element ref="gadget"/> <!-- URI of the gadget xml -->
 </xs:sequence>
 </xs:complexType>
</xs:element>

<xs:element name="tab">
 <xs:complexType>
 <xs:sequence>
 <xs:element ref="id"/> <!-- Id of the tab selector in the desktop -->
 <xs:element ref="label"/> <!-- Label of the tab selector -->
 <xs:element ref="gadgets" minOccurs="0" maxOccurs="1"/>
 </xs:sequence>
 </xs:complexType>
</xs:element>

<xs:element name="tabs"> <!-- Grouping of tabs -->
 <xs:complexType>
 <xs:sequence maxOccurs="unbounded">
 <!-- No limit to number of tabs for now -->
 <xs:element ref="tab"/>
 </xs:sequence>
 </xs:complexType>
</xs:element>

```

```

<xs:element name="layout">
 <xs:complexType>
 <xs:sequence>
 <xs:element ref="role"/> <!-- Type of the role -->
 <xs:element ref="page"/> <!-- List of page gadgets -->
 <xs:element ref="tabs"/> <!-- Grouping of tabs for this particular role -->
 </xs:sequence>
 </xs:complexType>
</xs:element>

<xs:element name="finesseLayout"> <!-- Layout of the desktop -->
 <xs:complexType>
 <xs:sequence maxOccurs="3">
 <!-- only support 3 roles for now -->
 <xs:element ref="layout" />
 </xs:sequence>
 </xs:complexType>
</xs:element>

</xs:schema>

```

## Add Web Chat and Email to Finesse

The Cisco Finesse default layout XML contains commented XML code for Web Chat and Email gadgets available for the Finesse desktop. Each gadget or tab is surrounded by comment characters (<!-- and -->) and comments that describe what the tab or gadget is for and how to add it to the desktop.



**Note** The Chat and Email Control gadget is only supported at the page level. You must ensure that the Chat and Email Control gadget (<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>) is placed within the <page></page> tag. Placing this gadget within a <tab></tab> tag is not supported.

The procedure that you follow depends on your deployment. The following table describes when to use each procedure.

Procedure	When to use
Add Web Chat and Email to the default desktop layout.	Follow this procedure if you want to add Web Chat and Email to the Finesse desktop after a fresh installation or after an upgrade if you have not customized the default desktop layout.
Add Web Chat and Email to a custom desktop layout.	Follow this procedure if you want to add Web Chat and Email and have customized the desktop layout.
Add Web Chat and Email to a team layout.	Follow this procedure if you want to add Web Chat and Email to the desktop only for specific teams.



**Note** After you add the Web Chat and Email gadgets, sign in to the Finesse desktop and make sure they appear the way you want. Agents who are signed in to Finesse when you change the desktop layout must sign out and sign back in to see the change on their desktops.

## Add Web Chat and Email to the Default Desktop Layout



**Note** If you upgraded from a previous release but do not have a custom desktop layout, click **Restore Default Layout** on the Manage Desktop Layout gadget and then follow the steps in this procedure.

### Procedure

- Step 1** In the Finesse administration console, click the **Desktop Layout** tab.
- Step 2** To add the Chat and Email Control gadget to the agent desktop, look for the following under the `<role>Agent</role>` tag and within the `<page></page>` tag:
- ```
<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
```
- Step 3** Remove the comments and comment characters (`<!--` and `-->`) that surround the gadget, leaving only the gadget (`<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>`).
- Step 4** To add the Manage Chat and Email tab and gadget to the agent desktop, look for the following within the `<tabs></tabs>` tag:
- ```
<tab>
 <id>manageNonVoiceMedia</id>
 <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://my-socialminer-server/multisession/ui/gadgets/
 multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
 </gadgets>
 </column>
 </columns>
</tab>
```
- Step 5** Remove the comments and comment characters (`<!--` and `-->`) that surround the tab.
- Step 6** Replace `my-socialminer-server` in the gadget URL with the fully-qualified domain name (FQDN) of your SocialMiner server.
- Step 7** Optionally, change the height of the Manage Chat and Email gadget.

#### Example:

The height specified in the gadget URL is 430 pixels. If you want to change the height, change the `gadgetHeight` parameter in the URL to the desired value. For example if you want the gadget height to be 600 pixels, change the code as follows:

```
<gadget>https://my-socialminer-server/multisession/ui/gadgets/
 multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chat and Email gadget is 430 pixels. If you do not specify a value for the `gadgetHeight` parameter or if you specify a value that is less than 430, the gadget defaults to 430 pixels.

**Note** An agent can be configured to handle up to five chat contacts and five email contacts at a time. If the agent has the maximum number of contacts on the desktop, not all contacts are visible. If your agents are configured to handle the maximum number of contacts, you must increase the height of this gadget to a minimum of 570 pixels to ensure there is enough space for all of the contacts to appear.

- Step 8** To add the Chat and Email Control gadget to the supervisor desktop, look for the following under the `<role>Supervisor</role>` tag and within the `<page></page>` tag:
- ```
<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
```
- Step 9** Remove the comments and comment characters (`<!--` and `-->`), leaving only the gadget (`<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>`).
- Step 10** To add the Live Data report for Agent Chat Statistics to the supervisor desktop, look for the following:
- ```
<gadget>https://localhost:8444/cuic/gadget/LiveData/
LiveDataGadget.jsp?gadgetHeight=310&
viewId=F2F1FC17100001440000014E0A4E5D48&
filterId=ChatAgentStats.agentId=CL</gadget>
```
- Step 11** Remove the comments and comment characters (`<!--` and `-->`), leaving only the gadget.
- Step 12** To add the Live Data report for Chat Queue Statistics to the supervisor desktop, look for the following:
- ```
<gadget>https://localhost:8444/cuic/gadget/LiveData/
LiveDataGadget.jsp?gadgetHeight=310&
viewId=E42ED788100001440000007B0A4E5CA1&
filterId=ChatQueueStatistics.queueName=CL</gadget>
```
- Step 13** Remove the comments and comment characters (`<!--` and `-->`), leaving only the gadget.
- Step 14** To add the Manage Chat and Email tab and gadget to the supervisor desktop, look for the following within the `<tabs></tabs>` tag:
- ```
<tab>
 <id>manageNonVoiceMedia</id>
 <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
 <columns>
 <column>
 <gadgets>
 <gadget>https://my-socialminer-server/multisession/ui/gadgets/
 multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
 </gadgets>
 </column>
 </columns>
</tab>
```
- Step 15** Remove the comments and comment characters (`<!--` and `-->`) that surround the tab.
- Step 16** Replace `my-socialminer-server` in the gadget URL with the fully-qualified domain name (FQDN) of your SocialMiner server.
- Step 17** Optionally, change the height of the Manage Chat and Email gadget.
- Step 18** Click **Save**.

---

## Add Web Chat and Email to a Custom Desktop Layout

### Procedure

---

- Step 1** In the Finesse administration console, click the **Desktop Layout** tab.
- Step 2** Click **Finesse Default Layout XML** to show the default layout XML.
- Step 3** Copy the XML code for the Chat and Email Control gadget for the agent desktop.
- ```
<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
```

Step 4 To add the gadget to the agent desktop, paste the code within the `<page></page>` tags under the Call Control gadget as follows:

```
<role>Agent</role>
<page>
  <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
</page>
```

Step 5 To add the gadget to the supervisor desktop, paste the code within the `<page></page>` tags under the Call Control gadget as follows:

```
<role>Supervisor</role>
<page>
  <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
</page>
```

Step 6 Copy the code for the agent Manage Chat and Email tab and gadget from the default layout XML.

```
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

Step 7 Paste the code within the `<tabs></tabs>` tag for the agent role after the Manage Call tab:

```
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.agent.manageCallLabel</label>
</tab>
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

Step 8 Replace my-social-miner-server with the FQDN of your SocialMiner server.

Step 9 Optionally, change the height of the Manage Chat and Email gadget.

Example:

The height specified in the gadget URL is 430 pixels. If you want to change the height, change the `gadgetHeight` parameter in the URL to the desired value. For example if you want the gadget height to be 600 pixels, change the code as follows:

```
<gadget>https://my-socialminer-server/multisession/ui/gadgets/
  multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chat and Email gadget is 430 pixels. If you do not specify a value for the `gadgetHeight` parameter or if you specify a value that is less than 430, the gadget defaults to 430 pixels.

Note An agent can be configured to handle up to five chat contacts and five email contacts at a time. If the agent has the maximum number of contacts on the desktop, not all contacts are visible. If your agents are configured to handle the maximum number of contacts, you must increase the height of this gadget to a minimum of 570 pixels to ensure there is enough space for all of the contacts to appear.

Step 10 Copy the code for the Live Data gadgets for Agent Chat Statistics and Chat Queue Statistics from the default layout XML.

```
<gadget>https://localhost:8444/cuic/gadget/LiveData/
  LiveDataGadget.jsp?gadgetHeight=310&
  viewId=F2F1FC17100001440000014E0A4E5D48&
  filterId=ChatAgentStats.agentId=CL</gadget>

<gadget>https://localhost:8444/cuic/gadget/LiveData/
  LiveDataGadget.jsp?gadgetHeight=310&
  viewId=E42ED788100001440000007BOA4E5CA1&
  filterId=ChatQueueStatistics.queueName=CL</gadget>
```

Step 11 Paste the code for these gadgets within the `<gadgets></gadgets>` tags for the tabs on which you want them to appear.

Step 12 Copy the code for the supervisor Manage Chat and Email tab and gadget from the default layout XML.

```
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

Step 13 Paste the code within the `<tabs></tabs>` tag for the supervisor role after the Manage Call tab:

```
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.supervisor.manageCallLabel</label>
</tab>
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

Step 14 Replace `my-social-miner-server` with the FQDN of your SocialMiner server.

Step 15 Optionally, change the height of the gadget.

Step 16 Click **Save**.

Add Web Chat and Email to a Team Layout

Procedure

- Step 1** In the Finesse administration console, click the **Desktop Layout** tab.
- Step 2** Click **Finesse Default Layout XML** to show the default layout XML.
- Step 3** Copy the XML code for the Chat and Email Control gadget for the agent desktop and paste it into a text file.
- ```
<gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
```
- Step 4** Copy the code for the agent Manage Chat and Email tab and gadget and paste it into your text file.
- ```
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```
- Step 5** Copy the code for the Live Data gadgets for Agent Chat Statistics and Chat Queue Statistics and paste it into your text file.
- ```
<gadget>https://localhost:8444/cuic/gadget/LiveData/
 LiveDataGadget.jsp?gadgetHeight=310&
 viewId=F2F1FC17100001440000014E0A4E5D48&
 filterId=ChatAgentStats.agentId=CL</gadget>

<gadget>https://localhost:8444/cuic/gadget/LiveData/
 LiveDataGadget.jsp?gadgetHeight=310&
 viewId=E42ED788100001440000007B0A4E5CA1&
 filterId=ChatQueueStatistics.queueName=CL</gadget>
```
- Step 6** Copy the code for the supervisor Manage Chat and Email tab and gadget and paste it into your text file.
- ```
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```
- Step 7** Click the **Team Resources** tab.
- Step 8** Select the team from the list of teams for which you want to add Web Chat and Email.
- Step 9** Check the **Override System Default** check box.

- Step 10** In the Resources for <team name> area, click the **Desktop Layout** tab.
- Step 11** To add the Chat and Email Control gadget to the agent desktop, copy the code for the gadget from your text file and paste it within the <page></page> tags under the Call Control gadget as follows:

```
<role>Agent</role>
<page>
  <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
</page>
```

- Step 12** To add the gadget to the supervisor desktop, paste the code within the <page></page> tags under the Call Control gadget as follows:

```
<role>Supervisor</role>
<page>
  <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  <gadget>https://localhost/agentdesktop/gadgets/NonVoiceControl.xml</gadget>
</page>
```

- Step 13** To add the Manage Chat and Email tab and gadget to the agent desktop, copy the code from your text file and paste it within the <tabs></tabs> tag for the agent role after the Manage Call tab:

```
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.agent.manageCallLabel</label>
</tab>
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.agent.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

- Step 14** Replace my-social-miner-server with the FQDN of your SocialMiner server.

- Step 15** Optionally, change the height of the Manage Chat and Email gadget.

Example:

The height specified in the gadget URL is 430 pixels. If you want to change the height, change the gadgetHeight parameter in the URL to the desired value. For example if you want the gadget height to be 600 pixels, change the code as follows:

```
<gadget>https://my-socialminer-server/multisession/ui/gadgets/
  multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chat and Email gadget is 430 pixels. If you do not specify a value for the gadgetHeight parameter or if you specify a value that is less than 430, the gadget defaults to 430 pixels.

Note An agent can be configured to handle up to five chat contacts and five email contacts at a time. If the agent has the maximum number of contacts on the desktop, not all contacts are visible. If your agents are configured to handle the maximum number of contacts, you must increase the height of this gadget to a minimum of 570 pixels to ensure there is enough space for all of the contacts to appear.

- Step 16** To add the Live Data gadgets for Web Chat and Email to the supervisor desktop:
- Copy the code for the Agent Chat Statistics Live Data gadget from your text file and paste it within the `<gadgets></gadgets>` tags for the tab on which you want it to appear.
 - Copy the code for the Chat Queue Statistics Live Data gadget from your text file and paste it within the `<gadgets></gadgets>` tags for the tab on which you want it to appear.

- Step 17** To add the Manage Chat and Email tab gadget to the supervisor desktop, copy the code from your text file and paste it within the `<tabs></tabs>` tag for the supervisor role after the Manage Call tab:

```
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.supervisor.manageCallLabel</label>
</tab>
<tab>
  <id>manageNonVoiceMedia</id>
  <label>finesse.container.tabs.supervisor.manageNonVoiceMediaLabel</label>
  <columns>
    <column>
      <gadgets>
        <gadget>https://my-socialminer-server/multisession/ui/gadgets/
          multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
      </gadgets>
    </column>
  </columns>
</tab>
```

- Step 18** Replace my-social-miner-server with the FQDN of your SocialMiner server.

- Step 19** Optionally, change the height of the gadget.

- Step 20** Click **Save**.

Live Data Gadgets

Cisco Finesse for Unified CCX supports Live Data gadgets. Live Data gadgets display information about the current state of the contact center. The gadgets receive data from the real-time data source at frequent intervals and display reports in grid format only.

Cisco Unified Intelligence Center provides Live Data real-time reports that you can add to the Cisco Finesse agent and supervisor desktop.

This feature provides the following access:

- Agents can access the Live Data agent reports.
- Supervisors can access the Live Data supervisor reports.

Gadgets URLs for Reports

The following table displays gadgets URLs for reports.

Users	Reports	Report View	Is the Report Available in Default Layout ?	Tab	Gadget URLs
Agent	Agent CSQ Statistics Report	Agent CSQ Statistics Report	Yes	Home	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=76D964AD10000140000000830A4E5E6F&filterId=AgentCSQStats.csqName=CL&compositeFilterId=AgentCSQStats.AgentIds.agentId=loginId</gadget>
Agent	Agent State Log Report	Agent State Log Report	Yes	My Statistics	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=420&viewId=5D411E8A10000140000000230A4E5E6B&filterId=AgentStateDetailStats.agentID=loginId</gadget>
Agent	Agent Statistics Report	Agent Statistics Report	Yes	My Statistics	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=150&viewId=67D4371110000140000001080A4E5E6B&filterId=ResourceIAQStats.resourceId=loginId</gadget>
Agent	Agent Team Summary Report	Agent Team Summary Report	Yes	Home	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=5C626F9C10000140000000600A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Agent Outbound Team Summary Report	Report since midnight	No	Team Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=FD919FB9100001440000005D0A4E5B29&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Agent Outbound Team Summary Report	Short and long term average	No	Team Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=FD919FB510000144000000470A4E5B29&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Chat Agent Statistics Report	Chat Agent Statistics Report	No	Team Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=120&viewId=F2F1FC17100001440000014E0A4E5D48&filterId=ChatAgentStats.agentId=CL</gadget>

Users	Reports	Report View	Is the Report Available in Default Layout ?	Tab	Gadget URLs
Supervisor	Chat CSQ Summary Report	Chat CSQ Summary Report	No	Queue Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=120&viewId=E42ED788100001440000007B0A4E5CA1&filterId=ChatQueueStatistics.queueName=CL</gadget>
Supervisor	Team State Report	Team State Report	No	—	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=5C90012F10000140000000830A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Team Summary Report	Report since midnight	Yes	Team Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=728283C210000140000000530A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Team Summary Report	Short and long term average	Yes	Team Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=7291DCB410000140000000890A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
Supervisor	Voice CSQ Agent Detail Report	Voice CSQ Agent Detail Report	Yes	Queue Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=9A7A14CE10000140000000ED0A4E5E6B&filterId=VoiceCSQDetailsStats.agentId=CL&compositeFilterId=VoiceCSQDetailsStats.AgentVoiceCSQNames.agentVoiceCSQName=CL</gadget>
Supervisor	Voice CSQ Summary	Snapshot	Yes	Queue Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=C8E2DB1610000140000000A60A4E5E6B&filterId=VoiceIAQStats.esdName=CL</gadget>
Supervisor	Voice CSQ Summary	Short and long term average	Yes	Queue Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=C8EE241910000140000000C30A4E5E6B&filterId=VoiceIAQStats.esdName=CL</gadget>

Users	Reports	Report View	Is the Report Available in Default Layout ?	Tab	Gadget URLs
Supervisor	Voice CSQ Summary	Report since midnight	No	Queue Data	<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=C8EF510810000140000000EB0A4E5E6B&filterId=VoiceIAQStats.esdName=CL</gadget>

Gadgets Customization

You can use optional query parameter to adjust height of the gadgets.

Query Parameter

```
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=200&viewId=5C626F9C10000140000000600A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
```

Add Live Data Gadgets to Desktop Layout

The Cisco Finesse default layout XML contains commented XML code for the Live Data gadgets available for Cisco Finesse desktop. Perform the following steps to add Live Data gadgets to desktop layout:

Procedure

- Step 1** Sign in to Cisco Finesse administration console. Cisco Finesse home page appears.
- Step 2** Click the **Desktop Layout** tab.
- Step 3** Click **Finesse Default Layout XML** to show the default layout XML.
- Step 4** Copy the gadget URL for the report you want to add from **Live Data Gadgets**.

Example:

To add the Agent Report, copy the following:

```
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=150&viewId=67D4371110000140000001080A4E5E6B&filterId=ResourceIAQStats.resourceId=loginId</gadget>
```

- Step 5** Paste the gadget URL within the tab tags where you want it to appear.

Example:

To add the report to the home tab of the agent desktop:

```
<finesseLayout xmlns="http://www.cisco.com/vtg/finesse">
  <layout>
    <role>Agent</role>
    <page>
      <gadget>/desktop/gadgets/CallControl.jsp</gadget>
    </page>
  </layout>
</finesseLayout>
```

```

<tab>
  <id>home</id>
  <label>finesse.container.tabs.agent.homeLabel</label>
  <gadgets>
    <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight
      =310&viewId=76D964AD10000140000000830A4E5E6F&filterId=AgentCSQStats.csqName
      =CL&compositeFilterId=AgentCSQStats.AgentIds.agentId=loginId</gadget>
    <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight
      =310&viewId=5C626F9C10000140000000600A4E5B33&filterId
      =ResourceIAQStats.resourceId=CL</gadget>
    </gadgets>
  <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight
    =150&viewId=67D4371110000140000001080A4E5E6B&filterId=ResourceIAQStats.resourceId
    =loginId</gadget>
</tab>
<tab>
  <id>myStatistics</id>
  <label>finesse.container.tabs.agent.myStatisticsLabel</label>
  <gadgets>
    <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight
      =600&viewId=5D411E8A10000140000000230A4E5E6B&filterId=AgentStateDetailStats.agentID
      =loginId</gadget>
    </gadgets>
  </tab>
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.agent.manageCallLabel</label>
</tab>
</tabs>
</layout>
<layout>
  <role>Supervisor</role>
  <page>
    <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  </page>

```

- Step 6** Click **Save**. Cisco Finesse validates the XML file to ensure that it is valid XML syntax and conforms to the Cisco Finesse schema.
- Step 7** To verify, log in to Cisco Finesse agent desktop as agent/Cisco Finesse supervisor desktop as supervisor and check the reports.

Add Customized Live Data Gadgets to Desktop Layout

This procedure explains how to create gadget URLs for customized Live Data reports, which are copied from stock reports, and add them to desktop layout.



Note The new gadget renders the report only when the appropriate permission on that report is given in Cisco Unified Intelligence Center.

Procedure

- Step 1** Copy the gadget URL of the stock report that you want to customize from **Live Data Gadgets** and paste it in a text editor.

Example:

Consider the URL shown here as the gadget URL. Copy and paste it in a text editor. The underlined ID is the value of viewID.

```
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310
&viewId=5C626F9C10000140000000600A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
```

- Step 2** In Cisco Unified Intelligence Center, in the Edit view of the customized report, select the view for which you want to create the gadget URL and then click **Links**.

The HTML Link field displays the permalink of the customized report.

- Step 3** Copy the permalink of the customized report from the **HTML Link** field and paste it in a text editor, then copy the viewID value from this link.

Example:

Copy the underlined viewID value from the permalink of the customized report.

```
https://<Server Name>:8444/cuic/permalink/PermalinkViewer.htmx?
viewId=5C90012F10000140000000830A4E5B33&linkType=htmlType&viewType=Grid
```

- Step 4** Replace the viewID value in the gadget URL with the viewID value from the permalink of the customized report.

Example:

The customized gadget URL appears as shown here after replacing the viewID value with the viewID value of the customized report.

```
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310
&viewId=5C90012F10000140000000830A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
```

- Step 5** Add the customized gadget URL to Desktop Layout in the Finesse administration console and save.

- Step 6** Log in to Finesse desktop and check the report.

Live Data Reports

Cisco Unified Intelligence Center provides Live Data real-time reports that you can add to the Finesse desktop.

Configure Live Data Reports with Multiple Views

Cisco Finesse allows you to display multiple Live Data reports or views on a single gadget. Supervisors can select the desired view to display from a drop-down list on the gadget toolbar, which lists up to five report views in *Report Name - View Name* format.

This procedure describes how to add multiple Live Data views to the Finesse desktop layout using the viewId_n and filterId_n keys. You can specify up to five report views to appear in your gadget. The first view among the five is the default view. There is no defined order for how the remaining views are displayed.

Finesse still supports the display of a single gadget using a single viewId. However, if you specify the single viewId along with multiple viewId_n keys, the multiple views are used and the single viewId is ignored.



Note To make sure the modified gadget renders in the Finesse desktop, you must give the appropriate permission for that report in Unified Intelligence Center.

Procedure

Step 1 For each report or view that you want to include in the gadget, obtain the associated viewId from the permalink for the view:

- a) In Unified Intelligence Center, in Edit view of the report, select the desired view then click **Links**.

The HTML Link field displays the permalink of the customized report.

- b) Copy the permalink of the customized report from the **HTML Link** field, and paste it in a text editor, and then copy the viewID value from the permalink and save it.

Example:

Copy the viewId, which is underlined in this example, from the permalink for the report.

```
https://<Server Name>:8444/cuic/permalink/PermalinkViewer.htmx?
viewId=5C90012F10000140000000830A4E5B33&linkType=htmlType&viewType=Grid
```

Step 2 From the Finesse default layout XML, copy the gadget URL for one of the Live Data reports and paste it into a text editor.

Example:

Copy the URL for the Agent Skill Group for HTTPS from the default layout XML and paste it into a text editor:

```
<gadget>https://my-cuic-server:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&
viewId_1=9AB7848B10000141000001C50A0006C4&filterId_1=agent.id=CL%20teamName</gadget>
```

Step 3 To update the URL to refer to a different report view, populate the viewId_1 value (after the equal sign) with the desired viewId obtained in step 1.

Example:

The following shows the URL updated with the example viewId copied from step 1.

```
<gadget>https://my-cuic-server:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&
viewId_1=5C90012F10000140000000830A4E5B33&filterId_1=agent.id=CL%20teamName</gadget>
```

Step 4 For each additional view you want to include:

- a) At the end of the URL, copy and paste the viewId_1 and agentId_1 strings with a leading ampersand.

Example:

```
<gadget>https://my-cuic-server:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&
viewId_1=5C90012F10000140000000830A4E5B33&filterId_1=agent.id=CL%20teamName&
viewId_1=5C90012F10000140000000830A4E5B33&filterId_1=agent.id=CL%20teamName</gadget>
```

- b) Update the copied viewId_1 and filterId_1 in the URL to the next available integer (in this example, viewId_2 and filterId_2).

Example:

```
<gadget>https://my-cuic-server:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&
viewId_1=5C90012F10000140000000830A4E5B33&filterId_1=agent.id=CL%20teamName&
viewId_2=5C90012F10000140000000830A4E5B33&filterId_2=agent.id=CL%20teamName</gadget>
```


- c) Populate the copied viewId value (after the equal sign) with the value defined in the permalink for the desired report (in this example, 99E6C8E210000141000000D80A0006C4).

Example:

```
<gadget>https://my-cuic-server:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId_1=5C90012F10000140000000830A4E5B33&filterId_1=agent.id=CL%20teamName&viewId_2=99E6C8E210000141000000D80A0006C4&filterId_2=agent.id=CL%20teamName</gadget>
```

- d) Make sure that the filterId value matches the type required by the report type, as follows:

- Agent Reports: filterId_N=agent.id=CL%20teamName
- Agent Skill Group Reports: filterId_N=agent.id=CL%20teamName
- Skill Group Reports: filterId_N=skillGroup.id=CL%20teamName
- Precision Queue Reports: filterId_N=precisionQueue.id=CL%20teamName

Step 5 Replace my-cuic-server with the fully qualified domain name of your Cisco Unified Intelligence Center Server.

Step 6 Add the customized gadget URL to the desktop layout XML in the Manage Desktop Layout gadget and click **Save**.

Note After you add the gadget, sign in to the Finesse desktop and make sure it appears the way you want. If you use a report with a large number of rows, you may want to adjust the gadget height or the screen resolution on the computer used to access the desktop to make the report easier to read or make more rows appear on the screen without the need to scroll.

Agents who are signed in when you change the desktop layout must sign out and sign back in to see the change on their desktops.

Manage Phone Books

On the Phone Books tab of the Cisco Finesse administration console, you can create and manage global and team phone books and phone book contacts. Global phone books are available to all agents; team phone books are available to agents in that specific team.

Phone Books and Contacts

Finesse supports the following number of phone books:

- 10 global phone books
- 300 team phone books

The system supports a total of 50,000 contacts. The total number of contacts per agent across all phone books is limited to 1500.

Use the Manage Phone Books gadget to view, add, edit, or delete phone books and phone book contacts. Click the Name or Assign To headers to sort the phone books in ascending or descending order. Click the last Name, First Name, Number, or Note headers to sort the contacts in ascending or descending order.

The following table describes the fields on the Manage Phone Books gadget.

Field	Explanation
Name	The name of the phone book. The name must be unique, and can be a maximum length of 64 alphanumeric characters.
Assign To	Indicates if the phone book is global (All Users) or team (Teams).
Last Name	The last name of a contact. The last name can be a maximum length of 128 characters. This field is optional.
First Name	The first name of a contact. The first name can be a maximum length of 128 characters. This field is optional.
Number	The phone number for the contact. The phone number can be 1-32 characters long and cannot be blank.
Note	Optional text that describes the contact. The note can be a maximum length of 128 characters.

Actions on the Manage Phone Books gadget:

- **New:** Add a new phone book or contact
- **Edit:** Edit an existing phone book or contact
- **Delete:** Delete a phone book or contact
- **Refresh:** Reload the list of phone books or contacts from the server
- **Import:** Import a list of contacts to the phone book
- **Export:** Export a list of contacts from the phone book

Add Phone Book

Procedure

-
- Step 1** In the Manage Phone Books gadget, click **New**.
The Manage Phone Books area appears.
- Step 2** In the Name box, enter a name for the phone book.
Note Phone book names can be a maximum length of 64 characters.
- Step 3** In the Assign To box drop-down list, select **All Users** if the phone book is global or **Teams** if the phone book is available to specified teams.
- Step 4** Click **Save**.
-

Edit Phone Book

Procedure

-
- Step 1** In the Manage Phone Books gadget, select the phone book you want to edit.
- Step 2** Click **Edit**.
The Edit Phone Books area appears.
- Step 3** In the Name field, enter the new name for the phone book. If you want to change who can access the phone book, in the Assign To field drop-down list, choose **All Users** or **Teams**.
- Step 4** Click **Save**.
If you change the Assign To field from Teams to All Users, a message appears that asks you to confirm the change. Click **Yes** to confirm.
-

Delete Phone Book

Procedure

-
- Step 1** In the Manage Phone Books gadget, select the phone book that you want to delete.
- Step 2** Click **Delete**.
A question appears asking you to confirm that you want to delete the selected phone book.
- Step 3** Click **Yes** to confirm the deletion of the selected phone book.
-

Import Contacts

The Import function allows you to replace all the contacts in a phone book with a new list of contacts, or to populate a new phone book with contacts.

The import list must be in the specified comma separated values (CSV) format, and can contain a maximum of 1500 contacts. Import lists that contain more than 1500 contacts are rejected with an error message.

The CSV file contains the fields described in the following table.

Field	Max Length	Can Be Blank?	Permitted Characters
First Name	128	Yes	Note The CSV file that contains the contacts to import must use Latin encoding.
Last Name	128	Yes	
Phone Number	32	No	
Notes	128	Yes	

The following is an example of a phone book CSV file:

```
"First Name","Last Name","Phone Number","Notes"
"Amanda","Cohen","6511234",""
"Nicholas","Knight","612-555-1228","Sales"
"Natalie","Lambert","952-555-9876","Benefits"
"Joseph","Stonetree","651-555-7612","Manager"
```

A phone book CSV file must conform to this format and include the headers in the first line. During import, the file is scanned for illegal characters. If any are found, they are replaced with question marks.



Note Exported CSV files always show each field enclosed in double quotes, as in the preceding example, to ensure that any commas or double quotes that are part of the actual filed data are not mistaken for field delimiters. If your data does not include these characters, you can omit the double quotes in files you prepare for importing.

Procedure

- Step 1** In the Manage Phone Books gadget, select the phone book into which you want to import a list of contacts.
 - Step 2** Click **Import**.
The Import Contacts area appears.
 - Step 3** Click **Browse** and navigate to the location of the CSV file containing the contacts you want to import.
Note The CSV file must use Latin encoding.
 - Step 4** Click **OK**.
-

Export Contacts

The Export function allows you to extract a list of contacts from an existing phone book. The exported list is saved in CSV format.

Procedure

- Step 1** In the Manage Phone Books gadget, select the phone book that contains the contacts you want to export.
 - Step 2** Click **Export**.
A message is displayed asking if you want to open or save the file.
Note The default name for an export file is PhoneBookContacts.csv.
 - Step 3** Click **Open** to open the CSV file in Excel, or click the **Save** drop-down list and choose **Save**, **Save as**, or **Save and open**, as desired.
 - Step 4** A message appears that gives you the option to view the downloaded file, open the folder into which the download was saved, view the Internet Explorer View Downloads window, or dismiss the message without viewing the file.
-

Add Contact

Procedure

- Step 1** In the Manage Phone Books gadget, select the phone book to which you want to add a contact. The List of Contacts for <phone book name> area appears.
- Step 2** Click **New**.
The New Contact area appears.
- Step 3** Complete the fields. The First Name, Last Name, and Note fields are optional and have a maximum length of 128 characters. The Number field is required and has a maximum length of 32 characters.
- Step 4** Click **Save**.
-

Edit Contact

Procedure

- Step 1** In the Manage Phone Books gadget, select the phone book that contains the contact you want to edit. The List of Contacts for <phone book name> area appears.
- Step 2** Select the contact you want to edit.
- Step 3** Click **Edit**.
The Edit Contact area appears.
- Step 4** Edit the fields that you want to change. The First Name, Last Name, and Note fields are optional and have a maximum length of 128 characters. The Number field is required and has a maximum length of 32 characters.
- Step 5** Click **Save**.
-

Delete Contact

Procedure

- Step 1** In the Manage Phone Books gadget, select the phone book that contains the contact you want to delete. The List of Contacts for <phone book name> area appears.
- Step 2** Select the contact that you want to delete.
- Step 3** Click **Delete**.
A question appears asking you to confirm that you want to delete the selected contact.

Step 4 Click **Yes** to confirm the deletion of the selected contact.

Manage Reasons

The Reasons tab on the Cisco Finesse administration console allows you to view, add, edit, and delete Not Ready reason codes, Sign Out reason codes, and Wrap-Up reasons.



Note Certain reason codes are reserved and cannot be used.

For Unified CCX systems, these reserved reason codes are as follows: 0, 22, and 33.

Not Ready Reason Codes

Not Ready reason codes represent reasons that agents can select when they change their state to Not Ready.

Use the Manage Reason Codes (Not Ready) gadget to view, add, edit, or delete Not Ready reason codes. Click the Reason Label or Reason Code headers to sort the Not Ready reason codes by label or reason code in ascending or descending order. Click the Global header to sort reason codes by whether they are global (Yes) or not (No).

Not Ready reason codes can be global (visible to all agents) or team (visible only to agents on specified teams).



Note Finesse supports a total of 200 Not Ready reason codes. This includes a maximum of 100 global Not Ready reason codes, and 100 Not Ready team reason codes. The team reason codes can be mapped to any team, and the same reason code can be mapped to multiple teams.

The following table describes the fields on the Manage Reason Codes (Not Ready) gadget.

Field	Explanation
Reason Label	The label for the Not Ready reason code. The label has a maximum length of 40 characters and should be unique for each Not Ready reason code. Both alphanumeric and special characters are supported.
Reason Code	A code for the Not Ready reason. The value of the code must be between 1 and 999 and must be unique.
Global?	Yes/No. Indicates if the reason code is available globally to all agents (Yes) or to specific teams of agents (No).



Note In previous releases, Finesse did allow you to create multiple Not Ready reason codes with the same code or with code values greater than 999. If you upgraded from a previous release, you may have Not Ready reason codes in your database that violate the new rules. After you complete the upgrade, find the codes and edit them to give them unique values within the supported range. You can find the codes by clicking on the Reason Code header to sort the codes by their value.

Actions on the Manage Reason Codes (Not Ready) gadget:

- **New:** Add a new Not Ready reason code
- **Edit:** Edit an existing Not Ready reason code
- **Delete:** Delete a Not Ready reason code
- **Refresh:** Reload the list of Not Ready reason codes from the server



Note When you add, edit, or delete a Not Ready reason code, the changes you make take effect on the Finesse desktop after three seconds. However, agents who are signed in when the changes are made must sign out and sign back in to see those changes reflected on their desktops.

When an agent signs in to the Finesse desktop, the agent state is set to Not Ready. The agent can then choose to go to Ready status or choose from one of the configured Not Ready reason codes from the agent state drop-down list.

If an agent wants to change from Ready to Not Ready status, that agent can choose the appropriate Not Ready reason code from the list of configured codes.

An agent who is on a call can select a state to be applied when the call is complete. For example, if an agent wants to be in Not Ready state when the call ends, that agent can choose Not Ready from the drop-down list while still on the call. The Finesse desktop shows the agent in Talking state and a pending state of Not Ready.

Pending state changes appear on the desktop while the agent's state is Talking (for example, on hold, in a consult call, conference, or silent monitor call).

Add Not Ready Reason Code

Perform the following procedure to add a new Not Ready reason code.

Procedure

Step 1 In the Manage Reason Codes (Not Ready) gadget, click **New**.

The New Reason Code area appears.

Step 2 In the Reason Label box, enter a label for the reason code.

Note Not Ready reason code labels are limited to 40 characters.

Step 3 In the Reason Code box, enter a reason code.

Note The code must be between 1 and 999 and must be unique.
Ensure there are no leading or trailing spaces.

Step 4 If the reason code is global, select the Global? check box. If the reason code is specific to a team, clear the Global? check box.

Note By default, the Global? check box is selected.

Step 5 Click **Save**.

Note The Finesse server removes leading or trailing spaces before saving the Reason Label in the database.

Edit Not Ready Reason Code

Perform the following procedure to edit the label or code for an existing Not Ready reason code.

Procedure

Step 1 In the Manage Reason Codes (Not Ready) gadget, select the reason code that you want to edit.

Step 2 Click **Edit**.

The Edit Reason Code area appears.

Step 3 If you want to change the label for the Not Ready reason code, in the Reason Label field, enter a new label for the reason code. If you want to change the code, in the Reason Code field, enter the new code. If you want to change who has access to the code, select or clear the Global? check box.

Step 4 Click **Save**.

Delete Not Ready Reason Code



Note An error may occur if an agent selects a Not Ready reason code after it has been deleted. Agents who are signed in when you make changes to Not Ready reason codes must sign out and sign back in to see those changes reflected on their desktops.

Perform the following procedure to delete a Not Ready reason code.

Procedure

Step 1 In the Manage Reason Codes (Not Ready) gadget, select the Not Ready reason code that you want to delete.

Step 2 Click **Delete**.

A question appears asking you to confirm that you want to delete the selected reason code.

Step 3 Click **Yes** to confirm the deletion of the selected reason code.

Sign Out Reason Codes

Sign Out reason codes represent reasons that agents can select when they sign out of the Finesse desktop.

Use the Manage Reason Codes (Sign Out) gadget to view, add, edit, or delete Sign Out reason codes. Click the Reason Label or Reason Code headers to sort the Sign Out reason codes by label or by reason code, in ascending or descending order. Click the Global header to sort the reason codes by whether they are global (Yes) or not (No).

Sign Out reason codes can be global (visible to all agents) or team (visible only to agents on specified teams).



Note Finesse supports a total of 200 Sign Out reason codes. This includes a maximum of 100 global Sign Out reason codes, and 100 Sign Out team reason codes. The team reason codes can be mapped to any team, and the same reason code can be mapped to multiple teams.

The following table describes the fields on the Manage Reason Codes (Sign Out) gadget.

Field	Explanation
Reason Label	The label for the Sign Out reason code. The label has a maximum length of 40 characters and should be unique for each Sign Out reason code. Both alphanumeric and special characters are supported.
Reason Code	A code for the Sign Out reason. The code must be between 1 and 999 and must be unique.
Global?	Yes/No. Indicates if the reason code is available globally to all agents (Yes) or to specific teams of agents (No).



Note In previous releases, Finesse did allow you to create multiple Sign Out reason codes with the same code or with code values greater than 999. If you upgraded from a previous release, you may have Sign Out reason codes in your database that violate the new rules. After you complete the upgrade, find the codes and edit them to give them unique values within the supported range. You can find the codes by clicking on the Reason Code header to sort the codes by their value.

Actions on the Manage Reason Codes (Sign Out) gadget:

- **New:** Add a new Sign Out reason code
- **Edit:** Edit an existing Sign Out reason code
- **Delete:** Delete a Sign Out reason code
- **Refresh:** Reload the list of Sign Out reason codes from the server



Note When you add, edit, or delete a Sign Out reason code, the changes you make take effect on the Finesse desktop after three seconds. However, agents who are signed in when the changes are made must sign out and sign back in to see those changes reflected on their desktops.

When an agent clicks Sign Out on the desktop, any configured Sign Out codes appear in a drop-down list. The agent can then choose the code that represents why that agent is signing out.

Add Sign Out Reason Code

Perform the following procedure to add a new Sign Out reason code.

Procedure

- Step 1** In the Manage Reason Codes (Sign Out) gadget, click **New**.
The New Reason Code area appears.
- Step 2** In the Reason Label box, enter a label for the reason code.
Note Sign Out reason code labels are limited to 40 characters.
- Step 3** In the Reason Code box, enter a reason code.
Note The code must be between 1 and 999 and must be unique.
Ensure there are no leading or trailing spaces.
- Step 4** If the reason code is global, select the Global? check box. If the reason code is specific to a team, clear the Global? check box.
Note By default, the Global? check box is selected.
- Step 5** Click **Save**.
-

Edit Sign Out Reason Code

Perform the following procedure to edit the label or code for an existing Sign Out reason code.

Procedure

- Step 1** In the Manage Reason Codes (Sign Out) gadget, select the reason code that you want to edit.
- Step 2** Click **Edit**.
The Edit Reason Code area appears.
- Step 3** If you want to change the label of the Sign Out reason code, in the Reason Label field, enter a new label for the reason code. If you want to change the code, in the Reason Code field, enter the new code. If you want to change who has access to the code, select or clear the Global? check box.

Step 4 Click **Save**.

Delete Sign Out Reason Code



Note An error may occur if an agent selects a Sign Out reason code after it has been deleted. Agents who are signed in when you make changes to Sign Out reason codes must sign out and sign back in to see those changes reflected on their desktops.

Perform the following procedure to delete a Sign Out reason code.

Procedure

Step 1 In the Manage Reason Codes (Sign Out) gadget, select the Sign Out reason code that you want to delete.

Step 2 Click **Delete**.

A question appears asking you to confirm that you want to delete the selected reason code.

Step 3 Click **Yes** to confirm the deletion of the selected Sign Out reason code.

Wrap-Up Reasons

Wrap-Up reasons represent the reasons that agents can apply to calls. A Wrap-Up reason indicates why a customer called the contact center. For example, you may have one Wrap-Up reason for sales calls and another for support calls.

You can configure Wrap-Up reasons to be available globally to all agents or only to specific teams.

Use the Manage Wrap-Up Reasons gadget to view, add, edit, or delete Wrap-Up reasons. Click the Reason Label header to sort the Wrap-Up reasons in ascending or descending order.



Note Finesse supports a maximum of 100 global and 1500 team Wrap-Up reasons. No more than 100 Wrap-Up reasons can be assigned to any one team.



Note If an agent is configured for wrap-up and selects a pending state during a call, when the call finishes that agent goes into the pending state selected during the call.

The following table describes the fields on the Manage Wrap-Up Reasons gadget.

Field	Explanation
Reason Label	The label for the Wrap-Up reason.

	This label must be unique for each Wrap-Up reason and has a maximum length of 39 bytes (which equals 39 US English characters). Both alphanumeric and special characters are supported.
Global?	Yes/No. Indicates if the Wrap-Up reason is available globally to all agents (Yes) or to specific teams of agents (No).

Actions on the Manage Wrap-Up Reasons gadget:

- **New:** Add a new Wrap-Up reason
- **Edit:** Edit an existing Wrap-Up reason
- **Delete:** Delete a Wrap-Up reason
- **Refresh:** Reload the list of Wrap-Up reasons from the server



Note When you add, edit, or delete a Wrap-Up reason, the changes you make take effect on the agent or supervisor desktop after three seconds. However, agents who are signed in when the changes are made must sign out and sign back in to see those changes reflected on their desktops.

Add Wrap-Up Reason

Perform the following procedure to add a new Wrap-Up reason.

Procedure

-
- Step 1** In the Manage Wrap-Up Reasons gadget, click **New**.
The New Wrap-Up Reason area appears.
- Step 2** In the Reason Label field, add a label for the Wrap-Up reason.
Note Wrap-Up reason labels are limited to 39 bytes.
- Step 3** If the Wrap-Up reason is global, select the Global? check box. If the Wrap-Up reason is specific to a team, clear the Global? check box.
Note By default, the Global? check box is selected.
- Step 4** Click **Save**.
-

Edit Wrap-Up Reason

Perform the following procedure to edit an existing Wrap-Up reason.

Procedure

- Step 1** In the Manage Wrap-Up Reasons gadget, select the Wrap-Up reason that you want to edit.
- Step 2** Click **Edit**.
The Edit Wrap-Up Reason area appears.
- Step 3** In the Wrap-Up Reason Label field, enter the new label for the Wrap-Up reason. If you want to change who has access to the Wrap-Up reason, select or clear the Global? check box.
- Step 4** Click **Save**.
-

Delete Wrap-Up Reason

Perform the following procedure to delete a Wrap-Up reason.

Procedure

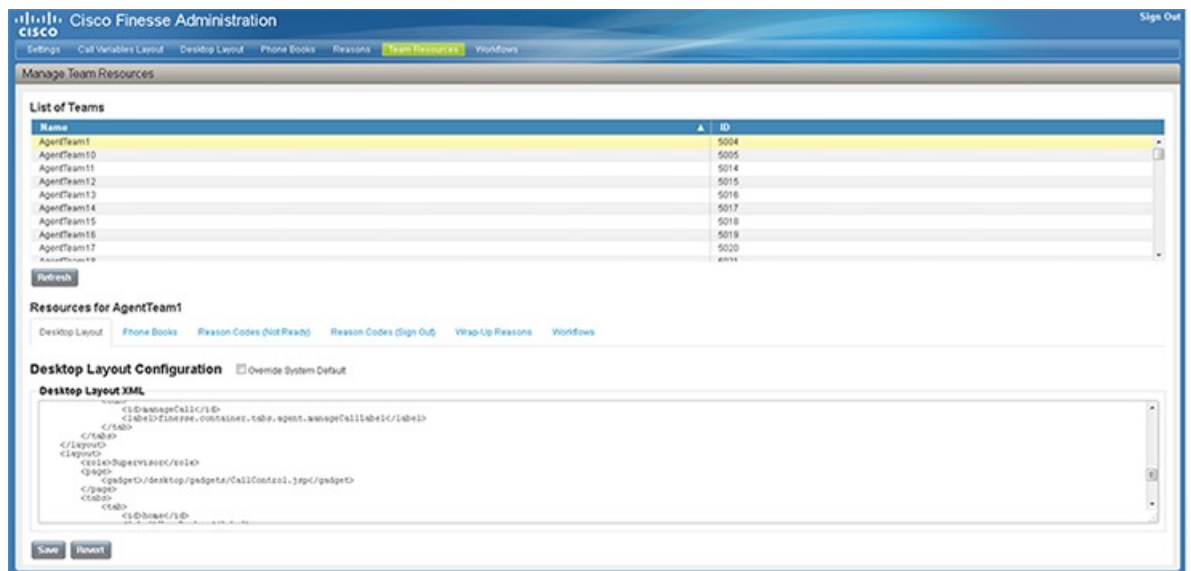
- Step 1** In the Manage Wrap-Up Reasons gadget, select the Wrap-Up reason that you want to delete.
- Step 2** Click **Delete**.
A question appears asking you to confirm that you want to delete the selected Wrap-Up reason.
- Step 3** Click **Yes** to confirm the deletion of the selected Wrap-Up reason.
-

Manage Team Resources

You can assign phone books, reason codes, wrap-up reasons, custom desktop layouts, and workflows to teams on the Team Resources tab of the administration console.

Team Resources

Use the Manage Team Resources gadget on the Team Resources tab to assign and unassign phone books, reasons, custom desktop layouts, and workflows to teams. Click the Name or ID header to sort the teams in ascending or descending order.



371009

The Manage Team Resources gadget contains six tabs, each enabling you to assign or unassign resources to a team. The tabs are defined in the following table.

Tab Name	Description
Desktop Layout	Use this tab to customize the desktop layout for the team. The default layout is defined in the Manage Desktop Layout gadget. You can define one custom layout for the team.
Phone Books	Use this tab to assign and unassign phone books to the team. Only phone books that are defined in the Manage Phone Books gadget as available to teams are available for assignment.
Reason Codes (Not Ready)	Use this tab to assign and unassign Not Ready reason codes to the team. Only Not Ready reason codes that are defined in the Manage Reason Codes (Not Ready) gadget as available to teams (not global) are available for assignment.
Reason Codes (Sign Out)	Use this tab to assign and unassign Sign Out reason codes to the team. Only Sign Out reason codes that are defined in the Manage Reason Codes (Sign Out) gadget as available to teams (not global) are available for assignment.
Wrap-Up Reasons	Use this tab to assign and unassign Wrap-Up reasons to the team. Only Wrap-Up reasons that are defined in the Manage Wrap-Up Reasons gadget as available to teams (not global) are available for assignment.
Workflows	Use this tab to assign and unassign workflows to the team. Only workflows that are defined in the Manage Workflows gadget are available for assignment.

Actions on the Manage Team Resources Gadget

- **Add:** Assign a phone book, reason, or workflow to the team
- **Save:** Save the phone book, reason, desktop layout assignment, or workflow to the team
- **Revert:** Cancel any changes made before they are saved

- **Refresh:** Refresh the list of teams



Note If you select a team and then click Refresh, the team is deselected and the Resources area for that team disappears. The list of teams is refreshed and you must select a team again.

Add or Delete a Team When Database Is Not Accessible

If you add or delete a team when Finesse cannot access the Finesse database, those changes do not appear in the Finesse administration console unless you restart Cisco Finesse Tomcat or the Cisco Unified CCX Engine.

Assign Phone Books and Reasons to Team

Procedure

- Step 1** In the Manage Team Resources gadget, select a team.
Tabs for each available resource appear.
- Step 2** Click the tab for the resource you want to assign for the selected team.
The List of <resource> area appears.
- Step 3** Click **Add**.
The Add <resource> popup appears.
- Step 4** Select one or more resources from the list to assign them to the team.
Resources you assign are highlighted in blue in the Add <resources> popup and added to the List of <resources> area.
- Step 5** When you has finished assigning resources, click **Save**.
- Note** You can make changes on all resource tabs and then save them at the same time. If there is an error on one resource tab but not others, the changes on the tabs with no errors are saved while the changes on the tab with errors are not saved.
-

Unassign Phone Books and Reasons from Team

Procedure

- Step 1** In the Manage Team Resources gadget, select a team.
Tabs for each available resource appear.
- Step 2** Click the tab for the resource you want to unassign from the selected team.

The List of <resource> area appears.

Step 3 Click the red X next to the resource you want to unassign.

Step 4 Click **Save**.

Assign Custom Desktop Layout to Team

Perform the following procedure to create and assign a custom desktop layout to a team.

Procedure

Step 1 In the Manage Team Resources gadget, select a team.

Tabs for each available resource appear.

Step 2 Click the Desktop Layout tab.

The Desktop Layout XML area appears. The area contains the default desktop layout XML.

Step 3 Select the Override System Default check box.

The XML becomes editable.

Step 4 Edit the XML as desired.

Step 5 Click **Save**.

The custom desktop layout replaces the default desktop layout for the team after 10 seconds. If a supervisor or agent is signed in when the change is saved, the change does not go into effect on their desktop until the supervisor or agent signs out and signs in again.

Note If you clear the Override System Default check box, any changes you made to the XML are lost and the XML in the editing pane reverts to the default desktop layout XML.



Note If the Supervisor is managing single / multiple teams, the custom layout of the team for which he is a resource / agent is displayed. However, if he is not a resource / agent of the team, the layout of the default team is displayed.

Assign Workflows to Team

Procedure

Step 1 In the Manage Team Resources gadget, select a team.

Tabs for each available resource appear.

Step 2 Click the Workflows tab.

The List of Workflows area appears.

Step 3 Click **Add**.

The Add Workflow popup appears.

Step 4 Select one or more workflows from the list to assign them to the team.

Workflows you assign are highlighted in blue in the Add Workflows popup and added to the List of Workflows area.

Step 5 Workflows are executed in the order in which they are listed. Use the up and down arrows to move a selected workflow to the desired position in the list.

Step 6 When you have finished assigning workflows, click **Save**.

Note You can make changes on all resource tabs and then save them at the same time. If there is an error on one resource tab but not others, the changes on the tabs with no errors are saved while the changes on the tab with errors are not saved.

Unassign Workflows from Team

Procedure

Step 1 In the Manage Team Resources gadget, select a team.

Tabs for each available resource appear.

Step 2 Click the Workflows tab.

The List of Workflows area appears.

Step 3 Click the red X next to the workflow you want to unassign.

Step 4 Click **Save**.

Manage Workflows

On the Workflows tab of the Cisco Finesse administration console, you can create and manage workflows and workflow actions.

Workflows and Workflow Actions

You can use workflows to automate common repetitive agent tasks. A workflow has a unique name and a helpful description. Use the Manage Workflows and Manage Workflow Actions gadgets to view, add, edit, or delete workflows and workflow actions.

All workflows are team-level workflows. You cannot create a global workflow. If you need a global workflow, create a team workflow and assign it to all teams.

Finesse supports the following number of workflows and workflow actions:

- 100 workflows per Finesse system
- 100 actions per Finesse system
- 20 workflows per team
- 5 conditions per workflow
- 5 actions per workflow
- 5 variables per action

Click the column headers to sort workflows and workflow actions in ascending or descending order.

The following table describes the fields on the Manage Workflows gadget.

Field	Explanation
Name	The name of the workflow. The name must be unique and can be a maximum length of 40 characters.
Description	The description of the workflow. The description can be a maximum length of 128 characters.

The following table describes the fields on the Manage Workflow Actions gadget.

Field	Explanation
Name	The name of the workflow action. The name must be unique and can be a maximum length of 64 characters.
Type	The type of workflow. Possible values are Browser Pop, HTTP Request.

Actions on the Manage Workflows and Manage Workflow Actions gadgets:

- **New:** Add a new workflow or workflow action
- **Edit:** Edit an workflow or workflow action
- **Delete:** Delete a workflow or workflow action
- **Refresh:** Reload the list of workflows or workflow actions from the server

You can configure workflow actions to be handled by the Finesse desktop or in a third-party gadget. A third-party gadget can be designed to handle the action differently than Finesse does.

Each workflow must contain only one trigger. Triggers are based on Finesse dialog events. Dialog events include the following:

- When a call arrives
- When a call is answered



Note If you set a workflow to trigger when a call is answered, the workflow runs when an agent answers an incoming call or makes an outgoing call, or when a customer answers an Outbound Option call.

- When a call ends
- When making a call
- While previewing a Direct Preview Outbound call.

The workflow engine uses the following simple logic to determine whether to execute a workflow:

- To determine whether a workflow should execute, its trigger set and conditions are evaluated against each dialog event received.
- The workflow engine processes workflow events for the first call that matches any configured workflow's trigger set and conditions. No other workflows run until this call has ended. If the agent accepts a second call while still on the first call, workflows do not run on the second call even after the first call has ended.



Note Outbound Preview calls are an exception to this rule. You can have a workflow run while the agent previews the call as well as when the agent accepts the call.

- After a workflow for a particular trigger type (for example, Call Arrives) executes, it never triggers again for the same dialog ID.

The workflow engine caches workflows for an agent when the agent signs in. Workflows do not change for the agent until the agent signs out and signs in again or refreshes the browser.



Note Workflows that trigger when a call arrives, when a call is answered, or when making a call run whenever the browser is refreshed. When an agent refreshes the browser, the workflow engine sees the call as newly arrived or newly made. If an HTTP request action is part of the workflow, the HTTP request is sent when the agent refreshes the browser. Applications that receive the HTTP requests must account for this scenario. Otherwise, undesired results may occur.

An example of a workflow is a Call Arrival event that triggers an action that collects information from the dialog event (for example, the ANI or customer information) and displays a web page containing customer information.

You can filter trigger events by the value of the data that comes in the event. You can configure a workflow to execute if any conditions are met or if all conditions are met.

Individual conditions consist of the following:

- A piece of event data to be examined, for example, DNIS or call variables
- A comparison between the event data and entered values (for example, contains, is equal to, is not equal to, begins with, ends with, is empty, is not empty, and is in list)

When the trigger and its conditions are satisfied, a list of actions assigned to the workflow are executed. The actions execute in the order in which they are listed.

Workflows run only for agents and supervisors who are Finesse users. The Workflow Engine is a JavaScript library that runs client-side on a per-user basis within the Finesse desktop application. The desktop retrieves the workflows to execute for a user from the server when the user signs in or refreshes the browser.



Note Changes made to a workflow or its actions while a user is signed in are not automatically pushed to that user.

It is possible to set workflows, conditions, and actions that are contradictory so that a workflow or action cannot function. Workflows are not validated.

If multiple workflows are configured for a team, the Workflow Engine evaluates them in the configured order. The Workflow Engine ignores workflows with no actions. When the Workflow Engine finds a workflow with a matching trigger for the event and the workflow conditions evaluate to true, then that workflow is the one used and subsequent workflows in the list are not evaluated. Workflows with no conditions evaluate to true if the event matches the workflow trigger. All workflows are enabled by default. Only one workflow for a specific user can run at a time.

The Workflow Engine retrieves dialog-based variables used in workflow conditions from the dialog that triggered the workflow. If a variable is not found in the dialog, then its value is assumed to be empty.

The Workflow Engine executes the actions associated with the matched workflow in the order in which they are listed. The Workflow Engine executes actions in a workflow even if the previously executed action fails. Failed actions are logged.

The Finesse server controls which calls are displayed to the Finesse user. If the user has multiple calls, the workflow applies only to the first call that matches a trigger. If the first call displayed does not match any triggers but the second call does match a trigger, the Workflow Engine evaluates and processes the triggers for the second call.

A call is considered to be the first displayed call if it is the only call on the Finesse desktop when it appears. If two calls on a phone are merged (as they are in a conference call), then the first displayed call flag value of the surviving call is used.

If the user has a call when the user refreshes the browser, the Workflow Engine evaluates the call as it is. If the dialog data (call variable values) change, the data may not match the trigger and conditions of the original workflow. The data may match a different workflow or no workflows at all.

If the user has multiple calls when the user refreshes the browser, the Workflow Engine treats the first dialog received from the Finesse server as the first displayed call. This call is not necessarily the same call that was the first displayed call before the browser refresh. Dialogs received for any other call are ignored because they are not considered first displayed calls. If dialogs for more than one call are received before the Workflow Engine is loaded after the browser refresh, no dialogs are evaluated because none are considered first displayed calls.

Workflows run for both Finesse agents and supervisors. The team to which the supervisor belongs (as distinguished from the team that the supervisor manages) determines which workflows run for the supervisor. You may want to put the supervisors in their own team to keep agent workflows from being run for them.

Workflow Triggers and Outbound Calls



Note When you create a workflow specifically for Outbound Option calls, add a condition of BAStatus is not empty (except for the Workflow Trigger 'When a call arrives' as BAStatus will be empty at that point of time). This condition ensures that the workflow can distinguish Outbound Option calls from agent-initiated outbound calls.

The following table illustrates when workflows trigger in outbound call scenarios.

Workflow Trigger	Direct Preview Outbound Call	Progressive or Predictive Outbound Call
While previewing a call	When the agent previews the call (before the agent accepts or rejects the call).	Does not trigger.
When a call arrives	When the agent accepts the call.	Does not trigger.
When a call is answered	When the customer answers the call. If the agent conferences in another agent or transfers the call, the workflow triggers for the agent who is the recipient of the conference or transfer.	When the customer answers the call. If the agent conferences in another agent or transfers the call, the workflow triggers for the agent who is the recipient of the conference or transfer.
When a call is made	When the customer call is initiated.	When the customer call is initiated or when failover occurs during the call.
When a call ends	When the customer call ends.	When the customer call ends.

Add Browser Pop Workflow Action

The Browser Pop workflow action opens a browser window or tab on the user's desktop when workflow conditions are met.



Note Whether the action opens a new window or tab on the desktop depends on the target user's browser settings.

Procedure

- Step 1** In the Manage Workflow Actions gadget, click **New**.
The New Action area appears.
- Step 2** In the Name box, enter a name for the action.
Note Workflow action names are limited to 64 characters.
- Step 3** From the Type drop-down list, select **Browser Pop**.
- Step 4** From the Handled By drop-down list, select what will execute the action, either the Finesse Desktop or Other (a third-party gadget).
- Step 5** In the Window Name box, enter the name that serves as the ID of the window that is opened. Any action that uses this window name reuses that specific window.
Note Window names are limited to 40 characters, and can be blank. If you leave the window name blank, a new window opens every time the action runs.

- Step 6** Enter the URL of the browser window to open, and then click the tag icon at the right of the box and select one or more variables from the drop-down list to add tags.

Example:

```
http://www.google.com/search?q= callVariable1 & callVariable2
```

For every variable you select, you can enter test data in the Sample Data box. A sample URL is automatically built in the Browser URL box below the Sample Data area. To test the URL, click Open to open the URL in your browser.

Note Finesse does not validate the URL you enter.

- Step 7** Click **Save**.

Add HTTP Request Workflow Action

The HTTP Request workflow action makes an HTTP request to an API on behalf of the desktop user.

Procedure

- Step 1** In the Manage Workflow Actions area, click **New**.
The New Action area appears.
- Step 2** In the Name box, enter a name for the action.
A workflow action name can contain a maximum of 64 characters.
- Step 3** From the Type drop-down list, select **HTTP Request**.
- Step 4** From the Handled By drop-down list, select what will execute the action, the Finesse desktop or Other (a third-party gadget).
- Step 5** From the Method drop-down list, select the method to use.
You can select either PUT or POST.
- Step 6** From the Location drop-down list, select the location.
If you are making the HTTP request to a Finesse API, select **Finesse**. If you are making a request to any other API, select **Other**.
- Step 7** In the Content Type box, enter the content type.
The default content type is application/xml, which is the content type for Finesse APIs. If you are using a different API, enter the content types for that API (for example, application/JSON).
- Step 8** In the URL box, enter the URL to which to make the request. To add variables to the URL, click the tag icon at the right of the box and select one or more variables from the drop-down list.
- Note** The drop-down list contains variables from all the media channels.

Example:

/finesse/api/User/ dialogId  370093

Note The preceding example is the URL for a Finesse API. If you want to make a request to another API, you must enter the entire URL (for example, <http://googleapis.com>).

You can click the tag icon at the right of the box and select one or more variables from the drop-down list to add tags to the URL. In the preceding example, to add the dialogId, click the tag icon and select dialogId from the list.

Step 9 In the Body box, enter the text for the request. The body must match the content type (for example, if the content types is application/xml, the body must contain XML). To add variables to the body, click the tag icon at the right of the box and select one or more variables from the drop-down list.

Example:

To make an HTTP request to the Dialog - Start a recording API, enter the following into the Body box:

```
<Dialog>
<requestedAction>START_RECORDING</requestedAction>
<targetMediaAddress> extension  </targetMediaAddress>
</Dialog>
```

390214

To add the extension, click the tag icon and select extension.

For every variable you add, you can enter test data in the Sample Data box.

Step 10 Click **Save**.

Edit Workflow Action

Procedure

- Step 1** In the Manage Workflow Actions gadget, select the action that you want to edit.
- Step 2** Click **Edit**.
The Edit Action area appears.
- Step 3** Edit the fields that you want to change.
- Step 4** Click **Save**.

Delete Workflow Action

Procedure

- Step 1** In the Workflow Actions gadget, select the action that you want to delete.
The Delete Action area appears.

- Step 2** Click **Delete**.
- A question appears asking you to confirm that you want to delete the selected action.
- Step 3** Click **Yes** to confirm the deletion of the selected action.
-

Add Workflow

Procedure

- Step 1** In the Manage Workflows gadget, click **New**.
The New Workflow area appears.
- Step 2** In the Name box, enter the name of the workflow.
Note The name is limited to 40 characters.
- Step 3** In the Description box, enter a description of the workflow.
Note The description is limited to 128 characters.
- Step 4** In the When to perform Actions drop-down list, select the event that triggers the workflow.
- Step 5** In the How to apply Conditions box, select if all conditions are met, or if any conditions are met, and then click **Add Condition** to add up to five conditions.
Example:
For example, you can specify that the action is taken when CallVariable 1 is equal to 123 and CallVariable 2 begins with 2.
- Step 6** In the Ordered List of Actions area, click **Add** to open the Add Actions area. Click an action in this area to add it to the Ordered List of Actions.
- Step 7** Use the up and down arrows next to the Ordered List of Actions to move actions into the order in which they should be performed.
- Step 8** Click **Save**.
- Step 9** Assign the workflow to one or more teams.
Note A workflow does not run until it is assigned to a team.
-

Edit Workflow

Procedure

- Step 1** In the Manage Workflows gadget, select the workflow you want to edit.
- Step 2** Click **Edit**.
The Edit Workflow area appears.

- Step 3** Edit the fields that you want to change.
- Step 4** Click **Save**.
-

Delete Workflow

Procedure

- Step 1** In the Manage Workflows gadget, select the workflow that you want to delete.
The Delete Workflow area appears.
- Step 2** Click **Delete**.
A question appears asking you to confirm that you want to delete the selected workflow.
- Step 3** Click **Yes** to confirm the deletion of the selected workflow.
-

Manage Security

The Cisco Finesse administration console and agent desktop support secure HTTP (HTTPS). To access the administration console, enter the following URL in your browser (where *FQDN* is the fully qualified domain name of your primary server):

`https://FQDN:8445/cfadmin`

Similarly, agents and supervisors can access their desktops as follows:

`https://FQDN:8445/`

For HTTPS access, you can eliminate browser security warnings by choosing to trust the self-signed certificate provided with Finesse or uploading a CA certificate.

If you add custom gadgets that perform HTTPS requests to Finesse, you must add a certificate to the Finesse server for that gadget.



Note Wildcard Certificates are not supported in Unified CCX.

HSTS

Finesse supports HTTP Strict Transport Security (HSTS) for increased security. HSTS is automatically enabled, in which case the Finesse server sends HTTPS responses indicating to browsers that Finesse can only be accessed using HTTPS. If users then try to access Finesse using HTTP instead of HTTPS, the browser changes the connection to HTTPS before generating any network traffic. This functionality prevents browsers from sending requests to Finesse using unencrypted HTTP before the server can redirect them.

Trust Self-Signed Certificate

Trust the self-signed certificate provided by Finesse to eliminate browser warnings each time you sign in to the administration console or agent desktop.

If you uploaded a CA certificate, you can skip this procedure.

Procedure

Step 1 In your browser, enter the URL for the administration console (<https://FQDN of primary server:portnumber/cfadmin>) or the agent desktop (<https://FQDN of primary server>).

Step 2 Perform the steps in the following table for the browser you are using.

Option	Description
If you use Internet Explorer:	<ol style="list-style-type: none"> 1. A page appears that states there is a problem with the website's security certificate. Click Continue to this website (not recommended). This action opens the sign in page for the administration console (or agent desktop). A certificate error appears in the address bar of your browser. 2. Click Certificate Error, and then click View Certificates to open the Certificate dialog box. 3. In the Certificate dialog box, click Install Certificate. This action opens the Certificate Import Wizard. <p>Note If you use Internet Explorer 11 with Windows 8.1, you must add Finesse to your trusted sites before the Install Certificate option appears (Internet Options > Security > Trusted Sites > Sites).</p> <p>After you click Install Certificate, under Store Location, select Current User to install the certificate for the current user only, or select Local Machine to install the certificate for all Windows users who use this computer.</p> 4. Click Next. 5. Select Place all certificates in the following store, and then click Browse. 6. Select Trusted Root Certification Authorities, and then click OK. 7. Click Next. 8. Click Finish. 9. If a Security Warning dialog box appears that asks if you want to install the certificate, click Yes. A Certificate Import dialog box that states the import was successful appears. 10. Click OK. 11. Enter your credentials, and then click Sign In.
If you use Firefox:	<ol style="list-style-type: none"> 1. A page appears that states this connection is untrusted.

Option	Description
	<ol style="list-style-type: none"> <li data-bbox="548 279 1263 310">2. Click I Understand the Risks, and then click Add Exception. <li data-bbox="548 327 1523 390">3. In the Add Security Exception dialog box, ensure the Permanently store this exception check box is checked. <li data-bbox="548 411 1409 520">4. Click Confirm Security Exception. The page that states this connection is untrusted automatically closes and the administration console (or agent desktop) loads. <li data-bbox="548 541 1084 573">5. Enter your credentials, and then click Sign In. <li data-bbox="548 594 1523 741">6. For the agent desktop only, an error appears that states Finesse cannot connect to the Cisco Finesse Notification Service and prompts you to add a security exception for the certificates issued by the Finesse server. Click OK.

Obtain and Upload CA Certificate



Note This procedure only applies if you are using HTTPS.

This procedure is optional. If you are using HTTPS, you can choose to obtain and upload a CA certificate or you can choose to use the self-signed certificate provided with Finesse.

To eliminate browser security warnings each time you sign in, obtain an application and root certificate signed by a Certificate Authority (CA). Use the Certificate Management utility from Cisco Unified Communications Operating System Administration.

To open Cisco Unified Communications Operating System Administration, enter the following URL in your browser:

`https://hostname of primary UCCX server/cmplatform`

Sign in using the username and password for the Application User account created during the installation of Finesse.



Note You can find detailed explanations in the Security topics of the *Cisco Unified Communications Operating System Administration Online Help*.

Procedure

Step 1

Generate a CSR.

- a) Select **Security > Certificate Management > Generate CSR**.
- b) From the Certificate Name drop-down list, select **tomcat**.

- c) Click **Generate CSR**.

Note For information on updating Subject Alternate Names (SANs), refer to *Configuration Examples and TechNotes > Unified CCE Solution: Procedure to Obtain and Upload Third-Party CA certificates*.

Note To avoid certificate exception warnings, you must access the servers using the Fully qualified domain name (FQDN) name. Do not select "Multi-server (SAN)" as multi-server certificates is not supported with Cisco Finesse.

Step 2 Download the CSR.

- a) Select **Security > Certificate Management > Download CSR**.
- b) From the Certificate Name drop-down list, select **tomcat**.
- c) Click **Download CSR**.

Step 3 Generate and download a CSR for the secondary Finesse server.

To open Cisco Unified Operating System Administration for the secondary server, enter the following URL in the address bar of your browser:

`https://hostname of secondary UCCX server/cmplatform`

Step 4 Use the CSRs to obtain the CA root certificate, intermediate certificate, and signed application certificate from the Certificate Authority.

Note To set up the certificate chain correctly, you must upload the certificates in the order described in the following steps.

Step 5 When you receive the certificates, select **Security > Certificate Management > Upload Certificate**.

Step 6 Upload the root certificate.

- a) From the **Certificate Purpose** drop-down list, select **tomcat-trust**.
- b) In the **Upload File** field, click **Browse** and browse to the root certificate file.
- c) Click **Upload File**.

Step 7 Upload the intermediate certificate.

- a) From the **Certificate Purpose** drop-down list, select **tomcat-trust**.
- b) In the **Upload File** field, click **Browse** and browse to the intermediate certificate file.
- c) Click **Upload File**.

Step 8 Upload the application certificate.

- a) From the **Certificate Purpose** drop-down list, select **tomcat**.
- b) In the **Upload File** field, click **Browse** and browse to the application certificate file.
- c) Click **Upload File**.

Step 9 After the upload is complete, sign out from the Platform Admin page of Finesse.

Step 10 Restart Cisco Tomcat on the primary Unified CCX node.

Step 11 Restart Cisco Finesse Tomcat on the primary Unified CCX node.

Step 12 Restart Cisco Unified Intelligence Center Reporting Service.

Step 13 Restart Unified CCX Notification Service.

Note It is recommended to delete the self-signed certificates from the clients certificate store. Then close the browser, relaunch, and reauthenticate.

- Step 14** Upload the application certificate to the secondary Unified CCX server.
- You do not need to upload the root and intermediate certificates to the secondary Unified CCX server. After you upload these certificates to the primary server, they are replicated to the secondary server.
- Step 15** Restart Cisco Tomcat and Cisco Finesse Tomcat on the secondary Unified CCX node.

Add Certificate for HTTPS Gadget

Add a certificate for a secure HTTP (HTTPS) gadget to allow the gadget to load into the Finesse desktop and successfully perform HTTPS requests to the Finesse server.

This process allows HTTPS communication between the Finesse gadget container and the third-party gadget site for loading the gadget and performing any API calls that the gadget makes to the third-party server.



Note A gadget that loads using HTTPS may still use HTTP communication between that gadget and the application server where it resides. If all traffic must be secure, the gadget developer must ensure that HTTPS is used to make API calls to the application server.

The certificate must be signed with a common name. The gadget URL in the desktop layout must use the same name (whether it uses an IP address or a fully qualified domain name) as the name with which the certificate is signed. If the certificate name and the name in the gadget URL do not match, the connection is not trusted and the gadget does not load.

To find the certificate name, enter the gadget URL in your browser. Click the lock icon in the address bar and then click View Details. Look for the common name field.

The Finesse host must be able to resolve this name using the DNS host that was entered during installation. To verify that Finesse can resolve the name, run the CLI command “utils network ping <hostname>”.

Procedure

- Step 1** Download the tomcat.pem certificate from the third-party gadget host.
- Step 2** Upload the certificate to the designated Finesse system.
- Sign in to Cisco Unified Operating System Administration on the primary Unified CCX node (<https://FQDN/cmplatform>, where *FQDN* is the fully qualified domain name of the Unified CCX node).
 - Click **Security > Certificate Management**.
 - Click **Upload Certificate/Certificate Chain**.
 - From the Certificate Name drop-down list, select **tomcat-trust**.
 - Click **Browse** and navigate to the tomcat.pem file that you downloaded in the previous step.
 - Click **Upload File**.
- Step 3** Restart Cisco Tomcat on the primary Unified CCX node.
- Step 4** Restart Cisco Finesse Tomcat on the primary Unified CCX node.
- Step 5** After synchronization is complete, restart Cisco Tomcat on the secondary Unified CCX node.
- Step 6** Restart Cisco Finesse Tomcat on the secondary Unified CCX node.
-

Add Certificate for Multi-session Chat and Email

Add the SocialMiner certificate to the Finesse servers to allow communication between SocialMiner and Finesse. After you complete this procedure, agents must accept certificates in the Finesse desktop before they can use this gadget.

If SocialMiner is deployed with private certificates, agents cannot join chat rooms or reply to email messages until they accept the SocialMiner certificates. If the Manage Chat and Email gadget is deployed on the Manage Chat and Email tab of the Finesse desktop, agents may not realize that they need to accept the certificates. Have agents check the tab where the gadget appears when they sign in to Finesse to make sure that certificates are all accepted and the gadget loads correctly.

The steps to add a certificate for the Manage Chat and Email gadget are the same as the steps outlined in the procedure **Add Certificate for HTTPS Gadget**.



Note The procedure to add a certificate for an HTTPS gadget refers to the third-party gadget host. To add a certificate for chat and email, perform the applicable steps on the SocialMiner server.

Manage Finesse IP Phone Agent

Finesse IP Phone Agent

With Finesse IP Phone Agent (IPPA), agents and supervisors can access Finesse features on their Cisco IP Phones as an alternative to accessing Finesse through the browser. Finesse IPPA supports fewer features than the Finesse desktop in the browser, but it does allow agents and supervisors to receive and manage Finesse calls if they lose or do not have access to a computer.

Supervisor Tasks

Finesse IPPA does not support supervisor tasks such as monitor, barge, and intercept, but supervisors can sign in and perform all agent tasks on their IP Phones.

Administration Tasks

After you configure Finesse IPPA, the administration tasks that you perform for the Finesse desktop also apply for the supported Finesse IPPA features. For example, the Call Variables Layouts that you configure for the desktop also apply for Finesse IPPA, although the column layout is modified to fit the IP Phone screen.

Reason Code Limitations

- On the IP Phone, Finesse can display a maximum of 100 Not Ready, Wrap Up, or Sign Out reason codes. If more than 100 codes are configured, the phone lists the first 100 applicable codes (global codes or applicable team codes).
- When Finesse IPPA displays reason codes, some IP Phone models truncate the codes due to character length limitations on the phone. To ensure they meet your requirements, verify the display of the reason codes on all phone models in your environment.

HTTP Only

Finesse IPPA phone clients communicate with the Finesse server using HTTP only, whether or not HTTPS access is enabled on Finesse.

Failure Behavior

Unlike the Finesse desktop, the Finesse IP Phone Agent does not automatically failover to the alternate Finesse server. To resume normal operations in a failure scenario, the Finesse IPPA agents must exit from the current Finesse IP Phone service and manually sign in to another configured Finesse service that connects to an alternate Finesse server.

To ensure continued operations in a failure situation, you must configure at least two Finesse IP Phone services in Unified CM, each pointing to different Finesse servers.

One Button Sign In

With One Button Sign In, you can set up the Finesse IPPA phones with prepopulated agent ID, extension, and password. In this case, agents can sign in to Finesse on the IP Phone without credentials just by selecting Cisco Finesse from the Services menu.

Alternatively, you can set up One Button Sign In and prepopulate only a subset of agent credentials. For example:

- You can prepopulate only the agent ID and extension, forcing the agents to manually enter their password at sign-in for increased security.
- You can prepopulate only the extension, forcing agents to manually enter their ID and password at sign-in (useful for agents who share the same phone).

You can use Unified CM Administration to prepopulate the agent credentials, or you can set up the agents with access to the Unified CM Self Care Portal to prepopulate their own credentials.

The following table shows examples of how you can assign the responsibility of defining agent credentials to the administrator or the agent, or share that responsibility between them.

Example Set Up	Prepopulated in Unified CM Administration (by Administrator)	Prepopulated in Self Care Portal (by Agent)	Entered at Sign-In (by Agent)
Administrator populates the extension only	extension	-	id password
Administrator populates the ID and extension	id extension	-	password
Agents enter password only using Self Care Portal	id extension	password	-
Agents enter all credentials using Self Care Portal	-	id extension password	-

Example Set Up	Prepopulated in Unified CM Administration (by Administrator)	Prepopulated in Self Care Portal (by Agent)	Entered at Sign-In (by Agent)
Agents enter ID and extension only using Self Care Portal	-	id extension	password

Finesse IP Phone Service Subscription Options

To set up access to Finesse on agent IP phones in Cisco Unified Communications Manager, you must create the Finesse IP Phone service to which the phones can subscribe. To set up the Finesse service, you can choose one of the following options:

- Set up an enterprise subscription to automatically subscribe all IP phones in the cluster to the Finesse service. (Not supported with One Button Sign In.)
- Set up a manual subscription, and manually subscribe each IP phone to the Finesse service.
- Set up a manual subscription, and set up the agents with access to the Unified CM Self Care Portal to subscribe to the Finesse service themselves.

The following table lists the Finesse IPPA configuration procedures and indicates which procedures are required depending on the subscription option you choose.

Finesse IPPA Configuration Procedures	Enterprise Subscription	Manual Subscription	
		Administrator Manually Subscribes the Phones	Agents Manually Subscribe Their Phones Using the Self Care Portal
Set Up Application User, Web Access, and HTTPS Server Parameters, on page 385	Required	Required	Required
Configure Finesse IP Phone Service in Unified CM, on page 386	Required	Required	Required
One Button Sign In, on page 383	Not applicable	Required only with One Button Sign In	Required only with One Button Sign In
Subscribe Agent Phones to Manual Subscription Service, on page 390	Not applicable	Required	Optional. Allows the administrator to enter agent credentials for One Button Sign In.
Set Up Agent Access to the Self Care Portal, on page 391	Not applicable	Optional. Allows agents to enter their own credentials for One Button Sign In.	Required

Set Up Application User, Web Access, and HTTPS Server Parameters

To support Finesse IPPA functionality, you must configure an application user in Unified Communications Manager that is associated with all Finesse IPPA phones. And for proper Finesse IPPA operation, you must also set the Web Access and HTTPS Server parameters in Unified CM.

These steps are required for both manual and enterprise subscriptions.

Before you begin

Set up call capabilities for the agent phones in Cisco Unified Communications Manager.

Procedure

Step 1 Set the following parameters in Unified CM:

- Set the **Web Access** parameter to **Enabled**.
- Set the **HTTPS Server** parameter to **HTTP and HTTPS Enabled**.

To set these parameters in Cisco Unified CM Administration, use either of the following pages:

- Phone Configuration page (Product Specific Configuration portion of page): choose **Device > Phone**.
- Enterprise Phone Configuration page: choose **System > Enterprise Phone Configuration**.

Step 2 Configure an application user in Unified Communications Manager.

- a) In Cisco Unified Communications Manager Administration, select **User Management > Application User**.
- b) Click **Add New**.
- c) Under User Information, enter a user ID and password for the new user.
The password must be 95 characters or less and must contain ASCII characters only.
- d) Under Device Information, in the Available Devices pane, select all phones that Finesse IP Phone Agents will use and move them to the Controlled Devices pane using the arrows.
- e) Under Permissions Information, click **Add to Access Control Group**.
- f) From the list of search results, select **Standard CTI Enabled** and **Standard CTI Allow Control Of All Devices** and then click **Add Selected**.

The application user is added to the Standard CTI Enabled and Standard CTI Allow Control Of All Devices groups.

- g) Click **Save** at the bottom of the page.

Note In UCCX deployments, usage of an existing RMCM User for Finesse IPPA is known to cause problems in functionality, however, the physical phones must be associated with the RMCM User.

Step 3 Enter the application user's credentials in the Finesse IP Phone Agent Settings gadget.

- a) Sign in to the Cisco Finesse Administration Console.
- b) Choose **Settings > IP Phone Agent Settings**.
- c) Under Phone URL Authentication Settings, enter the same username and password that you entered in Unified CM for the application user.

The password must be 95 characters or less and must contain ASCII characters only.

- d) Click **Save**.
- e) Restart Cisco Finesse Tomcat on the primary Unified CCX node.
- f) After replication is complete, restart Cisco Finesse Tomcat on the secondary Unified CCX node.

For information to check the replication status, see Step 3 of **Prepare System for IP Address/host name Change**.

Note For Finesse IP Phone Agent (FIPPA) from 11.0 (1) onwards, the User Device Profile (UDP) must be associated with the FIPPA Application User along with the physical phones for agents using Extension Mobility. The Finesse Service URL must use the complete FQDN of the UCCX server.

Configure Finesse IP Phone Service in Unified CM

The following procedure describes the steps required for both manual and enterprise subscription.

Procedure

- Step 1** Log in to the Cisco Unified Communications Manager Administration using administrator credentials.
- Step 2** From the Communications Manager menu, select **Device > Device Settings > Phone Services**.
- Step 3** On the IP Phone Services page, click **Add New** to create a new IP phone service.
- Step 4** In the **Service Name** field, enter **Cisco Finesse** (or another service name that is appropriate for your environment).
- Step 5** In the **Service URL** field, enter:

```
http://Finesse FQDN:8082/fippa/#DEVICENAME#
```

 where *Finesse FQDN* is the fully qualified domain name (FQDN) of your primary Finesse server.
- Step 6** Ensure that the **Service Category** is set to **XML Service**, and the **Service Type** is set to **Standard IP Phone Service**.
- Step 7** Check the **Enable** check box.
- Step 8** Do one of the following:
 - To automatically subscribe all phones in the cluster to the Finesse service, check the **Enterprise Subscription** check box, and click **Save**. Agents and supervisors can now access Cisco Finesse by selecting it from the **Services** menu on subscribed IP phones.

Note One Button Sign In is not supported with enterprise subscriptions.

Figure 3: Finesse Service Configuration with Enterprise Subscription

The screenshot displays the Cisco Unified CM Administration interface for configuring an IP Phone Service. The page title is "IP Phone Services Configuration". A "Save" button is visible at the top left of the configuration area. Below this, the "Status" section shows "Status: Ready". The "Service Information" section contains the following fields:

Service Name*	Cisco Finesse
Service Description	Cisco Finesse
Service URL*	http://finesse FQDN, hostname, or IP address>:<port>
Secure-Service URL	
Service Category*	XML Service
Service Type*	Standard IP Phone Service
Service Vendor	
Service Version	

At the bottom of the "Service Information" section, there are two checked checkboxes: "Enable" and "Enterprise Subscription". A "Save" button is located at the bottom of the form, with a mouse cursor hovering over it.

- To subscribe only the desired phones to the Finesse service manually, leave the **Enterprise Subscription** check box unchecked and click **Save**.

Figure 4: Finesse Service Configuration Without Enterprise Subscription

Step 9 With a two-node Finesse setup (primary and secondary Finesse servers), perform the preceding steps again to create a secondary Finesse service that points to the secondary Finesse server. When you create the secondary service, note the following procedural differences:

- At Step 4, in the **Service Name** field, enter a name that distinguishes the secondary service from the primary service, such as **Cisco Finesse Secondary**.
- At Step 5, in the **Service URL** field, replace *Finesse FQDN* with the FQDN of the secondary server.

Note Since Finesse IPPA works only over HTTP, avoid using Secured Phone URL Parameters in Unified CM.

Add Service Parameters for One Button Sign In

With One Button Sign In, for any agent credentials that you want prepopulated, you must set up corresponding service parameters in Unified CM.

Only perform this procedure if you are setting up One Button Sign In. Otherwise, skip this procedure.

Procedure

- Step 1** From Cisco Unified Communications Manager Administration, select the Finesse phone service (under **Device > Device Settings > Phone Services**).
- Step 2** Click **New** to the right of the Parameters box.
The Configure Cisco IP Phone Service Parameter page displays.
- Step 3** Set up service parameters for the agent id, extension, and password credentials in accordance with the following table. Enter only the parameters that you want prepopulated for the agents. For each parameter, enter the required field values and click **Save**. To add additional parameters, click **Add New** and enter the required values.

Field	Description
Parameter Name	Enter one of the following parameter names as follows: <ul style="list-style-type: none"> • Id • extension • password <p>The values entered are the exact query string parameters used for the subscription URL.</p>
Parameter Display Name	Enter a descriptive parameter name; for example, id, extension, and password.
Default Value	Leave the default value blank for all parameters.
Parameter Description	Enter a description of the parameter. The user can access this text when they subscribe to the service.
Parameter is Required	If the administrator will prepopulate the parameter in Unified CM Administration, check the Parameter is Required check box. However, if the agent will prepopulate the parameter in the Self Care Portal, two options are available: <ul style="list-style-type: none"> • If the agents will prepopulate all defined parameters, check the Parameter is Required check box for each parameter. • If the agent and administrator will share the responsibility of prepopulating the parameters, set only the administrator-defined parameters as required. This configuration ensures that the administrator can save the subscription without prepopulating all parameters. In this case, the administrator first prepopulates the required parameters, and then the agents prepopulate the nonrequired parameters.
Parameter is a Password (mask contents)	Check this check box for the password only. This check box masks the password entries in the Self Care Portal, to display asterisks rather than the user entry.

When you save the last parameter, click **Save and Close**.

What to do next

You can prepopulate the agent credentials when you subscribe the agent phones, or the agents can prepopulate their own credentials using the Unified CM Self Care Portal.

Subscribe Agent Phones to Manual Subscription Service

If you set up the Finesse service as a manual subscription, you can subscribe the agent phones to the Finesse service in Unified CM and optionally define agent credentials for One Button Sign In.

If you prefer to allow the agents subscribe to the Finesse service using the Self Care Portal and prefer not to specify One Button Sign In credentials for the agents, you can skip this procedure.

Procedure

- Step 1** From the menu bar, select **Device > Phone**.
- Step 2** Select the phone that you want to subscribe to the Finesse service.
- Step 3** From the **Related Links** drop-down list on the upper right side of the window, select **Subscribe/Unsubscribe Services** and click **Go**.
The **Subscribed IP phone services** window displays for this phone.
- Step 4** From the **Select a Service** drop-down list, select **Cisco Finesse**.
- Step 5** Click **Next**.
- Step 6** (*Applicable for One Button Sign In only*) Enter values for any of the defined service parameters (id, password, and extension) that you do not want the agents to enter using the Self Service Portal or at sign-in.
- Step 7** Click the **Subscribe** button to subscribe this phone to the Cisco Finesse service.
The Cisco Finesse service displays in the **Subscribed Services** list.

Step 8 Click **Save**.

The subscribed agents or supervisors can now access Cisco Finesse by selecting it from the **Services** menu on their IP phones.

Step 9 With a two-node Finesse setup (primary and secondary Finesse servers), perform this procedure again to also subscribe the phones to the secondary Finesse service that points to the secondary Finesse server.

Set Up Agent Access to the Self Care Portal

You can optionally set up the agents with access to the Unified CM Self Care Portal to prepopulate their own credentials and to subscribe to the Finesse service.

If you are not setting up One Button Sign In, or not enabling the agents with access to the Self Care Portal, skip this procedure.

Procedure

Step 1 From the Unified CM Administration page, select **System > Enterprise Parameters**.

Step 2 Under the Self Care Portal Parameters, in the **Self Care Portal Default Server** field, select the IP address of the Unified CM Publisher server from the drop-down list and click **Save**.

Step 3 Select **User Management > End User**.

Step 4 Select the user that you want to set up with access to the User Care Portal.

Step 5 Under Permissions Information, click **Add to Access Control Group**.

Step 6 From the list of Access Control groups displayed, check **Standard CCM End Users** and click **Add Selected**.

Step 7 Click **Save**.

With access enabled to the Self Care Portal, agents can sign in to the portal at <http://<UCM address>/ucmuser> to subscribe to the Finesse service and enter their own credentials under **Phones > Phone Settings > Services**.



Note In a two-node Finesse setup with two services configured, the agents must enter their credentials on both the primary and secondary Finesse services.

CTI Failover

Finesse follows the active/standby model of Unified CCX. Finesse on the active Unified CCX node is "IN_SERVICE" and Finesse on the standby node is "OUT_OF_SERVICE".

A loss of connection to the CTI server can occur due to the following:

- Finesse misses three consecutive heartbeats from the connected CTI server.
- Finesse encounters a failure on the socket opened to the CTI server.
- The CTI server is not active on the node (Unified CCX is standby on the node).

When Finesse loses connection to the CTI server, Finesse attempts to reconnect until it makes a successful connection to the CTI server.

Cisco Finesse connects successfully through CTI to the node where the Unified CCX Engine is currently master. Agents should log in to Finesse on that node.

When the master Unified CCX Engine fails, Finesse establishes a connection with the Unified CCX Engine on the other node, and agents must log in to other node.

Finesse IP Phone Agent Failover

With a two-node Finesse setup (primary and secondary Finesse servers), if the server that an agent is connected to goes out of service, the Finesse IP Phone Agent (IPPA) displays a notification that the server is unavailable. Finesse IPPA continues to check whether the current Finesse server recovers its state, and notifies the agent if it reconnects.

Finesse IPPA attempts to reconnect to the server every 5 seconds and declares it out of service after three failed attempts. The total time to go out of service is approximately 15 seconds.

Unlike the Finesse desktop, Finesse IPPA does not check whether the alternate Finesse server is available. To connect to an alternate Finesse server, the agent must exit the current Finesse service, and manually sign in to the alternate Finesse service.

The Finesse IPPA failover logic has two triggers to detect failure:

- Finesse IPPA receives a SystemInfo event that the current server is `OUT_OF_SERVICE`.

Finesse IPPA polls SystemInfo every 5 seconds to check whether the Finesse server is in service. After three attempts, if the Finesse server is not in service, Finesse IPPA displays a server unavailable message to the agent.

- Finesse IPPA receives an XMPP connection notification that the XMPP connection is disconnected.

Finesse IPPA tries every 5 seconds to reconnect with the XMPP server. After three attempts, if the XMPP connection cannot be reestablished, Finesse IPPA displays a server unavailable message to the agent.

While the agent is still signed in to the current service, Finesse IPPA continues attempting to reestablish the connections with the Finesse and XMPP servers. If they both resume service, Finesse IPPA displays the sign-in screen and the agent can sign in again and continue as normal.

Otherwise, the agent must exit the current Finesse service and try to connect using an alternate Finesse service.

Finesse IPPA failover can occur for the following reasons:

- The Finesse Webapp Service goes down.
- The Cisco Finesse Notification Service goes down.
- The Finesse connection to the CTI server goes down.

Backup and Restore

The Unified CCX backup and restore component also backs up and restores Finesse configurations and data.

For more information about backup and restore, see at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-maintenance-guides-list.html>

Additional Language Support

For the list of languages that are supported by Finesse, see the Unified CCX Compatibility related information, located at:

<https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-device-support-tables-list.html>.

If you want to use the Finesse desktop interface in a language other than English, download and install the language COP file. For more information, see the “COP File” section of the *Cisco Unified Contact Center Express Install and Upgrade Guide*, located at:

<https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-express/products-installation-guides-list.html>.

Cisco Finesse Agent and Supervisor Desktop

Cisco Finesse Desktop provides easy access to the applications and information sources from a single customizable cockpit. Providing this unique access to information helps the agents deliver fast and accurate service.

For more information about Cisco Finesse Agent and Supervisor Desktop, see *Cisco Finesse Agent and Supervisor Desktop User Guide for Cisco Unified Contact Center Express* at https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_user_guide_list.html.

Call Manager-Based Call Recording Using Cisco MediaSense

Cisco Finesse in Unified CCX supports call recording using Cisco MediaSense.

MediaSense is the media-capture platform for Cisco Unified Communications.

To use MediaSense, perform the following procedures:

1. [Configure Cisco MediaSense with Unified CM, on page 393](#)
2. [Upload Cisco MediaSense Certificate to Unified CCX Server, on page 394](#)
3. [Upload MediaSense Recording License, on page 394](#)
4. [Configure MediaSense as a Recording Server, on page 395](#)
5. [Call Recording Through Workflow, on page 395](#)
6. [Configure MediaSense Search and Play Gadget, on page 396](#)



Note After performing all of the procedures, restart the Unified CCX server. In high availability deployment, restart both of the nodes.

Configure Cisco MediaSense with Unified CM

For information about configuring Cisco MediaSense with Unified CM, see the "Unified CM provisioning for Cisco MediaSense" section in the *Installation and Administration Guide for Cisco MediaSense* at https://www.cisco.com/en/US/products/ps11389/prod_installation_guides_list.html.

Upload Cisco MediaSense Certificate to Unified CCX Server

To establish connection with Cisco MediaSense securely, you must upload the Cisco MediaSense certificate to Unified CCX server.

Procedure

Step 1

Download the tomcat.pem certificate from the Cisco MediaSense server.

- a) Sign in to Cisco Unified Operating System Administration on the Cisco MediaSense host (<https://host or IP address/cmplatform/showHome.do>, where *host or IP address* is the hostname or IP address of the Cisco MediaSense server).

- b) Select **Security > Certificate Management**.

The **Certificate List** screen appears.

- c) Click **Find**.

A list of certificates appears.

- d) In the **Common Name** column, click the link of the certificate you want to download.

Note The Certificate Name must be tomcat-trust and the Certificate Type must be trusts-cert. The Certificate Details pop-up window appears.

- e) Click **Download .PEM File**.

A pop-up window appears.

- f) Select **Save File** radio button and Click **OK**.

The file gets saved on your system.

Step 2

Upload the certificate to the designated Unified CCX server.

- a) Sign in to Cisco Unified Operating System Administration on the primary Unified CCX node (<http://host or IP address/cmplatform>, where *host or IP address* is the hostname or IP address of the Unified CCX node).

- b) Choose **Security > Certificate Management**.

- c) Click **Upload Certificate/Certificate Chain**.

- d) From the Certificate Name drop-down list, select **tomcat-trust**.

- e) Click **Browse** and navigate to the tomcat.pem file that you downloaded in the previous step.

- f) Click **Upload File**.

For more information about certificate management, see the **Certificate Management Menu** section of the *Cisco Unified Operating System Administration Guide*, at https://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html.

Upload MediaSense Recording License

To use the MediaSense recording feature, you must purchase the Unified CCX recording license and upload it to the Unified CCX server.

For information about how to upload the license, see [Upload Licenses](#).

Configure MediaSense as a Recording Server

For information about configuring MediaSense as a recording server, see [Recording Configuration](#).

Call Recording Through Workflow

Use the HTTP Request action to invoke the Finesse Recording API after the call is answered.

Procedure

Step 1

Create an HTTP Request Recording action:

- a) In the Manage Workflow Actions area, click **New**.
- b) In the Name box, enter a name for the action.
- c) From the Type drop-down list, select **HTTP Request**.
- d) From the Handled By drop-down list, select **Finesse Desktop**.
- e) From the Method drop-down list, select **PUT**.
- f) From the Location drop-down list, select **Finesse**.
- g) In the Content Type box, enter **application/xml**.
- h) In the URL box, enter the following:


```
/finesse/api/Dialog/
```
- i) Click the tag icon at the right of the box and select **dialogId** to add it to the URL.
- j) In the Body box, enter the following:

```
<Dialog>
<requestedAction>START_RECORDING</requestedAction>
<targetMediaAddress>extension ✕ </targetMediaAddress>
</Dialog>
```

390214

To add the extension, click the tag icon and select **extension**.

Example:

Edit Action

Name

Type

Handled by

Method

Location

Content Type

URL

Body

372949

Step 2 Click **Save** to save workflow action.

Step 3 Add a Call Answered Workflow that executes the HTTP Request Recording action that you created in the previous step.

Note The Call Answered Workflow can be used to trigger an HTTP Request Recording action for inbound calls, agent-initiated outbound calls, and Predictive, Progressive, and Direct Preview outbound calls.

Step 4 Assign the workflow to the teams that you would like to record.

Configure MediaSense Search and Play Gadget

Before you begin

In the MediaSense server, you must have already configured Unified CM, Cisco Finesse, and MediaSense API.

Procedure

Step 1 Sign in to the Cisco Finesse administration console.

Step 2 Click the **Desktop Layout** tab.

Step 3 Find the MediaSense tab and gadget in the layout XML. Update the layout according to the comments in the layout.

```
<!--
The following Tab and Gadget are for MediaSense. They are *ONLY* supported with
MediaSense.
If you are not using MediaSense, then remove them. If you are using MediaSense and wish
to show
Recording Management, then do the following:
1) Remove these comments leaving the tab and gadget
2) Replace all instances of "my-mediasense-server" with the Fully Qualified Domain
```

Name of your MediaSense Server.

IMPORTANT NOTE:

- In order for this Gadget to work, you must have performed all documented prerequisite steps.

```

    <tab>
      <id>manageRecordings</id>
      <label>finesse.container.tabs.supervisor.manageRecordingsLabel</label>
      <gadgets>
<gadget>https://my-mediasense-server:8440/ora/gadget/MediaSenseGadget.xml</gadget>
      </gadgets>
    </tab>
-->

```

Note Replace all instances of `my-mediasense-server` with `https://<Fully Qualified Domain Name of your MediaSense Server>/ora/gadget/MediaSenseGadget.xml`.

Example:

```
https://abcd-ef-gh102.abc.com:8440/ora/gadget/MediaSenseGadget.xml
```

Step 4 Click **Save**.

Note The supervisor must log out and log in again to Cisco Finesse Supervisor Desktop to access MediaSense.

Step 5 Sign in to Cisco Finesse desktop as a supervisor and confirm that MediaSense gadget is accessible.



CHAPTER 23

Extend and Connect

- [Overview, on page 399](#)

Overview

With the Extend and Connect feature, Unified Contact Center Express agents and supervisors can work from a remote location using any device.

This feature gives the user (agent or supervisor) the flexibility to answer or make calls using devices that are connected to the PSTN or to mobile or other PBX networks. Extend and Connect functions by leveraging CTI remote device and persistent connection features of Cisco Unified Communications Manager (CUCM).

You can enable the Extend and Connect feature through the Cisco Jabber client by selecting only the Extend mode. This feature provide the following connections:

- CTI remote device—CTI remote devices are Unified CCX off-cluster devices for users that can be connected to any of the third-party networks, such as PSTN, mobile, or PBX.
- Persistent connection—Unified CCX users use this feature to set up a persistent call connection to remote destination. The advantage of this connection is that call establishment to the remote destination is much faster.

For more information about the Extend and Connect feature, see https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/admin/9_1_1/ccmfeat/CUCM_BK_C3E0EFA0_00_cucm-features-services-guide-91/CUCM_BK_C3E0EFA0_00_cucm-features-services-guide-91_chapter_0110010.html.

For more information about remote destination, see *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Server Configuration

To use the Extend and Connect, follow these server configuration steps:

Procedure

- Step 1** Perform the preinstallation tasks for IM and Presence nodes.

See "Perform pre-installation tasks for IM and Presence nodes" section in *Installing Cisco Unified Communications Manager* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-guides-list.html>

Step 2 Configure the Cisco IM and Presence node details on Call Manager before you install Cisco IM and Presence. From Cisco Unified CM Administration on the publisher node, choose **System > Server > Server Type** and then choose **CUCM IM and Presence**.

For information about server setup, see the *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 3 Install Cisco IM and Presence as a Call Manager subscriber.

For information about Cisco IM and Presence installation, see *Installing Cisco Unified Communications Manager* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-guides-list.html>

Step 4 Activate and start all the Cisco IM and Presence services in **Cisco Unified Serviceability**.

For information about activating services, see the "Activate services" section in *Installing Cisco Unified Communications Manager* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-installation-guides-list.html>

Step 5 Create Presence Redundancy groups in Call Manager.

- a) Choose **System > Presence Redundancy Groups > Add New**.
- b) Select Cisco IM and Presence, which you installed from the **Presence Server** drop-down list.

For information about the Presence redundancy group setup, see the "Presence redundancy group setup" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 6 Create UC services for CTI and IM Presence services in Call Manager.

Note You must select CTI and IM Presence services.

For information about creating UC services, see the "Add CTI service" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 7 Set up the service profile in Call Manager.

Note You must specify CTI and IM Presence service that you created in step 6.

For information about Service profile setup, see the "Service profile setup" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 8 Set up the end user in Call Manager.

Perform the following steps:

- a) Navigate to **User Management > End User**.
- b) Click the User ID that you want to set up.
- c) In the **Service Settings** section, select **Enable User for Unified CM IM and Presence (Configure IM and Presence in the associated UC Service Profile)** and then in **UC Service Profile**, select the profile that you created.
- d) In the **Mobile Information** section, select **Enable Mobility**.

- e) In **Permission Information**, add **Standard CCM End user** and **Standard CTI enabled**.
- f) Navigate to **User Management > Assign Presence End Users**.
- g) Click the User ID that you want to set up and then choose **Assign Selected Users**.

Step 9

Set up the trunk in Call Manager.

For information about the Trunk setup, see the "Trunk setup" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 10

Add the route pattern in Call Manager to route the calls to the remote device.

For information about route pattern setup, see the "Route pattern setup" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Step 11

Configure the Presence Gateway configuration on IM and Presence.

For information about configuring Presence Gateway on IM and Presence, see the "Configure Presence Gateway configuration on IM and Presence" section in *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

Persistent Connection

Unified CCX makes a persistent connection call to the agent's remote phone when an agent logs in to the agent desktop.

**Note**

The agent must first answer the persistent connection call and then change the status to Ready in the agent desktop to answer the incoming call.

After establishing the persistent connection, the call remains connected until the Maximum Call Duration timer expires or until the agent logs out, provided that no other problems occur in the remote destination network. You must specify to match the time on the Maximum Call Duration timer with your company shift time or specify more than your company shift time. If the persistent connection gets disconnected, it retries until the connection is established.

Add Customized Announcement for Persistent Connection Call

When an agent answers persistent connection call, make an announcement to the agent indicating that the persistent connection must be retained so that further calls from or to customers are established over persistent connection.

If the agent's remote device supports Caller ID display, it displays `EC Mode` as the caller name, which indicates a persistent connection call.

By default, the Cisco Unified Communications Manager has announcements created. Unified CCX, through JTAPI communication to Cisco Unified Communications Manager, calls the announcement ID **UCCX Persistent Connection Prompt**. You must create the **UCCX Persistent Connection Prompt** customized announcement ID.

To add the customized announcement ID, see the "Upload customized announcement" procedure in the *Cisco Unified Communications Manager Administration Guide* at <https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>. Enter **UCCX Persistent Connection Prompt** in the **Announcement Identifier** field.

**Note**

- Add a customized prompt to the created UCCX Persistent Connection Prompt, click **Upload Files** and select the desired prompt (.wav file).
- When the announcement is played, the Caller ID information on agent's remote phone changes to *Voice Connect*.
- If no announcement ID is created, Cisco Unified Communications Manager does not play any announcement to the agent when the persistent call is answered.

Incoming Call Notification

An agent can configure a sound alert to notify an incoming call when the customer calls are routed through Persistent Connection Calls of the agents.

To receive the sound alert, in Cisco Unified Communications Manager, configure the Announcement ID as **UCCX Customer Call Prompt**. When the Announcement ID is configured, Unified CCX plays the announcement before the call is routed to a desktop. If you do not configure an Announcement ID, Unified CCX does not play an announcement, and then the agent relies on desktop signal for an incoming call.

**Note**

Configure **UCCX Customer Call Prompt** in the English language in Cisco Unified Communications Manager.



APPENDIX **A**

Cisco Unified Contact Center Express License Packages

This appendix describes the features that are available with each Unified CCX license package.

- [Application Availability by License Package, on page 403](#)
- [Trigger Availability by License Package, on page 403](#)
- [Subsystem Availability by License Package, on page 404](#)
- [Unified CCX Services Availability by License Package, on page 404](#)
- [Unified CCX Component Availability by License Package, on page 405](#)

Application Availability by License Package

The following table lists the applications available with each license package:

Application	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
Cisco Script Application	X	X	X
Busy	X	X	X
Ring No Answer	X	X	X

Trigger Availability by License Package

The following table lists the triggers available with each license package:

Trigger	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
Unified CM Telephony	X	X	X
HTTP	X		X

Subsystem Availability by License Package

The following table lists the subsystems available with each license package:

Subsystem	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
CMT Subsystem	X	X	X
Core RTR Subsystem	X	X	X
Database Subsystem	X		X
eMail Subsystem	X		X
HTTP Subsystem	X		X
Unified CM Telephony Subsystem	X	X	X
MRCP ASR Subsystem	X		X
MRCP TTS Subsystem	X		X
Outbound Subsystem ⁴			X
RmCm Subsystem	X	X	X
Voice Browser Subsystem	X		X
RouteAndQueue Subsystem			X

⁴ The Unified CCX Outbound Preview Dialer feature does not require an additional license and it comes as part of the Premium license package.

Unified CCX Services Availability by License Package

The following table lists the Unified CCX Services available with each license package:

Unified CCX Services	None ⁵	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
Unified CCX Cluster View Daemon	X	X	X	X
Unified CCX Administration	X	X	X	X
Unified CCX Engine		X	X	X

Unified CCX Services	None ⁵	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
Cisco Unified CCX Database		X	X	X

⁵ Available upon installation, before license package is activated.

Unified CCX Component Availability by License Package

The following table lists the Unified CCX Component available with each license package:

Unified CCX Component	None ⁶	Unified IP IVR	Unified CCX Enhanced	Unified CCX Premium
Unified CCX Cluster View Daemon (CVD)	X	X	X	X
Unified CCX Engine		X	X	X
Unified CCX Repository Datastore		X	X	X
Unified CCX Historical Datastore		X	X	X
Unified CCX Configuration Datastore		X	X	X
Unified CCX Recording			X	X
Unified CCX Monitoring				X

⁶ Available upon installation, before license package is activated.



INDEX

A

- AAR [62, 129, 131, 264](#)
 - files [129](#)
 - group [62](#)
 - management [264](#)
 - uploading files [131](#)
- active server [5, 141, 142](#)
- administrator privileges [248](#)
- Administrator User Group [210](#)
- agent [32, 107, 225, 247, 249](#)
 - capabilities [247](#)
 - configuring [32](#)
 - configuring teams [107](#)
 - handling callbacks [225](#)
 - user privileges [249](#)
- All Users Group [210](#)
- alternative pronunciation [250](#)
 - Call by Name window [250](#)
 - Call by Name window, how to add [250](#)
- application [3, 6, 11, 46, 177, 183, 261, 403](#)
 - by package license [403](#)
 - configuration overview [11](#)
 - management [261](#)
 - report [177, 183](#)
 - server [3](#)
 - subsystem [6](#)
 - triggers [46](#)
- architecture, cluster [4](#)
- ASR [77, 78](#)
 - overview [77](#)
 - provisioning [78](#)
- Automated Alternate Routing, *See* AAR
- automatic failover [5, 141, 142](#)
- Automatic Speech Recognition, *See* ASR

B

- best practices [216](#)
 - security [216](#)
- busy application [44](#)
 - about [44](#)
 - provisioning [44](#)

C

- cache size [228](#)
 - contact records [228](#)
- call control channel [58](#)
- call waiting [221](#)
 - disabling in Unified CM [221](#)
- calling search space [62, 70](#)
 - ignore setting [70](#)
 - restrict users [70](#)
 - Unified CM Telephony trigger setting [70](#)
 - usage [62, 70](#)
- campaigns [220, 226](#)
 - Outbound subsystem [220](#)
 - time changes [226](#)
- capabilities [247](#)
 - users [247](#)
- channels [58](#)
 - provisioning [58](#)
- Cisco IP Agent and Supervisor desktops [1](#)
 - about [1](#)
- Cisco Media subsystem [6, 75](#)
 - about [6](#)
 - provisioning [75](#)
- Cisco Script Application [41, 42, 46](#)
 - adding [41, 42](#)
 - adding a trigger [46](#)
- Cisco Security Agent [218](#)
 - usage [218](#)
- Cisco TelePresence application [35](#)
- Cisco Unified CCX Administration web interface [1, 13, 14, 17, 18](#)
 - about [1, 13](#)
 - configuration web pages [17](#)
 - menu bar and menus [14](#)
 - using navigation bars [18](#)
- Cisco Unified CCX applications [41](#)
 - configuration overview [41](#)
- Cisco Unified CCX cluster [141](#)
 - profile [141](#)
- Cisco Unified CCX component availability [405](#)
 - by package license [405](#)
- Cisco Unified CCX components [1](#)
- Cisco Unified CCX Editor, about [1](#)
- Cisco Unified CCX Engine [6](#)
 - about [6](#)

- Cisco Unified CCX Engine subsystems **6**
 - Applications **6**
 - Cisco Media **6**
 - Core Reporting **6**
 - Database **6**
 - eMail **6**
 - HTTP **6**
 - MRCP ASR **6**
 - RmCm **6**
 - TTS **6**
 - Unified CM Telephony **6**
 - Cisco Unified CCX platform, about **1**
 - Cisco Unified CCX product family **3, 6**
 - about **3**
 - Unified CCX **3**
 - Unified IP IVR **3, 6**
 - Cisco Unified CCX Server, about **1**
 - Cisco Unified CCX supervisor web interface **249**
 - Cisco Unified CCX user options web interface **250**
 - Cisco Unified Communications components **1**
 - about **1**
 - Cisco IP Agent and Supervisor desktops **1**
 - Cisco Unified CCX Administration web interface **1**
 - Cisco Unified CCX Editor **1**
 - Cisco Unified CCX Server **1**
 - Cisco Unified Gateway **1**
 - historical reports database server **1**
 - MRCP ASR server **1**
 - MRCP TTS **1**
 - Unified CM **1**
 - Cisco Unified Communications Manager Administration **15**
 - navigating **15**
 - Cisco Unified IP IVR, about **6**
 - cluster **4, 5**
 - active server **5**
 - architecture **4**
 - cluster manager **5**
 - cluster view daemon **5**
 - cluster, definition **141**
 - CM Telephony **266, 267**
 - Call Control group configuration **266**
 - provider configuration **266**
 - triggers **267**
 - CMT dialog channels, about **75**
 - CMT dialog group **75**
 - about **75**
 - CMT dialog interactions, about **75**
 - competence level, about **94**
 - component, definition **141**
 - Computer Telephony Interface, *See* CTI
 - configuration **1**
 - datastore server **1**
 - configuration updates **226**
 - Outbound subsystem **226**
 - configuring, definition **7**
 - Contact Service Queues **98, 99, 101, 102, 103**
 - about **98**
 - configuration web page **101**
 - creating **99, 101**
 - deleting **103**
 - modifying **102**
 - contact summary report **217**
 - Outbound **217**
 - contacts report **178**
 - Core Reporting subsystem, about **6**
 - CPU utilization **50**
 - and VRU scripts **50**
 - CSQ **3, 98, 227, 271**
 - about **3**
 - creating **271**
 - Outbound percentage **227**
 - resource based **98**
 - skill based **98**
 - Subsystems menu **271**
 - CSQ Cisco Unified CCX Stats report **188**
 - CTI **6, 70**
 - managing clusters **6**
 - port device and route point **70**
 - custom **256**
 - classpaths for custom classes, steps, subsystems **256**
 - custom file configuration **256**
 - custom file configuration (System menu) **129**
- ## D
- daily purge schedule **166**
 - about **166**
 - configuring **166**
 - database **114**
 - maximum connections **114**
 - password **114**
 - username **114**
 - Database **218**
 - in service **218**
 - database connectivity **115**
 - polling **115**
 - Database subsystem **6, 111, 113, 114, 304**
 - about **6, 111, 113**
 - adding JDBC datasource **114**
 - configuration overview **113**
 - configuration web page **114**
 - configuring **113**
 - defining ODBC datasource **304**
 - supported Enterprise Databases **113**
 - datasource usage report **184**
 - datasource, adding **291**
 - Daylight Savings Time, *See* DST
 - db_cra database **226**
 - area code mapping **226**
 - default time zone **240**

- devices [404](#)
 - by package license [404](#)
- dialing functionality [217](#)
- dialing mode [217, 221](#)
 - direct preview [217, 221](#)
- Directory Number [29](#)
 - associations [29](#)
- Directory Number information [70](#)
- Do Not Call list [218](#)
 - Outbound subsystem [218](#)
- do_not_call list [218](#)
 - national [218](#)
- document file [125](#)
 - unzipping after upload [125](#)
- documents [122](#)
 - about [122](#)
- DST [239](#)
 - Outbound subsystem [239](#)

E

- eMail subsystem [6, 111, 116](#)
 - about [6, 111, 116](#)
 - configuring [116](#)
- enabling campaigns [238](#)
- engine tasks report [178](#)
- execute permission [212](#)

F

- failover [5](#)
 - automatic [5](#)
- feature, definition [141](#)
- files [119, 125](#)
 - adding zip [125](#)
 - managing for applications [119](#)

G

- general properties [222](#)
 - Outbound subsystem [222](#)
- geographic region [218](#)
 - Outbound support [218](#)
- grammars [121](#)
 - about [121](#)
- Group [210](#)

H

- handling callbacks [225](#)
- Help menu [315, 316, 317](#)
 - About [317](#)
 - Contents and Index [315](#)
 - For this Page [316](#)
- high availability [142](#)

- historical report user capabilities [247](#)
- historical report user privileges [248](#)
- historical reporting [1, 11](#)
 - client [1](#)
 - configuration overview [11](#)
- historical reporting database [164, 166, 168](#)
 - configuring daily purge schedule [166](#)
 - configuring database server [164](#)
 - file restore [168](#)
 - purge configuration [166](#)
- historical reports database [167](#)
 - purging manually [167](#)
- historical reports database server [1](#)
 - about [1](#)
- HTTP subsystem [6, 111, 112](#)
 - about [6, 111, 112](#)
 - configuration overview [112](#)
- HTTP triggers, adding [49](#)

I

- Integrated Service Router, *See* ISR
- international area codes [218](#)
 - mapping [218](#)
- invalid number [225](#)
 - handling callbacks [225](#)

J

- JDBC datasource [114](#)
 - adding [114](#)

L

- LDAP server information (System menu) [143](#)
- license [10, 70, 112, 113, 116, 403, 404, 405](#)
 - adding components [10](#)
 - application availability [403](#)
 - Cisco Unified CCX component availability [405](#)
 - database subsystem [113](#)
 - eMail subsystem [116](#)
 - HTTP subsystem [112](#)
 - product [70](#)
 - service availability [404](#)
 - subsystem availability [404](#)
 - trigger availability [403](#)
- logout [258](#)
- logout (System menu) [160](#)

M

- manage scripts [262](#)
- managing users [247](#)
- master service, definition [141](#)
- media channel [58](#)

missed callback [225](#)
 MRCP ASR [78, 79, 81](#)
 groups configuration [81](#)
 provider configuration [78](#)
 provisioning [78](#)
 server configuration [79](#)
 MRCP ASR server, about [1](#)
 MRCP ASR subsystem [6, 78](#)
 about [6](#)
 configuration overview [78](#)
 provisioning [78](#)
 MRCP TTS [83, 86](#)
 locals configuration [86](#)
 provider configuration [83](#)
 provisioning [83](#)
 MRCP TTS server, about [1](#)
 MRCP TTS subsystem [6, 83](#)
 about [6, 83](#)
 provisioning [83](#)
 multiple time zones [240](#)

N

national do_not_call list [218](#)
 navigating [15](#)
 Cisco Unified Communications Manager Administration [15](#)
 nickname [250](#)
 node, definition [141](#)

O

ODBC datasource [113, 304](#)
 about [113](#)
 defining [304](#)
 Outbound [221](#)
 licensed seat [221](#)
 Outbound subsystem [218](#)
 Do Not Call list [218](#)
 Outbound Subsystem [218](#)
 in service [218](#)
 Overall Unified CCX Stats report [184](#)

P

pending records [239](#)
 Outbound subsystem [239](#)
 pending state [226](#)
 Permissions [212](#)
 and User Groups [212](#)
 plug-ins [301](#)
 point system for provisioning channels [58](#)
 product [70](#)
 licenses [70](#)
 product license [112, 113, 116](#)
 database subsystem [113](#)

product license (*continued*)
 eMail subsystem [116](#)
 HTTP subsystem [112](#)
 profile, cluster [141](#)
 prompts [119, 126, 127, 128](#)
 about [119, 126](#)
 adding spoken name prompt [128](#)
 recording [127](#)
 provisioning call control groups [62](#)
 provisioning checklist [59](#)
 telephony and media resources [59](#)
 Provisioning checklist [20](#)
 Unified CCX subsystem [20](#)
 provisioning, definition [7](#)
 publisher [5](#)
 cluster manager [5](#)
 purge configuration [166](#)
 parameters [166](#)
 purging [165, 166](#)
 automatic [165](#)
 manual [166](#)
 purging, manually [167](#)

Q

queuing calls [74](#)
 with Unified CCX [74](#)

R

read permission [212](#)
 real-time reports [168, 171, 172, 173, 175, 177, 178, 183, 184, 188, 190, 199](#)
 about [168](#)
 application tasks [177](#)
 application tasks summary [177](#)
 available reports [168](#)
 contact summary [175](#)
 contacts [178](#)
 CSQ Cisco Unified CCX Stats [188](#)
 datasource usage [184](#)
 engine tasks [178](#)
 Overall Unified CCX Stats [184](#)
 printing reports [171](#)
 resetting statistics [172](#)
 Resource Unified CCX Stats [190, 199](#)
 running reports [171](#)
 sessions [183](#)
 setting appearance [173](#)
 setting options [172](#)
 viewing subreports [171](#)
 Refresh All button [18](#)
 Resource based CSQ [98](#)
 resource groups [91, 92, 271](#)
 creating [91, 271](#)
 deleting [92](#)

- resource groups (*continued*)
 - modifying name [91](#)
 - Resource Manager, about [3](#)
 - Resource pool selection criteria [104, 105](#)
 - between skills and groups [104](#)
 - within a CSQ [105](#)
 - Resource Unified CCX Stats report [190, 199](#)
 - resources [95, 97, 98, 270](#)
 - assigning to resource groups and skills in bulk [97](#)
 - assigning to resource groups and skills individually [95](#)
 - modifying [270](#)
 - removing skills from individual agents [98](#)
 - resynchronizing [60, 75](#)
 - Cisco JTAPI Client [60](#)
 - Unified CM Telephony data [60](#)
 - Unified CM Telephony information [75](#)
 - Ring-No-Answer application [45](#)
 - about [45](#)
 - provisioning [45](#)
 - RmCm provider [89](#)
 - about [89](#)
 - provisioning [89](#)
 - RmCm subsystem [218](#)
 - in service [218](#)
 - RmCm subsystem, about [6](#)
 - RNA application [45](#)
 - about [45](#)
 - provisioning [45](#)
 - Run As [215](#)
- S**
- scheduling callbacks [239](#)
 - Outbound subsystem [239](#)
 - script application [41, 42](#)
 - about [41, 42](#)
 - configuration overview [41, 42](#)
 - script management [50, 262](#)
 - script repository [41, 42](#)
 - scripts [50, 52, 53, 54, 55](#)
 - about [50](#)
 - deleting [55](#)
 - refreshing [53](#)
 - renaming [54](#)
 - viewing or downloading [52](#)
 - scripts, uploading [51](#)
 - security [216](#)
 - best practices [216](#)
 - servers [141, 142](#)
 - active and standby [141, 142](#)
 - service, definition [141](#)
 - Session Initiation Protocol, *See* SIP
 - sessions report [183](#)
 - SIP [6](#)
 - router integration [6](#)
 - Skill based CSQ [98](#)
 - skills [92, 93, 98, 272](#)
 - creating [92, 272](#)
 - deleting [93](#)
 - modifying name [93](#)
 - removing [272](#)
 - removing from individual agents [98](#)
 - spoken name prompt [128](#)
 - adding [128](#)
 - standby server [141, 142](#)
 - standby service, definition [141](#)
 - subscriber [5](#)
 - cluster manager [5](#)
 - subsystems [404](#)
 - by package license [404](#)
 - Subsystems menu [76, 265, 266, 267, 269, 270, 271, 272, 291, 293, 294, 295, 296](#)
 - Add a New Dialog Control Group [76](#)
 - adding HTTP triggers [294](#)
 - adding teams [272](#)
 - agent-based routing [272](#)
 - assigning skills [272](#)
 - Cisco Media [294](#)
 - CM Telephony [266](#)
 - CM Telephony Call Control group configuration [266](#)
 - CM Telephony provider configuration [266](#)
 - CM Telephony triggers configuration [267](#)
 - database configuration [291](#)
 - eMail [294](#)
 - HTTP [293](#)
 - MRCP ASR [295](#)
 - MRCP TTS [296](#)
 - resource group [271](#)
 - resources [270](#)
 - RmCm provider [272](#)
 - skills configuration [269](#)
 - teams [272](#)
 - Unified CCX [269](#)
 - supervisor [107](#)
 - configuring teams [107](#)
 - supervisor capabilities [247](#)
 - supervisor privileges [248](#)
 - System menu [129, 143, 160, 253, 256, 258](#)
 - about [253](#)
 - custom file configuration [129, 256](#)
 - LDAP Information [143](#)
 - logout [160, 258](#)
 - system parameters [143](#)
 - systems parameters (System menu) [143](#)
- T**
- team [107, 108, 109](#)
 - configuring [107](#)
 - creating a team [108](#)
 - deleting a team [109](#)

- team (*continued*)
 - making changes to agents on a team [109](#)
- Text-to-speech, *See* TTS
- time zone [225, 239](#)
 - determining local time [239](#)
 - handling callbacks [225](#)
- toolbar [18](#)
 - using [18](#)
- Tools menu [174, 175, 177, 178, 183, 184, 188, 190, 199, 201, 202, 204, 205, 301, 302, 306, 308, 309, 310, 311, 313, 316](#)
 - application task summary [177](#)
 - application tasks [177](#)
 - Clear Contact [202](#)
 - contact summary report [175](#)
 - contacts [178](#)
 - CSQ Unified CCX Stats [188](#)
 - datasource usage [184](#)
 - engine tasks [178](#)
 - file restore [308](#)
 - historical reporting [306](#)
 - Open Printable Report [202](#)
 - Options [205](#)
 - overall Unified CCX Stats [184](#)
 - overview [301](#)
 - password management [313](#)
 - plug-ins [301](#)
 - purge now [308](#)
 - purge schedule [308](#)
 - real-time reporting [302](#)
 - real-time snapshot config [302](#)
 - Refresh Connections [202](#)
 - report [174](#)
 - Reset All Stats [202](#)
 - Resource Unified CCX Stats [190, 199](#)
 - sessions [183](#)
 - Tools [201](#)
 - troubleshooting tips [316](#)
 - user configuration [308](#)
 - user management [309](#)
 - user management, Name Grammar Generation [310](#)
 - user management, Spoken Name Upload [311](#)
 - Views [204](#)
- Tools meny [205](#)
 - Settings [205](#)
- triggers [403](#)
 - by package license [403](#)
- triggers and applications [46](#)
- TTS [77, 83, 84](#)
 - default provider [84](#)
 - overview [77](#)
 - provisioning [83](#)
 - VXML applications [84](#)
- Unified CCX [3](#)
 - about [3](#)
- Unified CCX Administration [13](#)
 - connecting [13](#)
- Unified CCX components [3](#)
 - CSQ [3](#)
 - Resource Manager [3](#)
- Unified CCX Enhanced with CTI Option, about [3](#)
- Unified CCX Enhanced, about [3](#)
- Unified CCX Standard, about [3](#)
- Unified CM [28, 251](#)
 - connecting to web interface [28](#)
 - users [251](#)
- Unified CM telephony [59](#)
 - configuration [59](#)
- Unified CM Telephony [70](#)
 - trigger information [70](#)
- Unified CM Telephony information, resynchronizing [75](#)
- Unified CM Telephony subsystem [6, 59, 61, 62, 70, 218](#)
 - about [6](#)
 - configuration overview [59](#)
 - configuring Unified CM Telephony providers [61](#)
 - in service [218](#)
 - provisioning call control groups [62](#)
 - provisioning Unified CM Telephony trigger [70](#)
- Unified CM Telephony trigger [47](#)
 - adding [47](#)
- Unified CM Telephony triggers [74](#)
 - using with Unified CCX [74](#)
- Unified CM User Options page [251](#)
- Unified Communications Manager [29](#)
 - configure users [29](#)
- Unified ICME [6](#)
 - about [6](#)
- Unified ICME subsystem [111](#)
 - about [111](#)
- Unified IP IVR, about [3](#)
- uploading licenses [10](#)
- uploading scripts [51](#)
- User Groups [210, 212](#)
 - Administrator User Group [210](#)
 - and Permissions [212](#)
 - Child Groups [210](#)
 - Groups [210](#)
- User Permissions [212](#)
 - write, read, and execute [212](#)
- user roles [247](#)
- users [29, 215](#)
 - configuring in Unified Communications Manager [29](#)
 - Run As [215](#)

V

- virtual agents [35](#)
- virtual infrastructure [35](#)

U

- UNICODE [83](#)

voice gateways [1](#)
VRU scripts [50](#)
 uploading time [50](#)
VXML applications [84](#)
 default TTS provider [84](#)

W

wizards [18](#)
 using [18](#)

Wizards menu [297, 298](#)
 Application [297](#)
 RmCm [298](#)
wrap-up data [107](#)
 usage [107](#)
write permission [212](#)

Z

zip files, uploading [125](#)

