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

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

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

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

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

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

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: http://www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

© 2013-2014 Cisco Systems, Inc. All rights reserved.
## CONTENTS

### Preface

- Preface xx
- Audience xx
- Glossary xxii
- Conventions xxii
- Related Documents xxiii
- Documentation and Service Requests 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 8
  - Provision Telephony and Media Subsystems 8
  - Configure Unified CCX Subsystems 8
    - Provision Unified CCX Subsystem 9
    - Provision Additional Unified CCX Subsystems 9
  - View License Information 10
  - Upload Licenses 10
  - Configure Unified CCX Applications 11
    - Available Applications 11
    - Manage Scripts Prompts, Grammars, and Documents 12
  - Configure Unified CCX Historical Reporting 12
- Manage Unified CCX 13
CHAPTER 6

Telephony and Media Provision

1. Unified CCX Telephony and Media
2. Media Termination Groups
3. Channels Required to Process Calls
4. Provision Telephony and Media Resources
5. Provision Unified CM Telephony Subsystem
6. Resynchronize Cisco JTAPI Client
7. Resynchronize Unified CM Telephony Data
8. Configure Unified CM Telephony Provider
9. Add New Call Control Group
10. Add Unified CM Telephony Trigger
11. Additional Unified CM Telephony Information
12. Unified CM Telephony Triggers for Unified CCX Queuing
13. Unified CM Telephony Information Resynchronization
14. Cisco Media Subsystem
15. Add CMT Dialog Control Group
CHAPTER 8

Provision of Additional Subsystems 117

About Additional Subsystems 117
Provision of Unified ICME Subsystem 118

Configure General Unified ICME Information 119

ICME Configuration Web Page 119
Configure Unified ICME VRU Scripts 121

Provision of HTTP Subsystem 122

Configure HTTP Triggers 123
Provision of Database Subsystem 124

Database Subsystem Configuration 124
Add New Datasource 124

Datasource Configuration Web Page 125

Poll Database Connectivity 125

Provision eMail Subsystem 126

CHAPTER 9

Management of Prompts, Grammars, Documents, and Custom Files 129

Manage Prompt Files 129
Manage Grammar Files 131
Manage Document Files 132

Language Management 133
CHAPTER 10

Unified CCX System Management 149

Basic Terminology 149
High Availability and Automatic Failover 150
Network Partitions 151
Unified CCX CDS Information Management 151
Manage System Parameters 151
System Parameters Configuration Web Page 152
Unified CCX IP Address/hostname Management 156
Prepare System for IP Address/host name Change 157
IP Address Modification 158
Change IP Address for Server in Single-Node Deployment 158
IP Address Modification in High-Availability (HA) Deployment 160
Change IP Address for Publisher Server in HA Deployment 160
Change IP Address for Subscriber Server in HA Deployment 162

Host Name Modification 164
Change Host Name for Server in a Single-Node Deployment 165
Host Name Modification in High-Availability (HA) Deployment 166
Change Host Name for Publisher Server in HA Deployment 166
Change Host Name for Subscriber Server in HA Deployment 168

Verify Proper Function of System after IP Address/host name Change 170

Exit Unified CCX Administration 171

CHAPTER 11
Unified CCX Reporting 173

Reporting Administration on Unified CCX 173
Import of Stock Reports 173
Unified CCX Historical Reports 173
Unified CCX Historical Datstore 173
Historical Reporting Configuration 174
Configure Database Server Limits 174
View Historical Reports 175
Purge of Historical Data 175
Configure Automatic Purging 176
Configure Purge Schedule Configuration Parameters 176
Purge Manually 177
File Restore 178

Unified CCX Real-Time Reports 178
Available Unified CCX Real-Time Reports 178
Open Real-Time Reports 180
Run Reports 180
View Detailed Subreports 181
Print Reports 181
Reset Report Statistics 182
Clear Contact Option for Stuck Calls 182
Set Report Options 182
Set Report Appearance 183
Contents

Application Reporting User Interface 183
  Report Menu 184
    High Availability (HA) Setup 184
    Contacts Summary Real-Time Report 185
    Application Tasks Summary 186
    Application Tasks Real-Time Report 187
    Engine Tasks Real-Time Report 187
    Contacts Report 188
  Call Contacts Detailed Info Report 189
  Email Detailed Info Report 190
  HTTP Detailed Info Report 190
    Applications Report 192
    Sessions Report 192
    Data Source Usage Report 193
    Overall Cisco Unified Contact Center Express Stats Report 193
    CSQ Cisco Unified Contact Center Express Stats Report 197
    Preview Outbound Campaign Cisco Unified Contact Center Express Stats Report 198
    Chat CSQ Cisco Unified Contact Center Express Stats Report 200
    Chat Resource Cisco Unified Contact Center Express Stats Report 201
    Overall Chat Cisco Unified Contact Center Express Stats Report 201
    IVR Outbound Campaign Stats Report 203
    Overall IVR Outbound Stats Report 205
    Resource Cisco Unified Contact Center Express Stats Report 206
    Failover Behavior for Unified CCX Stats 208
  Tools Menu 208
    Reset All Statistics 208
    Open Printable Report 208
    Refresh Connections 208
    Clear Contact Menu 209
    Clear Stuck Calls from Contacts Real-Time Report 209
    Clear Stuck Calls from Overall Cisco Unified CCX Stats 209
    Clear Stuck Calls from CSQ Cisco Unified CCX Stats 209
  Views Menu 210
    Application Tasks 210
Contents

Contacts by Application Task ID 210
Engine Tasks by Application Task ID 210
  Contacts 211
  Applications 211
  Sessions 211
Contacts by Session ID 211
Detailed Info 211
  Settings Menu 211
  Options Menu 211
Reporting Administration on Unified Intelligence Center 212
  Overview 212
  Start Unified Intelligence Center 212
  Administrator Overview 213
  Security Overview 213
  User List 214
  Create a User 214
  User Groups 216
    About User Groups 217
    Create a User Group 217
  Manage User Permissions 218
    About Permissions 218
    User Roles and Permissions 219
    Assigned Group Permissions 220
    Assigned User Permissions 221
  Run As 221
  Audit Trail Logging in Cisco Unified Intelligence Center 222
    View Audit Trail Logging in Unified Intelligence Center 222
  Audit Trail Report 222
  Security Considerations 223

CHAPTER 12

Unified CCX Outbound Dialer Configuration 225
  Unified CCX Outbound IVR Dialer Types 225
  Outbound Feature for Unified CCX 226
    Outbound Characteristics 226
    Unified CCX Requirements 227

Cisco Unified Contact Center Express Administration Guide, Release 10.0(1)
Outbound Components 229
Supported Dialing Modes 229
  Direct Preview Dialing Mode 230
  Progressive Dialing Mode 230
    Functions of IVR-Based Progressive Campaign 231
  Predictive Dialing Mode 232
    Predictive Dialing Description 232
  Configure Outbound IVR Subsystem in Unified CCX 233
IVR Subsystem Time Detection 233
Configure Outbound Subsystem 234
RmCm and Outbound Subsystem Verification 234
Configure General Outbound Properties 235
  Callbacks 238
    Outbound Area Code Functionality 238
  Configuration Updates 239
  CSQ Agent Pool Allocation 239
Add New Campaign 240
Import Contacts for Campaign 245
Enable Campaigns 247
Add Area Codes 248
Communication with Agents Desktops 248
Agents Receive Outbound Calls 249
  Agent Allocation 249
  Customer Information Preview 249
  Exchange of Data with CAD 250
  Call Status Values 251
    Contact States Reset at Midnight 252
  Call Result Values 253
  Reclassification Status Behavior 254
  Skip-Next Behavior 255
  Skip/Reject Behavior 256
  Call Retrieval Priority 256
  Failover and System Restarts 256
Do Not Call Contacts 257
Manage Scripts 274
Prompt Management 274
Grammar Management 275
Document Management 275
AAR Management 276

CHAPTER 16  Subsystems Menu 277
Unified CM Telephony Menu 278
Unified CM Telephony Provider Configuration 278
Unified CM Telephony Call Control Group Configuration 279
Unified CM Telephony Triggers Configuration 279
Synchronize Unified CM Telephony Data 279
Unified CM Telephony Cisco JTAPI Resync 280
Unified CM Telephony Advanced Settings 280
RmCm Menu 281
Skill Configuration 282
Add New Skill 282
Modify Skills 282
Resources Configuration 282
Modify Resource 282
Resource Group Configuration 283
Add New Resource Group 283
Modify Existing Resource Groups 283
Contact Service Queues Configuration 283
Add a CSQ 283
RmCm Provider Configuration 284
Skills Configuration Assignment 284
Add Skills 284
Remove Skills 284
Remote Monitor Configuration 284
Assign Resources and CSQs to Remote Supervisor 285
Agent Based Routing Settings Configuration 285
Teams Configuration 285
Add New Team 285
Chat Menu Option 285
Chat Contact Service Queues 286
Cisco SocialMiner Configuration 287
Chat System Parameters 289
Chat Web Form List 290
Teams 291
Obtaining CA-Signed Certificate for Web Chat 291
Outbound Menu 292
General Configuration 292
Campaign Configuration 292
  Add New Campaigns 292
  Import Contacts 293
  Delete Contacts 293
Area Code Management 293
  Add New Area Code 293
Configure SIP Gateway 294
  SIP Gateway Configuration Web Page 294
Unified ICM Menu 296
  Unified ICME Configuration 296
  Unified ICME VRU Scripts 296
    Add New VRU Script 296
Database Menu 297
  DataSource 297
    New DataSource 297
    Add New Database Parameter 297
    Driver 297
    Add New Database Driver 298
HTTP Menu 299
  HTTP Configuration 299
  Add New HTTP Trigger 299
eMail Menu 299
Cisco Media Menu 300
MRCP ASR Menu 300
  MRCP ASR Provider 300
  MRCP ASR Servers 300
  MRCP ASR Dialog Groups 301
CHAPTER 17  Wizards Menu  303
Application Wizard  303
RmCm Wizard  304

CHAPTER 18  Tools Menu  307
Plug-Ins Menu  307
Real-Time Reporting Menu  308
Real-Time Snapshot Config Menu  309
Create System DSN for Wallboard  310
Wallboard Software in High Availability (HA) Deployment  312
Use Upgraded Wallboard Software with New Service in HA Deployment  312
Use Wallboard Software (without New Service) in HA Deployment  312
Historical Reporting Menu  313
Database Server Configuration  314
SMTP Configuration  314
Purge Schedule Configuration Option  315
Purge Now Option  315
File Restore Option  315
User Management Menu  315
User View Submenu  316
Name Grammar Generator Configuration  317
Spoken Name Upload Submenu  318
Administrator Capability View Menu  318
Supervisor Capability View Menu  318
Reporting Capability View Menu  319
Agent Capability View Menu  319
Password Management  319

CHAPTER 19  Help Menu  321
Contents and Index  321
CHAPTER 20

Cisco Mobile Skill Manager 325
Access Mobile Skill Manager 325
Adding Skills Using Cisco Mobile Skill Manager 326
Searching Skills Using Cisco Mobile Skill Manager 327
View Details of Resources Assigned to Supervisor 327
View Resources Assigned to Supervisor 328
Search Resources Using Cisco Mobile Skill Manager 328
Modify Resource Team 328
Assign Skill Competency to Resource 329
Unassign Skill Competency of Resource 329

CHAPTER 21

Unified CCX Web Chat 331
Unified CCX Web Chat 331

CHAPTER 22

Cisco Finesse 333
Introduction 333
Cisco Finesse Administration Console 334
Getting Started 334
Administration Tools 334
Cisco Finesse Administration Console 334
Sign In to Cisco Finesse Administration Console 334
Manage Call Variables Layout 335
Call Variables 335
Configure Call Variables Layout 336
Add ECC Variables to Call Variables Layout 336
Manage Desktop Layout 337
Finesse Desktop Layout XML 337
Default Layout XML 338
Update Default Desktop Layout 341
XML Schema Definition 344
Add Web Chat to Finesse 345
  Add Web Chat to the Default Desktop Layout 346
  Add Web Chat to a Custom Desktop Layout 348
  Add Web Chat to a Team Layout 350
Live Data Gadgets 352
  Add Live Data Gadgets to Desktop Layout 355
  Add Customized Live Data Gadgets to Desktop Layout 356
Manage Phone Books 357
  Phone Books and Contacts 357
  Add Phone Book 358
  Edit Phone Book 358
  Delete Phone Book 359
  Import Contacts 359
  Export Contacts 360
  Add Contact 360
  Edit Contact 361
  Delete Contact 361
Manage Reasons 361
  Not Ready Reason Codes 362
    Add Not Ready Reason Code 363
    Edit Not Ready Reason Code 363
    Delete Not Ready Reason Code 364
  Sign Out Reason Codes 364
    Add Sign Out Reason Code 365
    Edit Sign Out Reason Code 366
    Delete Sign Out Reason Code 366
  Wrap-Up Reasons 367
    Add Wrap-Up Reason 368
    Edit Wrap-Up Reason 368
    Delete Wrap-Up Reason 368
Manage Team Resources 369
  Team Resources 369
  Assign Phone Books and Reasons to Team 370
  Unassign Phone Books and Reasons from Team 371
  Assign Custom Desktop Layout to Team 371
Contents

Application Availability by License Package 395
Trigger Availability by License Package 396
Subsystem Availability by License Package 396
Unified CCX Services Availability by License Package 397
Unified CCX Component Availability by License Package 398
Preface

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

This chapter explains the following:

- Audience, page xxi
- Glossary, page xxii
- Conventions, page xxii
- Related Documents, page xxiii
- Documentation and Service Requests, page xxiii

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.

Glossary


Conventions

This manual uses the following conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
</table>
| **boldface** font | **Boldface** font is used to indicate commands, such as user entries, keys, buttons, and folder and submenu names. For example:  
  > - Choose **Edit > Find**.  
  > - Click **Finish**. |
| **italic** font | **Italic** font is used to indicate the following:  
  > - To introduce a new term. Example: A **skill group** is a collection of agents who share similar skills.  
  > - For emphasis. Example: **Do not** use the numerical naming convention.  
  > - A syntax value that the user must replace. Example: IF (condition, true-value, false-value)  
| **window** font | **Window** font, such as Courier, is used for the following:  
  > - Text as it appears in code or that the window displays. Example:  
    ```html`<html><title>Cisco Systems, Inc.</title></html>` |
| <>            | Angle brackets are used to indicate the following:  
  > - For arguments where the context does not allow italic, such as ASCII output.  
  > - A character string that the user enters but that does not appear on the window such as a password. |
Related Documents

<table>
<thead>
<tr>
<th>Document or Resource</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Troubleshooting tips for Unified CCX</td>
<td><a href="http://docwiki.cisco.com/wiki/Troubleshooting_Tips_for_Underiied_CCX_10.0">http://docwiki.cisco.com/wiki/Troubleshooting_Tips_for_Underiied_CCX_10.0</a></td>
</tr>
</tbody>
</table>

Documentation and Service Requests

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


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

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

- Unified CCX Components, page 1
- Unified CCX Product Family, page 3
- Unified CCX Cluster Architecture, page 4
- Unified CCX Engine, page 6
- Set Up Unified CCX, page 8
- Manage Unified CCX, page 13

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, Unified CM user integration, Cisco Unified Intelligent Contact Management Enterprise
(Unified ICME) translation-routing and post-routing 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 and Unified CCX Agent Desktop. 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), Repository Datastore (RDS), and Agent Datastore (ADS).

**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 the chat session. SocialMiner accepts the chat request, communicates with Unified CCX to allocate an agent for the chat and then establishes the chat session between agent and end user.

- 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.


- 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.

• Unified CCX Agent Desktop—Application program that Unified CCX agents run on their desktop computers to log in to the system, change Unified CCX state, and monitor status.

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

• Unified CCX Standard (designed for entry-level users)—Includes the steps necessary for creating basic Unified CCX applications, including IP Phone Agent (IPPA) and skills-based routing, and does not include Cisco Agent Desktop (CAD).

• Unified CCX Enhanced (designed for enterprise-level users)—Includes all functions of Unified CCX Standard, plus support for priority queuing. Includes a license to enable custom Java extensions.

• 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 IVR—You need to have a Unified CCX Outbound IVR license in addition to a Unified CCX Premium license to enable this feature. You can increase the number of ports for an existing Outbound IVR license. The Display License submenu option displays the licensed Outbound IVR ports and the sum of the dedicated Outbound IVR ports for all IVR campaigns that are running currently in your Unified CCX. The dedicated Outbound IVR port for a campaign is the number of IVR ports that you want to reserve for a campaign based on the 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.
The following figure shows the components of the CVD interaction with nodes.

Figure 1: 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.

Enterprise Server
Communicates data for screen pops to the Unified CCX Agent Desktop.

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.

Chat
Allows Unified CCX to configure and manage Web Chat.

Voice Browser
Manages Voice Browser functionality.

Unified CCX Voice over Internet Protocol (VoIP)
Enables remote recording and monitoring.

---

**Note**
Recording and monitoring over preconfigured SPAN port is not supported in high availability over WAN deployment of Unified CCX.
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 Agent/Supervisor Desktop.

- **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 queueing calls.

• **Resources**
  Agents that answer calls are also called *resources*. After you create a resource group, you must assign agents (resources) to that group. You can assign skills to agents if you have a Unified CCX Standard license.

• **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**
  (Unified CCX Standard license) 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.

• **Remote Monitoring**
  If you want to associate agents and CSQs that will be monitored by remote supervisors, you need to configure remote monitoring settings.

• **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 Unified ICME, HTTP, Database, and email features.

Provision the following subsystems:

• **Unified ICME**—The ICM subsystem communicates with Unified ICME software.

• **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 that 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 IVR license, this web page will display the number of licensed IVR ports for outbound and inbound and the dedicated ports for both outbound and inbound calls.

---

**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 12
• Wizards Menu, on page 303

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.

In addition, if your Unified CCX system is to be configured to interact with Unified IP IVR for Unified ICME (not with Unified CCX by way of the Unified Gateway), two extra applications are available: ICME post-routing applications and ICME translation-routing applications.
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**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Define the maximum number of database connections for report client sessions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Assign historical reporting capability to users.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Configure the Daily Purge Schedule and specify notification parameters.</td>
</tr>
</tbody>
</table>
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, page 15
• Cisco Unified CCX Administration Menu Bar and Menus, page 16
• Cisco Unified CCX Administration Navigation, page 17
• Unified CCX Configuration Web Pages, page 18

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 above-mentioned URL. 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.

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, 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, Cisco Unified Intelligence Contact
Management Enterprise (Unified ICME) software, Database, HTTP, 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.

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 Desktop Administrator** — Takes you to the main Cisco Desktop Administrator web page that is used to configure Enterprise Data, Personnel, Cisco Unified Presence Settings, and Agent Email Settings.
- **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.

---

**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 an 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 Desktop Administrator
- 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.

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 an 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://hostname or IP address:8445/cfadmin, where hostname or IP address is the hostname or IP address of the server.

For more information about Cisco Finesse Administration Console, see Cisco Finesse Administration Console, on page 334.

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 toolbar 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.

<table>
<thead>
<tr>
<th>Icon/Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy</td>
<td>Click this icon to copy the information in that specific row. <strong>Note</strong>: When you click <em>Copy</em>, the web page displays the copied configuration so you can make changes, if desired.</td>
</tr>
<tr>
<td>Delete</td>
<td>Click this icon to delete the information in that specific row.</td>
</tr>
<tr>
<td>Refresh</td>
<td>Click this icon to refresh the information in that specific row.</td>
</tr>
<tr>
<td>Refresh All</td>
<td>Click this button to refresh the information listed on this page.</td>
</tr>
</tbody>
</table>

## 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**.
Unified CCX Provision Checklist

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, page 21
- Provision Unified CCX, page 22
- Change Licensing Packages, page 23

Unified CCX

The Unified CCX system uses the Unified CCX subsystem as part of an ACD system to provide resource distribution and queueing 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- and agent-based routing. Unified CCX agent can be any one of the following:

- Cisco Finesse
• Cisco Agent Desktop (CAD)
• IP Phone Agent (IPPA)
• Extension Mobility (EM)

**Note**
Only CAD and IPPA agents support EM, Finesse agent does not support EM.

• Cisco Agent Desktop Business Edition (CAD-BE) Agent
• Supervisor (if the supervisor is taking calls)

**Note**
A supervisor who is not taking calls is not considered as 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:

<table>
<thead>
<tr>
<th>Step</th>
<th>Task</th>
<th>Unified CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Configure Unified CM users who will be agents in your Unified CCX system.</td>
<td>Provision Unified CM for Unified CCX, on page 25</td>
</tr>
<tr>
<td>Step 2</td>
<td>Provision resources information for Unified CCX telephony and media.</td>
<td>Provision Unified CM Telephony Subsystem, on page 65</td>
</tr>
<tr>
<td>Step 3</td>
<td>Provision RmCm Provider to allow RmCm Subsystem to be in service.</td>
<td>RmCm Provider Configuration, on page 94</td>
</tr>
<tr>
<td>Step 4</td>
<td>Create resource groups.</td>
<td>Resource Groups, on page 95</td>
</tr>
</tbody>
</table>
Change Licensing Packages

The following three license upgrade options are available for Unified CCX system:

- Standard to Premium
- Standard to Enhanced
- Enhanced to Premium

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

- **Standard to Premium or Enhanced**—Only Enhanced and Premium package licenses support Recording. When you upgrade to Enhanced or Premium license package, you need to manually change the Recording Count to a desired value to enable the recording functionality.

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

**Note**

Downgrade of license is not supported in Unified CCX.

**Procedure**

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.
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, page 25
- Modify AXL Information, page 26
- Modify Unified Communications Manager Telephony Information, page 27
- Modify RmCm Provider Information, page 29
- Unified Communications Manager for Unified CCX Configuration, page 30

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). 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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AXL Service Provider Configuration</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 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.  

**Note** 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.  

**Note** Make sure you configure multiple AXL providers running the AXL Service for a redundant system. |
| Cluster Wide Parameters | |
| User Name | 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 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:

a) Log in to Unified Communications Manager Administration web interface and update the password for the application user (AXL provider).

b) 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.

c) 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unified CM Telephony Subsystem—Unified CM Telephony Provider Configuration</strong></td>
<td></td>
</tr>
<tr>
<td>Selected CTI Managers</td>
<td>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. <strong>Note</strong> 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.</td>
</tr>
<tr>
<td>Available CTI Managers</td>
<td>Lists the CTI Managers in the cluster. Move to the opposite list box using the right and left arrows.</td>
</tr>
<tr>
<td><strong>Cluster Wide Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>User Prefix</td>
<td>The syntax of the User ID is: <code>&lt;userprefix&gt;_&lt;nodeid&gt;</code> For example, if you set this field to <code>cti_user</code>, the User ID for Node 1 will be <code>cti_user_1</code>. This is a mandatory field.</td>
</tr>
<tr>
<td>Password</td>
<td>Password you defined for the User ID in Unified Communications Manager. If a CTI Manager is already selected, the corresponding password is displayed in this field. This is a mandatory field.</td>
</tr>
<tr>
<td>Confirm Password</td>
<td>Reenter the password that you provided in the Password field. This is a mandatory field.</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RmCm Subsystems—RmCm Provider Configuration</td>
<td></td>
</tr>
<tr>
<td>Selected CTI Managers</td>
<td>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.</td>
</tr>
<tr>
<td>Note</td>
<td>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.</td>
</tr>
<tr>
<td>Available CTI Managers</td>
<td>Lists the CTI Managers in the cluster. Move to the opposite list box using the right and left arrows.</td>
</tr>
<tr>
<td>User ID</td>
<td>User prefix for the Unified Communications Manager User IDs to be created in Unified Communications Manager. 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.</td>
</tr>
<tr>
<td>Password</td>
<td>Password you defined for the User ID in Unified Communications Manager. 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.</td>
</tr>
<tr>
<td>Confirm Password</td>
<td>Reenter the password that you provided in the Password field. This is a mandatory field.</td>
</tr>
</tbody>
</table>
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**

**Step 1**  From a web browser on any computer on your network, enter the following URL:  

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.

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:

<table>
<thead>
<tr>
<th>System\Components</th>
<th>Reserved words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CCX Web Chat</td>
<td>admin</td>
</tr>
<tr>
<td>Cisco Finesse</td>
<td>admin, finesse, xmpprootowner, presencelistener</td>
</tr>
<tr>
<td>Cisco Unified Intelligence Center</td>
<td>cuicnodewatchuser, cuicpresenceuser</td>
</tr>
</tbody>
</table>

- 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.
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 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 Security 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 Agent Desktop, see the 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.

Note
In Unified CCX, this operation is called "associating a device."

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

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.

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:

Procedure

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:

a) From the Device Information pane, click **Device Association**. The User Device Association page opens.

b) 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.

c) 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.

d) 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.
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, CAD, CTI, and Unified IP IVR with Cisco Unified Communications Manager and providing the entire solution on one server.

Note


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.
  - Due to the unavailability of third-party call control, Cisco Supervisor Desktop (CSD) features, Barge-in, and Intercept are not supported.
- You will not be able to use the call control Cisco Agent Desktop (CAD) features (Hold, Unhold, Answer, Transfer, Conference, Make Call, and Touch Tone). Be sure to remove or disable these features from CAD as specified in Step 4 in the following procedure.
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.

**Step 4** Customize the Cisco Agent Desktop workflow groups (see the *Cisco Desktop Administrator Users Guide*).
   **Tip** All the Cisco Agent Desktop call control buttons must be disabled because third-party call control will not be available for the Cisco TelePresence integration with Unified CCX.

### 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)] for more information.

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 5 After installing Unified CCX, follow these steps from the User Configuration page in Unified CCX Administration:
   a) 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.
   b) Click the left arrow (<) to move the selected user to the Cisco Unified CCX Administrator list.
   c) 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.
   d) 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:
   a) 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.
Configure Tool for Auto-Registered Phones Support (TAPS)
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 63)
- Provision your Unified CCX subsystem, if required (see Provision of Unified CCX, on page 93)
- Provision additional subsystems, if required (see Provision of Additional Subsystems, on page 117)

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

- About Unified CCX Applications, page 41
- Application Triggers, page 52
- Script Management, page 57

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
- Remote Monitoring

If Unified CCX is integrated with Unified ICME, you will also need to configure one or both of the following application types:
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.

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/custcsw/ps1846/products_implementation_design_guides_list.html. this repository provides some examples of scripting techniques that can leverage unified ccx abilities.

Note

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.
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application. This is a mandatory field.</td>
</tr>
<tr>
<td>ID</td>
<td>Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field. <strong>Note</strong> The Historical Reporting feature uses this ID to identify this application.</td>
</tr>
<tr>
<td>Maximum Number Of Sessions</td>
<td>The maximum amount of simultaneous sessions (instances) that the application can handle. This is a mandatory field. <strong>Note</strong> The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance.</td>
</tr>
</tbody>
</table>
### Add New Cisco Script Application

<table>
<thead>
<tr>
<th><strong>Field</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
</table>
| Script          | **Note** This field is available only for Cisco Script Application type. This is a mandatory field. Perform one of the following actions:  
• 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.  
**Note** 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.  
• Click **Edit**, enter the script name in the dialog box, and click **OK**. The User Prompt dialog box closes, and the name you entered appears in the Script field.  
**Note** 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.  
**Note** For the Busy and Ring-No-Answer application types, this field is only visible when you click **Show More**.                                                                                     |
| Enabled         | Click the required radio button to accept (**Yes** = default) or reject (**No**)  
**Note** For the Busy and Ring-No-Answer application types, this field is only visible when you click **Show More**.                                                                                     |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Default Script | **Note** This field is available only for Cisco Script Application type.  
The default script executes when an error occurs with the configured script application that causes it to abort.  
Perform one of the following actions:  
• 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.  
• Click **Edit**, specify a script in the dialog box that appears, and click **OK**. |

**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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application. This is a mandatory field.</td>
</tr>
<tr>
<td>ID</td>
<td>Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>The Historical Reporting feature uses this ID to identify this application.</td>
</tr>
<tr>
<td>Maximum Number Of Sessions</td>
<td>The maximum amount of simultaneous sessions (instances) that the application can handle.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance.</td>
</tr>
</tbody>
</table>

The following fields are displayed only on click of **Show More** button.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Use the Tab key to automatically populate this field.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Click the required radio button to accept - <strong>Yes</strong> (the default).</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application. This is a mandatory field.</td>
</tr>
<tr>
<td>ID</td>
<td>Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.</td>
</tr>
</tbody>
</table>
|                           | **Note**  
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.  
**Note**  
The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance. |
| Description               | Use the Tab key to automatically populate this field.                                                  |
| Enabled                   | Click the required radio button to accept - **Yes** (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.

**Configure Unified ICME Post-Routing Application**

The Unified ICME Post-routing application comes with Unified IP IVR.
These applications use the Unified CCX server as a queue point for Unified ICME. In Unified ICME post-routing, the Unified IP IVR system receives calls directly from Unified CM, which sends the call to the post-routing route point on the Unified CCX system.

If you configure this route point to run an initial application, such as an application to welcome the caller and collect an account number, the Unified CCX system notifies the Unified ICME software about the call, and then waits for further instructions. If you do not configure an initial script, the Unified CCX system informs the Unified ICME software about the call, but takes no other action.

After notification, the Unified ICME system runs a script, which can be composed of many different call-handling steps, including three commands that can be sent to the Unified CCX system:

- **Connect**—This request is automatically sent by Unified ICME whenever an agent is available and the call can be connected to that agent.
- **Release**—This request releases the call.
- **Run VRU Script**—This request runs the VRU script.

**Note** Before you can configure a Unified ICME post-routing application, you must first upload any VRU scripts that the application will need.

**Before You Begin**

To configure a Unified ICME post-routing application, you will need to perform the following tasks:

- Add a Unified ICME post-routing application. In addition to configuring general information such as name and ID, you must specify the script on which the Unified ICME post-routing application is based.
- Add a Unified CM Telephony trigger to the Unified ICME post-routing application. The Unified ICME post-routing application is invoked by a Unified CM Telephony trigger. The Unified ICME post-routing application does not support HTTP triggers.

To configure the Unified CCX server with the post-routing application and to add a Unified CM Telephony trigger, 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 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** From the Application Type drop-down menu, choose Unified ICME Post-Routing. The Unified ICME Post-Routing configuration web page opens.

**Step 4** Specify the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application.</td>
</tr>
<tr>
<td>Description</td>
<td>Use the Tab key to automatically populate this field.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
ID | Accept the automatically-generated ID, or enter a unique ID. This ID is the service identifier that will be reported with the call back to Unified ICME.
Maximum Number Of Sessions | The maximum amount of simultaneous sessions (instances) that the application can handle. **Note** The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance.
Enabled | Click the required radio button to accept - Yes (the default).
Timeout (in seconds) | The maximum amount of time (in seconds) that the system will wait to invoke the application before rejecting a contact.
Initial Script | (Drop-down list) Choose a script to run when the Unified CCX receives a call. This script can be used to acquire initial digits from the caller and report the information to Unified ICME as part of the notification of the incoming call. This capability allows Unified ICME to correctly choose a Unified ICME script to serve the call.
Default Script | (Drop-down list) Choose a script to run to route a call to a default treatment if the following occurs:
  - System error
  - Request by Unified ICME

**Step 5**  
Click **Add**.  
The Unified ICME Post-Routing 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**  
Your next step is to add a trigger for the application.

### Configure Unified ICME Translation-Routing Application

The Unified ICME Translation-routing application comes with Unified IP IVR. You must configure these applications when the Unified CCX server is used as a queue point for a Unified CCX solution in which calls are expected to be routed by the Unified ICME to the Unified CCX server.

The call attributes will be reported as part of a configured translation-route on the Unified ICME.
Before you can configure a Unified ICME translation-routing application, you must first upload any VRU scripts that the application will need.

**Before You Begin**

To configure the Unified ICME translation-routing application, you will need to perform the following tasks:

- Add a Unified ICME translation-routing application.
  In addition to configuring general information such as name and ID, you must specify the script on which the Unified ICME translation-routing application is based.
- Add a Unified CM Telephony trigger to the Unified ICME translation-routing application.
  The Unified ICME translation-routing application is invoked by a Unified CM Telephony trigger, and does not support HTTP triggers.

To configure the Unified CCX server with a Unified ICME translation-routing application and to add a Unified CM Telephony trigger, complete the following steps:

**Procedure**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>From the Unified CCX Administration menu bar, choose Applications &gt; Application Management. The Application Management web page opens, displaying the details of existing applications, if any.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Click 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. The Add a New Application web page opens.</td>
</tr>
<tr>
<td>Step 3</td>
<td>From the Application Type drop-down menu, choose Unified ICME Translation-Routing. The Unified ICME Translation-Routing configuration web page opens.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Specify the following fields:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application.</td>
</tr>
<tr>
<td>Description</td>
<td>Use the Tab key to automatically populate this field.</td>
</tr>
<tr>
<td>ID</td>
<td>Accept the automatically-generated ID, or enter a unique ID.</td>
</tr>
<tr>
<td></td>
<td>This field corresponds to the service identifier of the call reported to</td>
</tr>
<tr>
<td></td>
<td>the Unified ICME and configured in the Unified ICME translation route.</td>
</tr>
<tr>
<td>Maximum Number Of</td>
<td>The maximum amount of simultaneous sessions (instances) that the application</td>
</tr>
<tr>
<td>Sessions</td>
<td>can handle.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> The limit for the maximum number of simultaneous remote monitoring</td>
</tr>
<tr>
<td></td>
<td>sessions is 16, but the actual number depends on CPU and memory resources.</td>
</tr>
<tr>
<td></td>
<td>Entering a number that is too high can result in unacceptable system</td>
</tr>
<tr>
<td></td>
<td>performance.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Click the required radio button to accept - <strong>Yes</strong> (the default).</td>
</tr>
</tbody>
</table>
Configure Remote Monitoring Application

The Remote Monitoring application comes with Unified CCX Premium systems. You must configure Remote Monitoring applications when you want to use the Remote Monitoring feature to allow a supervisor to monitor an agent’s conversation.

Procedure

**Step 1** From the Unified CCX Administration menu bar, choose **Applications > Application Management** and click **Add New**. The Add a New Application web page opens.

**Step 2** Choose **Cisco Script Application** from the Application Type drop-down menu and click **Next**. The Cisco Script Application web page appears.

**Step 3** Specify the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A name for the application. This is a mandatory field.</td>
</tr>
<tr>
<td>ID</td>
<td>Accept the automatically-generated ID, or enter a unique ID. This is a mandatory field.</td>
</tr>
</tbody>
</table>

**Note** The Historical Reporting feature uses this ID to identify this application.

---

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeout (in seconds)</td>
<td>The maximum amount of time (in seconds) that the system will wait to invoke the application before rejecting a contact.</td>
</tr>
</tbody>
</table>
| Default Script      | (Drop-down list) Choose a script to run to route a call to a default treatment if the following occurs:  
• System error  
• Request by Unified ICME |

---

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

The Unified ICME Translation Routing 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.
Field | Description
--- | ---
Maximum Number of Sessions | The maximum amount of simultaneous sessions that monitoring sessions allow. This is a mandatory field. **Note** The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance.

Script | Select a customized Remote Monitor script or *rmon.aef* from the drop-down list. **Note** A new set of fields appears for a remote monitoring script.

Description | Use the Tab key to automatically populate this field.

Enabled | Click the required radio button to accept - **Yes** (the default).

Default Script | Accept **System Default**. The default script is executed if an error occurs with the configured application script.

**Step 4** Click **Add**. The Remote Monitoring web page refreshes, displaying the following message below the Status bar and the **Add New Trigger** hyperlink appears on the left navigation bar:

*The operation has been executed successfully*

Your next step is to 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 74 (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.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td>The relative URL For example: /hello</td>
</tr>
</tbody>
</table>
**Field** | **Description**
---|---
Language | Perform one of the following actions:
  - Choose a default language from the drop-down list.
  - Click **Edit**, specify a default language in the dialog box that appears, and click **OK**.
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 - **Yes** (the default).

**Note**  
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**  
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td>The relative URL. For example: /hello</td>
</tr>
<tr>
<td>Language</td>
<td>Perform one of the following actions:</td>
</tr>
<tr>
<td></td>
<td>• Choose a default language from the drop-down list.</td>
</tr>
<tr>
<td></td>
<td>• Click Edit, specify a default language in the dialog box that appears, and click OK.</td>
</tr>
<tr>
<td>Application Name</td>
<td>Choose the name of the application from the drop-down list.</td>
</tr>
<tr>
<td>Maximum Number Of Sessions</td>
<td>The maximum amount of simultaneous sessions that can be served by the HTTP subsystem for this trigger.</td>
</tr>
<tr>
<td>Idle Timeout (in ms)</td>
<td>Maximum amount of time (in milliseconds) that the system will wait to invoke the application before rejecting a contact.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Click the required radio button to accept - Yes (the default)</td>
</tr>
<tr>
<td>Note</td>
<td>If you disable the trigger, the user receives an error message when browsing to the defined trigger URL.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folder Path</td>
<td>The level of the directory that is currently selected in the folder drop-down list.</td>
</tr>
<tr>
<td>Name</td>
<td>The name of the script.</td>
</tr>
<tr>
<td>Note</td>
<td>Click the icon in front of the script name to download the script file.</td>
</tr>
<tr>
<td>Size</td>
<td>The size of the script file prefixed with KB. The file size is converted from bytes to KB.</td>
</tr>
<tr>
<td>Note</td>
<td>This column is usually blank on the root page as the items on this page are usually folders.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
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.
**Caution** | 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 default folder.
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 59
- Refresh Bulk Scripts, on page 59

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

ℹ️ 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.

ℹ️ 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.*
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, page 63
- Provision Unified CM Telephony Subsystem, page 65
- Additional Unified CM Telephony Information, page 78
- Cisco Media Subsystem, page 80
- ASR and TTS in Unified CCX, page 81

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.
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.

**Note**

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

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.

**Note**

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

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.

**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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Provision a Unified CM Telephony trigger. Unified CM Telephony triggers invoke application scripts in response to incoming contacts.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Resynchronize Unified CM Telephony versions.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Choose Subsystems &gt; Cisco Unified CM Telephony &gt; Cisco JTAPI Resync from the Unified CCX Administration menu bar.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Field Heading</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Unified CM Telephony Provider</td>
<td>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 System &gt; Cisco Unified CM Configuration web page.</td>
</tr>
</tbody>
</table>
**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 System > Cisco Unified CM Configuration web page.  
*Note* 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:
<table>
<thead>
<tr>
<th>Page Area</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Group Information             | Group ID     | 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.  
**Note** 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. |
|                               | Description  | Description of the Group ID. Press the Tab key to automatically populate the Description field.                                                                                                                                                                                                                                           |
| Group Information (continued) | Number of CTI Ports | Number of CTI Ports assigned to the call control group. This is a mandatory field.  
If you have a Premium license with an Outbound IVR 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.  
**Note** If this field is set to $<n>$, the system creates $<n>$ ports for each Unified CCX Engine node (node in which Unified CCX Engine component is enabled). |
| Media Termination Support      | Group Type   | Enables the auto-creation of media termination groups. This is a mandatory field.  
Yes = Provides automatic media termination if the CTI port group is successful.  
No = Media termination port group is not created (default).                                                                                                                                                                                                       |
|                               |              | 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 IVR license on top of the premium license in your Unified CCX.  
**Note** The existing call control groups will have this value as inbound after an upgrade from Unified CCX versions prior to 9.0(1). |
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.

The CTI ports for this port group is restricted to a maximum of 5 characters and has the following format:

\(<deviceprefix>_\langledirectoryno\>\)

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.

**Select Server for Telephony Port Group Configuration** (displayed only in a HA over WAN deployment).

<table>
<thead>
<tr>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directory Number Information</strong></td>
</tr>
<tr>
<td><strong>Device Name Prefix</strong></td>
</tr>
<tr>
<td>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. The CTI ports for this port group is restricted to a maximum of 5 characters and has the following format: (&lt;deviceprefix&gt;_\langledirectoryno&gt;) 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select Server</strong></td>
</tr>
<tr>
<td>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. 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 <strong>Select Server</strong> field), it will be applicable only to the ports specific to the selected node. But, if you update any configuration data above the <strong>Select Server</strong> field, it will be applicable for the ports in both the nodes except for the <strong>Number of CTI Ports</strong> field. You need to ensure that the values in <strong>Number of CTI ports</strong> 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 <strong>Add</strong> 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 <strong>Number of CTI Ports</strong> field and click <strong>Update</strong> to ensure the number of CTI ports for both the nodes are the same. After you configure the data for the selected node and click <strong>Add</strong> or <strong>Update</strong>, the updated configuration information will be saved. For detailed information on behavior in HA over WAN scenario, refer to the <a href="http://www.cisco.com/en/US/products/sw/custsww/ps1846/products_implementation_design_guides_list.html">http://www.cisco.com/en/US/products/sw/custsww/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.</td>
</tr>
</tbody>
</table>
### Directory Number Information

<table>
<thead>
<tr>
<th>Page Area</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Starting Directory Number</td>
<td>A unique phone number. The value can include numeric characters and special characters (#) and (*). 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.</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>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.</td>
</tr>
</tbody>
</table>

### Device Pool

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Note</td>
<td>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 Synchronize Unified CM Telephony Data, on page 279.</td>
</tr>
</tbody>
</table>

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 Select Server field), it will be applicable only to the ports specific to the selected node. But, if you update any configuration data above the Select Server field, it will be applicable for the ports in both the nodes except for the Number of CTI Ports field.

| Note                       | You need to ensure that the values in Number of CTI ports 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 Add 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 Number of CTI Ports field and click Update to ensure the number of CTI ports for both the nodes are the same. |
### DN Calling Search Space

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.

For more information, see the.

### Location

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 `HUB_NONE` means that the location feature does not keep track of the bandwidth that this Cisco Unified Communications phone consumes.

### Advanced Directory Number Information (only available if you click Show More)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Directory Number (continued) | 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:  
  • If the device is not capable of handling the Unicode strings  
  • If the locals on endpoint devices do not match  
  • If the Unicode string is not specified |
| Redirect Calling Search Space| A collection of partitions that are searched to determine how a redirected call is routed.  
  Redirect Calling Search Space options:  
  **Note**  
  **DN Calling Search Space** is deprecated. Use **Calling Party** or **Redirect Party** instead.  
  • **DN Calling Search Space**—This option enables the CTI Port to use its directory number CSS when performing a redirect / consult transfer.  
  • **Calling Party**—This option enables the CTI Port to use the calling party's CSS when performing a redirect / consult transfer.  
  • **Redirect Party**—This option enables the CTI Port to use the CTI Route Point's CSS when performing a redirect / consult transfer. |
| Media Resource 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.  
If you choose `<none>`, Unified CM uses the Media Resource Group that is defined in the device pool. |
<table>
<thead>
<tr>
<th>Page Area</th>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory Number Setting</td>
<td>Voice Mail Profile</td>
<td>A list of profiles defined in the Voice Mail Profile Configuration. The first option is &lt;None&gt;, which is the current default Voice Mail Profile that is configured in the Voice Mail Profile Configuration.</td>
</tr>
<tr>
<td>Presence Group</td>
<td></td>
<td>See the <em>Cisco Unified Communications Manager Administration Guide</em> for detailed information on how to configure presence groups.</td>
</tr>
<tr>
<td>Require DTMF Reception</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>AAR Group</td>
<td></td>
<td>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 &lt;None&gt; specifies that no rerouting of blocked calls will be attempted.</td>
</tr>
<tr>
<td>User Hold Audio Source</td>
<td></td>
<td>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).</td>
</tr>
<tr>
<td>Network Hold Audio Source</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Call Forward and Pickup Settings</td>
<td>Call Pickup Group</td>
<td>The number that can be dialed to answer calls to this directory number in the specified partition.</td>
</tr>
<tr>
<td></td>
<td>Display</td>
<td>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). Leave this field blank to have the system display the extension.</td>
</tr>
<tr>
<td></td>
<td>External Phone Number Mask</td>
<td>Phone number (or mask) that is used to send Caller ID information when a call is placed from this line. You can enter a maximum of 24 number, the international escape character +, *, # and &quot;X&quot; 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.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Point</td>
<td>Available CTI route point, which is the directory number associated with the trigger.</td>
</tr>
<tr>
<td>Application</td>
<td>Application name to associate with the trigger.</td>
</tr>
<tr>
<td>Sessions</td>
<td>Maximum number of simultaneous calls that the trigger can handle.</td>
</tr>
<tr>
<td>Enabled</td>
<td>True if the trigger is enabled; False if the trigger is disabled.</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Directory Information</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Directory Number          | 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 (*).  
  • Supports only route point directory numbers and Finesse agent and supervisor extensions.  
  • Does not support directory number for a Call Control Group configuration.  
  • Does not support outbound and Cisco Agent Desktop.  

  **Note**  
  • +1234 and 1234 are two different directory numbers.  
  • The square brackets ([ ]) enclose a range of values.  
  • For more information, see the "Wildcards and Special Characters in Route Patterns and Hunt Pilots" section in the .  

  **Examples:**  
  • Valid directory numbers—+1223* or *#12#*  
  • Invalid directory numbers—91X+ or +12345  

  **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.  

<table>
<thead>
<tr>
<th><strong>Trigger Information</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Choose the default language to associate with the incoming call when the application is started from this drop-down menu.</td>
</tr>
</tbody>
</table>

  **Note**  
  To add a Language option, click **Edit** button. The User Prompt dialog box opens. Enter a locale string value and click **OK**. 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.  

| Application Name        | From the drop-down menu, choose the application to associate with the trigger.                                                               |
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Name</td>
<td>A unique identifier for this device, consisting of alphanumeric characters, dots, dashes, or underscores.</td>
</tr>
<tr>
<td>Description</td>
<td>A descriptive name for the CTI route point.</td>
</tr>
<tr>
<td>Call Control Group</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Advanced Configuration** (available only if you click **Show More**).

#### Advanced Trigger Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled</td>
<td>Radio buttons to choose the required option:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Yes</strong>—enable the trigger (default)</td>
</tr>
<tr>
<td></td>
<td>• <strong>No</strong>—disable the trigger.</td>
</tr>
<tr>
<td>Maximum Number of Sessions</td>
<td>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.</td>
</tr>
<tr>
<td>Idle Timeout (in ms)</td>
<td>The number of milliseconds (ms) the system should wait before rejecting the Unified CM Telephony request for this trigger.</td>
</tr>
<tr>
<td>Override Media Termination</td>
<td>Radio buttons to choose the required options:</td>
</tr>
<tr>
<td></td>
<td><strong>Yes</strong>—Override media termination.</td>
</tr>
<tr>
<td></td>
<td><strong>No</strong>—Enable media termination (default).</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Yes</strong>, two panes open:</td>
</tr>
<tr>
<td></td>
<td>• Selected Dialog Groups displays the default or selected group.</td>
</tr>
<tr>
<td></td>
<td>• Available Dialog Groups lists the configured dialog.</td>
</tr>
</tbody>
</table>

**CTI Route Point Information**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alerting Name ASCII</td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>• If the device is not capable of handling the Unicode strings</td>
</tr>
<tr>
<td></td>
<td>• If the locals on endpoint devices do not match</td>
</tr>
<tr>
<td></td>
<td>• If the Unicode string is not specified</td>
</tr>
</tbody>
</table>
### Field

<table>
<thead>
<tr>
<th><strong>Device Pool</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Location</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The total bandwidth that is available for calls to/from this location. A location setting of HUB_NONE indicates that the locations feature does not keep track of the bandwidth used by this route point.</td>
</tr>
</tbody>
</table>

### Directory Number Settings

<table>
<thead>
<tr>
<th><strong>Partition</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The partition to which the Directory Number belongs. The Directory Number field value must be unique within the partition that you choose. If you do not want to restrict access to the Directory Number, select &lt;None&gt; as the partition setting.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Voice Mail Profile</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A list of profiles defined in the Voice Mail Profile Configuration. The first option is &lt;None&gt;, which is the current default Voice Mail Profile that is configured in the Voice Mail Profile Configuration.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Calling Search Space</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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. 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 .</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Calling Search Space for Redirect</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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. 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. Calling Search Space for Redirect options:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Default Calling Search Space</strong>—CSS of the calling device</td>
</tr>
<tr>
<td></td>
<td>- <strong>Calling Address Search Space</strong>—CSS of the calling device</td>
</tr>
<tr>
<td></td>
<td>- <strong>Route Point Address Search Space</strong>—CSS of the CTI Route Point (Trigger)</td>
</tr>
</tbody>
</table>
### Field	| Description
---|---
Presence Group	| A list of groups to integrate the device with the iPass server. The device/line information is provided for integrating applications.

### Call Forward and Pickup Settings

**Forward Busy**

Check one of the following options:

- **Voice Mail**—Check this box to use settings in the Voice Mail Profile Configuration window.
- **Note**
  
  When this box is checked, Unified CM ignores the settings in the Destination box and Calling Search Space.
- **Destination**—To use any disable phone number, including an outside destination.
- **Calling Search Space**—To apply the above setting all devices that are using this directory number.

**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**

Phone number (or mask) that is used to send Caller ID information when a call is placed from this line.

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** 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 79
- Unified CM Telephony Information Resynchronization, on page 79
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupID</td>
<td>The unique Group ID associated with the media.</td>
</tr>
<tr>
<td>Description</td>
<td>CMT group description.</td>
</tr>
<tr>
<td>Note</td>
<td>The ID in this field need not necessarily match the CMT group ID.</td>
</tr>
<tr>
<td>Channels</td>
<td>Number of channels associated with the group.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group ID</td>
<td>A Group ID value unique within all media group identifiers, including ASR group identifiers. This is a mandatory field.</td>
</tr>
<tr>
<td>Description</td>
<td>Description for the Cisco Media Termination Dialog group.</td>
</tr>
<tr>
<td>Number of Licensed IVR ports</td>
<td>Number of licensed IVR ports. Display only.</td>
</tr>
<tr>
<td>Maximum Number Of Channels</td>
<td>Maximum number of channels associated with this group. This is a mandatory field.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> 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.</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider Name</td>
<td>Enter the name of the MRCP ASR provider supported by Unified CCX.</td>
</tr>
<tr>
<td>Number of Provider Licenses</td>
<td>The number of ASR port licenses purchased from the ASR vendor.</td>
</tr>
<tr>
<td>Grammar Variant</td>
<td>Vendor-specific grammar setting. Valid options:</td>
</tr>
<tr>
<td></td>
<td>• Nuance Open Speech Recognizer servers version 9.0 and above (OSR 3.1.x)</td>
</tr>
<tr>
<td></td>
<td>• Nuance 8.5 and below version ASR servers (Nuance)</td>
</tr>
<tr>
<td></td>
<td>• IBM WVS ASR servers (2003 SISR)</td>
</tr>
</tbody>
</table>

**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.
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:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Name</td>
<td>Host name or IP address in which the ASR server software is installed.</td>
</tr>
<tr>
<td>Note</td>
<td>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.</td>
</tr>
<tr>
<td>Provider</td>
<td>The MRCP ASR Provider to which this server is associated.</td>
</tr>
<tr>
<td>Port</td>
<td>TCP port numbers used to connect to a MRCP server</td>
</tr>
<tr>
<td></td>
<td>• OSR 3.1x—4900</td>
</tr>
<tr>
<td></td>
<td>• 2003 SISR—554</td>
</tr>
<tr>
<td></td>
<td>• Nuance—554</td>
</tr>
<tr>
<td>Status</td>
<td>Status or state of the subsystem.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Name</td>
<td>Host name or IP address of the server where the MRCP ASR server software is installed.</td>
</tr>
<tr>
<td>Provider Name</td>
<td>Select the name of the MRCP ASR Provider to which this server is associated from this drop-down list.</td>
</tr>
</tbody>
</table>
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:

- OSR 3.1x—4900
- 2003 SISR—554
- Nuance—554

Languages supported by the ASR Provider. Select a language (or multiple languages) from the drop-down list and click Add Language; the selected language appears in the Enabled Language list.

Note Use the check box to disable/enable a language.

**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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group ID</td>
<td>Identifier for the group.</td>
</tr>
</tbody>
</table>
This webpage also displays the Number of Licensed IVR Channels.

**Step 2** Click 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 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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Description of this dialog group.</td>
</tr>
<tr>
<td>Provider</td>
<td>Name of the MRCP ASR provider.</td>
</tr>
<tr>
<td>Channels</td>
<td>Maximum number of sessions.</td>
</tr>
</tbody>
</table>

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

**Field** | **Description**
---|---
Group ID | Associated group ID.
Description | Description of this dialog group.
Tip | 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.
### Field | Description
--- | ---
Maximum Number Of sessions | Maximum number of sessions associated with this dialog group. **Note** 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. **Caution** 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. 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.
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:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Computer Name | Host name or IP address of the server in which the TTS server software is installed.

Note: 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:

- MRCP Server
- Nuance Vocalizer
- Scansoft Realspeak

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Name</td>
<td>Host name or IP address of the server the MRCP TTS server software is installed.</td>
</tr>
<tr>
<td>Provider Name</td>
<td>Select the name of the MRCP TTS Provider to which this server is associated from this drop-down list.</td>
</tr>
</tbody>
</table>
| 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:

- MRCP Server - 554
- Nuance Vocalizer - 554
- Scansoft Realspeak - 4900 |
Languages supported by the TTS Provider. Select a language (or multiple languages) from the drop-down list and click **Add Language**; the selected language appears in the Enabled Language list.  

**Note** Use the check box to disable/enable a language.

---

**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.
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 65).

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:

- Considerations, page 93
- RmCm Provider Configuration, page 94
- Resource Groups, page 95
- Skills Configuration, page 96
- Agent Configuration, page 98
- Contact Service Queue Configuration, page 102
- Remote Monitoring Use and Configuration, page 110
- Configure Agent-Based Routing, page 112
- Teams Configuration, page 113
- Unified Gateway Auto-configuration Details, page 115

Considerations

- If configuration changes are done using multiple browser tabs, then the changes might not sync to Unified Intelligence Center as expected.
- If Unified CCX to Unified Intelligence Center sync fails due to Cisco Tomcat, then an alert is not raised. Alert will be logged in the MADM logs and syslogs.
• If a user ID is changed in Unified Communications Manager, the old user ID login to Unified Intelligence Center will work while the login session is active.

• If a supervisor has to access Unified Intelligence Center Live Data reports, an extension must be assigned to the supervisor.

**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:


---

**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, real-time reporting, Cisco Agent/Supervisor Desktop.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary RmCm Provider</td>
<td>The host name or IP address of the server, running CTI Manager (Unified CM that runs CTI Manager).&lt;br&gt;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.</td>
</tr>
<tr>
<td>Secondary RmCm Provider</td>
<td>The host name or IP address of the secondary RmCm Provider.</td>
</tr>
<tr>
<td>User ID</td>
<td>The RmCm user ID.</td>
</tr>
</tbody>
</table>
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.

**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**

1. **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).

2. **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.

3. **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”).

4. **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 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 (|),

---

1 Unified Communications users in a Unified CM deployment refers to a Unified CM user.
tilde (~) 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.

- 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 Agent 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Name</td>
<td>Name of the agent (display only).</td>
</tr>
<tr>
<td>Resource ID</td>
<td>Unique identifying number of the agent (display only). This is the alpha-numeric user id assigned in the Unified CM End User Configuration page.</td>
</tr>
<tr>
<td>Unified CCX Extension</td>
<td>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.</td>
</tr>
<tr>
<td>Resource Group</td>
<td>A resource group with which to associate the agent (optional).</td>
</tr>
</tbody>
</table>
| Automatic Available    | Accept the default (Enabled) to automatically put the agent into the Available or Ready state after the agent finishes a call and disconnects.  
  **Note** 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.  
  Select one or more skills from the Assigned Skills List and click > to remove skills from the Unassigned Skills list.  
  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  
  Changes the competence level of an assigned skill (1 = Beginner, 10 = Expert).  
  **Note** 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 RmCcM 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.

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

**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

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.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the resource or skill group.</td>
</tr>
<tr>
<td>Contact Queuing Criteria</td>
<td>Algorithm used to order the queued calls (contacts).</td>
</tr>
<tr>
<td>Resource Pool Selection Model</td>
<td>The resource selection criteria chosen for this CSQ.</td>
</tr>
<tr>
<td>Resource Pool</td>
<td>The skills or resource group used for this CSQ.</td>
</tr>
<tr>
<td>CSQ Type</td>
<td>The type of the CSQ.</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes the selected CSQ.</td>
</tr>
</tbody>
</table>

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 Selection Criteria field is displayed only if you have selected the CSQ type as Voice. This field is not configurable for an Email CSQ type.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Service Queue Name</td>
<td>Enter a meaningful name that is concise, yet easy to recognize (for example, Language Experts). This is a mandatory field.</td>
</tr>
<tr>
<td>Contact Service Queue Type</td>
<td>Select one of the following options from this drop-down menu:</td>
</tr>
<tr>
<td></td>
<td>• Voice (default)—Agents in this CSQ can handle inbound voice calls.</td>
</tr>
<tr>
<td></td>
<td>• Email—Agents in this CSQ can handle inbound email.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> If you select <em>Email</em> CSQ type, you can configure only the Resource Pool Selection Model field. All other fields are not configurable.</td>
</tr>
<tr>
<td>Contact Queuing Criteria</td>
<td>Display only. Displays the criteria used for queueing the contacts. For example, First In, First Out (FIFO).</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 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:  
  • 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.  
  • Disabled (default)—Agents enter Ready or Not Ready state when a call ends, depending on the Automatic Available setting.                                                                                                                                                                                                                                                                                                                                                                                                 |
| Wrapup Time           | Determines the length of the Work state for this CSQ when a call ends. Options are:  
  • Enabled button with Seconds field—The Seconds field specifies the length of the Work state phase.  
  • Disabled—No limit on how long the agent can stay in the Work state.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Resource Pool         | Select one of the following options from the drop-down menu:  
  • Resource Skills—To create a skills-based CSQ.  
  • Resource Group—To create a resource group-based CSQ.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Selection Model       | 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.  
  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.                                                                                                                                                                                                                                                                                                                                                      |
| Prompt                | .wav prompt file to associate with the CSQ. You can retrieve the prompt file that you select from this Prompt drop-down list using the Create CSQ Prompt Step in the Unified CCX Editor.  
  In the Unified CCX Editor, Create CSQ Prompt Step is one of the steps used to create scripts for the Unified CCX engine. In this step, you need to give the CSQ ID that is displayed as the last number in the AppAdmin address bar of the web page that is displayed when you click on an existing CSQ. For example, the CSQ ID will be 3 if the address bar of an existing CSQ Configuration web page ends with "&csdid=3". When the script executes, it will return the prompt associated with the specific CSQ ID. Use the Play Prompt Step within the script to play this prompt.  
  See the Cisco Unified CCX Editor Step Reference Guide for detailed information on scripting.                                                                                                     |
Modify a Contact Service Queue

**Note**
Changes take effect when all agents affected by the changes have left the Ready state.

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.  
*Note* 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 4**  
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.

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.

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:

<table>
<thead>
<tr>
<th>Agent ID</th>
<th>Assigned Skills</th>
<th>Resource Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent1</td>
<td>Banking (Competence Level 10)</td>
<td>GeneralQueries</td>
</tr>
<tr>
<td></td>
<td>CreditCard (Competence Level 6)</td>
<td></td>
</tr>
<tr>
<td>Agent2</td>
<td>Banking (Competence Level 5)</td>
<td>GeneralQueries</td>
</tr>
<tr>
<td></td>
<td>CreditCard (Competence Level 10)</td>
<td></td>
</tr>
<tr>
<td>Agent3</td>
<td>None</td>
<td>GeneralQueries</td>
</tr>
</tbody>
</table>

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

Table 1: Agent Skill and Resource Group Settings

<table>
<thead>
<tr>
<th>CSQ Name</th>
<th>Resource Pool Selection Model</th>
<th>Resource Selection Criteria</th>
<th>Skill/Competence</th>
<th>Available Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSQ1</td>
<td>Resource Skills</td>
<td>Most Skilled</td>
<td>BankingMinimum competency: 5</td>
<td>Agent1, Agent2</td>
</tr>
<tr>
<td>CSQ2</td>
<td>Resource Skills</td>
<td>Most Skilled</td>
<td>CreditCardMinimum competency: 5</td>
<td>Agent1, Agent2</td>
</tr>
<tr>
<td>CSQ3</td>
<td>Resource Group</td>
<td>Longest Available</td>
<td>GeneralQueries</td>
<td>Agent1, Agent2, Agent3</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Example</th>
<th>CSQ Skills</th>
<th>Agent Competency Levels</th>
<th>Sequence Agents Become Ready</th>
<th>Selection Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most skilled resource selection model</td>
<td>Technical Support</td>
<td>Agent A = 10</td>
<td>A, B C</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent B = 10</td>
<td>C, A, B</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent C = 5</td>
<td>A, C, B</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C, B, A</td>
<td>B, A, C</td>
</tr>
<tr>
<td>Least skilled resource selection model</td>
<td>Technical Support</td>
<td>Agent A = 10</td>
<td>A, B, C</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent B = 10</td>
<td>C, A, B</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent C = 5</td>
<td>A, C, B</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C, B, A</td>
<td>C, B, A</td>
</tr>
</tbody>
</table>

**Note** 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.

<table>
<thead>
<tr>
<th>Example</th>
<th>CSQ Skills</th>
<th>Agent Competency Levels</th>
<th>Sequence Agents Become Ready</th>
<th>Selection Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most skilled resource selection model</td>
<td>SalesSupport</td>
<td>Agent A = Sales (10)</td>
<td>A, B C</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support (5)</td>
<td>C, A, B</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent B = Sales (5),</td>
<td>A, C, B</td>
<td>A, B, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support (10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent C = Sales (5)</td>
<td>C, B, A</td>
<td>B, A, C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support (1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Remote Monitoring Use and Configuration

The Unified CCX Remote Monitoring feature allows a supervisor to call into any site where the supervisor has a Unified CM user profile and monitor agent conversations.

<table>
<thead>
<tr>
<th>Example</th>
<th>CSQ Skills</th>
<th>Agent Competency Levels</th>
<th>Sequence Agents Become Ready</th>
<th>Selection Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least skilled resource selection model</td>
<td>SalesSupport</td>
<td>Agent A = Sales (10) Support (5)</td>
<td>A, B, C</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent B = Sales (5), Support (10)</td>
<td>C, A, B</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agent C = Sales (5) Support (1)</td>
<td>A, C, B</td>
<td>C, A, B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C, B, A</td>
<td>C, B, A</td>
</tr>
</tbody>
</table>

Remote Monitoring Use and Configuration

The incoming and outgoing streams to and from the agent phone and the outgoing stream to the supervisor phone must have the same encoding, with only G.711 being supported.

When you, as a supervisor, monitor a conversation, you can hear all parties on the call. The parties will have no indication that you are monitoring the call. You cannot join the call or be heard by the parties. This is referred to as silent monitoring.

With Remote Monitoring, you can choose to monitor a call in either of these ways:

- **By resource (agent)**—In this case, you identify the resource by agent extension. If the agent is on a call, monitoring will begin immediately. If the agent is not on a call, monitoring will begin when the agent is presented with a call (that is, when the phone rings) or when the agent initiates a call (that is, when the phone goes off-hook).

- **By CSQ**—In this case, you will monitor the call of an agent who belongs to the CSQ. When you monitor by CSQ, you select the CSQ from a menu. When a call is presented to an agent who belongs to the selected CSQ, monitoring will begin for that agent and call.

**Note**

For CSQ monitoring, the supervisor cannot start monitoring the call after it connects to the agent; the call must arrive at the agent after supervision begins. For agent monitoring, supervision can begin after the call connects to the agent.

Create Remote Monitoring Supervisor

Use the User Management web page to assign supervisor privileges to a user.
Procedure

Step 1  From the Unified CCX Administration menu bar, choose Tools > User Management > Supervisor Capability View.
The User Configuration web page opens, displaying the list in two panes. The left pane displays the list of existing Unified CCX Supervisors and the right pane displays the list of Available Users.

Step 2  Change the users as required using the arrow in either direction. Your changes are dynamically displayed in this page and are effective immediately.

Step 3  Repeat this process as needed to assign the Supervisor capability for more than one user. Click **Back to User List** icon that displays in the tool bar in the upper, left corner of the window or the **Back to User List** button that displays at the bottom of the window to view the list of existing users.

Assign Resources and Contact Service Queues to a Supervisor

Use the Remote Monitor Configuration web page to assign a supervisor a list of resources and CSQs they are allowed to monitor.

Procedure

Step 1  From the Unified CCX Administration menu bar, choose Subsystems > RmCm > Remote Monitor. The Remote Monitor web page opens to display the Supervisor, Name, and User ID of Unified CM users who are Unified CCX supervisors (if configured).

Note  The Remote Monitor submenu option is available only if you are using the Unified CCX Premium license package.

Step 2  Click a User ID value. This is a Unified CM user configured as a Unified CCX supervisor (see Create Remote Monitoring Supervisor, on page 110). The Remote Monitor Configuration web page opens.

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Service Queues Name</td>
<td>(Check box.) CSQ Names the supervisor can monitor.</td>
</tr>
<tr>
<td>Resources</td>
<td>(Check box.) User IDs of agents the supervisor can monitor.</td>
</tr>
</tbody>
</table>

Step 4  Click **Update** to apply the changes. The Remote Monitor area of the RmCm Configuration web page reappears. The Supervisor can now access the Unified CCX Supervisor web page and view the allowed CSQs and agents.
When running the Remote Monitoring script, you might need to provide a CSQ ID. This ID is internally generated and is only visible on the Unified CCX Supervisor page.

**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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Work</td>
<td>Determines whether agents handling calls that are routed through this CSQ automatically enter the Work state when a call ends.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• Disabled (default)—Agents enter Ready or Not Ready state when a call ends, depending on the Automatic Available setting.</td>
</tr>
<tr>
<td>Wrapup Time</td>
<td>Determines if agents automatically enter Wrapup when a call ends.</td>
</tr>
<tr>
<td></td>
<td>• Enabled button with seconds field—Controls how long the agent can stay in the Work state if Automatic work is enabled. The seconds field specifies the Wrapup time length.</td>
</tr>
<tr>
<td></td>
<td>• Disabled (default)—No limit of how long the agent can stay in the Work state if Automatic Work is enabled.</td>
</tr>
</tbody>
</table>

**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.

If the wrap-up data feature is enabled in Cisco Desktop Administration, the agent will see a pop-up window when he moves to Work state, in which he can select the appropriate description that sums up the call outcome.

See the Cisco Desktop Administrator User Guide for more information.

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.
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.

---

**Unified Gateway Auto-configuration Details**

**Note**
Unified CCX supports ACD integration with the Cisco Unified Intelligent Contact Management Enterprise (Unified ICME) solution by way of the Cisco Unified Gateway. The Unified Gateway is a Peripheral Gateway (PG) which is configured on the Unified ICME software. The Unified Gateway is no longer coresident on the Unified CCX server as opposed to the earlier versions of Unified CCX. The CTI protocol supports integration of Unified Gateway with Unified ICME. The Cisco IPCC Gateway Deployment Guide for Cisco Unified ICME/CCE/CCX provides an overview of the Unified Gateway feature, lists the supported deployment options, provides comparative information, and includes information on configuring and integrating the Unified Gateway.

Some of the configurations performed on the Unified CCX using the appropriate web page in Unified CCX Administration will be automatically configured on Unified ICME via the Unified Gateway. The following table provides a list of these configurations, the equivalent term used on Unified ICME for these configurations, and the Configuration Manager tool that can be used on the Unified ICME Admin Workstation to view these configurations.

<table>
<thead>
<tr>
<th>Unified CCX Term</th>
<th>Unified ICME Term</th>
<th>Unified ICME Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Service</td>
<td>Service Explorer</td>
</tr>
<tr>
<td>Unified CCX Term</td>
<td>Unified ICME Term</td>
<td>Unified ICME Configuration</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Route Point (Trigger)</td>
<td>Routing Device</td>
<td>Peripheral Monitor Table</td>
</tr>
<tr>
<td>CSQ</td>
<td>Skill Group</td>
<td>Skill Group Explorer</td>
</tr>
<tr>
<td>Resource</td>
<td>Agent</td>
<td>Agent Explorer</td>
</tr>
</tbody>
</table>

**Note**
The agent extension goes to the Peripheral Monitor Table.

---

**Note**
These configurations and their attributes cannot be changed on Unified ICME if auto-configuration is enabled on Unified ICME.
Provision of Additional Subsystems

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, page 117
• Provision of Unified ICME Subsystem, page 118
• Provision of HTTP Subsystem, page 122
• Provision of Database Subsystem, page 124
• Provision eMail Subsystem, page 126

About Additional Subsystems

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

• The Unified ICME subsystem—The Unified CCX system uses the Cisco Unified Intelligent Contact Management Enterprise (Unified ICME) subsystem to communicate with Unified ICME to manage call distribution across sites and call-processing environments.

Note

If you are using Unified CCX with the Cisco Contact Center Gateway solution, please 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 the Unified Gateway. The Unified Gateway is a Peripheral Gateway (PG) which you configure on the Unified ICME software.
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 Unified ICME, web servers, database servers, and email servers.

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

Provision of Unified ICME Subsystem

Note
The Unified ICME subsystem is available if your system has a license installed for Unified IP IVR.

The Unified CCX system uses the Unified ICME subsystem to communicate with Unified ICME to manage call distribution across sites and call-processing environments.

The Unified CCX server is frequently used as part of a Unified ICME solution with Unified ICME. In this type of installation, the Unified ICME uses the Unified CCX server to queue calls and perform other functions such as collecting caller-entered digits, performing database lookups, and playing back prompts.

Note
If you are not using Unified ICME, you do not need to provision the Unified ICME subsystem.

Unified ICME scripts can direct calls based on various criteria such as the time of day or the availability of subsystems. The Unified ICME uses four different commands to interact with the Unified CCX system:

- **Connect**—Connects the call. Unified ICME sends the connect message with a label to instruct the Unified CCX system where to direct the call.

- **Release**—Hangs up the call.

- **Run VRU Script**—Runs a Unified ICME Voice Response Unit (VRU) script on the Unified CCX system.

- **Cancel**— Cancels the Unified ICME VRU script that is currently running.
Configure General Unified ICME Information

General Unified ICME information includes the TCP/IP socket number for receiving messages from the Unified ICME system and the expanded call context variables you want to use to pass call-related information. To configure general Unified ICME information, complete the following steps.

Procedure

Step 1 From the Unified CCX Administration menu bar, choose Subsystems > ICM > General. The ICME Configuration web page opens. For information on the web page fields, see ICME Configuration Web Page, on page 119

Step 2 Specify the fields.

Step 3 Click Update. The configuration information is added to the system.

You are now ready to configure the Unified ICME VRU Scripts area of the Unified ICME Configuration web page.

ICME Configuration Web Page

The following table describes the fields for the ICME Configuration web page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRU Connection Port</td>
<td>The same number configured in the VRU Peripheral Interface Manager (PIM) on the Unified ICME system. The default value in the Unified ICME setup is 5000. This is a mandatory field. The system uses this TCP/IP socket number to receive messages from the Unified ICME system. You can copy the VRU Connection Port value from the VRU PIM configuration dialog box of the VRU PG machine.</td>
</tr>
</tbody>
</table>
### PG Hosts Allow

By default, any PG will be able to connect in the Unified ICME setup. For security reasons, you can configure selected PGs, which you want to connect to the Unified IP IVR system using any one of the following three options:

- **All** – Click the All radio button if you want any PG to be able to connect to the Unified IP IVR. This radio button will be selected by default in the Unified ICME setup.

- **None** - Click the None radio button if you do not want even a single PG to connect to the Unified IP IVR.

- **Specific** – Click the Specific radio button if you want to connect only specific PGs to the Unified IP IVR. Once you select this option, you will be able to enter the Host name or IP address for one or both the PGs using the following fields:
  - **PG 1 Hostname/IP Address**
  - **PG 2 Hostname/IP Address**

**Note** When you select the **Specific** option, the PG1 Hostname/IP Address is a mandatory field.

### Service Control

If you click **Yes**, the Service Control interface allows Unified ICME to provide call-processing instructions to the Unified CCX system. It also provides Unified ICME software with event reports indicating changes in call state.

You must enable the service control interface to use the Unified ICME subsystem.

### Additional VRU Call Information

Select the required variables to pass call-related information by selecting the check box. The following expanded call variables are available on the Unified ICME subsystem:

- **Task ID**: Task ID that handles the current call.
- **Media ID**: Media ID that handles the current call.
- **Last Redirected Address**: Transient part ID of the call.
- **Arrival Type**: Arrival type of the call.
- **Session Handled**: Boolean flag that the Unified ICME software or a Set Contact Info step with a Handled flag step sets to indicate whether the session is handled.

**Note** Unified CCX automatically sets the flag whenever a call is connected to an agent.

- **VRU Script Name**: Script name to run on the PreConnect feature.

**Note** All scripts under the default directory are listed in the drop-down list of the Script field in the Cisco Script Application Configuration page.

- **Config Param**: Parameters for the VRU scripts on the PreConnect feature.
You can also define your own expanded call variables in the Configure ICME tool in the Unified ICME system. The Unified CCX Engine registers the user-defined expanded call variables with Unified ICME after it loads the VRU scripts that use these variables. The variables remain registered until the Unified ICME session is reopened (either by request from the VRU PG or when the Unified CCX Engine is restarted). The variables remain registered even if you delete the script that uses them.

Note

Every Call Context Variable and Expanded Call Context Variable must be defined on both sides of the system that receive and send variable data in scripts. In a Unified CCX system, these variables must be defined both in Unified CCX and in Cisco Desktop Administrator (CDA). In a Unified CCX system integrated with Unified ICME through the Unified Gateway, these variable must be defined in Unified CCX, in CDA, and also in Unified ICME.

Tip

Configure Unified ICME VRU Scripts

Configure Unified ICME VRU scripts. Unified ICME VRU Script entries allow you to map the VRU script name, used by Unified ICME in the Run VRU Script node, to a Unified CCX script name.

Unified ICME uses VRU scripts to handle interactions with contacts. These scripts are loaded as applications on the Unified CCX Engine.

To configure Unified ICME VRU Scripts, complete the following steps.

Procedure

Step 1
From the Unified CCX Administration menu bar, choose Subsystems > ICM. The Unified ICME Configuration web page opens, displaying the General area.

Step 2

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRU Script Name</td>
<td>Displays the VRU script name.</td>
</tr>
<tr>
<td>Note</td>
<td>All scripts under the default directory are listed in the drop-down list of the Script field in the Cisco Script Application Configuration page.</td>
</tr>
<tr>
<td>Script</td>
<td>Displays the script associated with the VRU script.</td>
</tr>
</tbody>
</table>

Step 4
Click Add a New VRU Script icon or button. The Unified ICME VRU Script area of the Unified ICME Configuration web page opens.

Step 5
Specify the following fields:
Provision of HTTP Subsystem

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRU Script Name</td>
<td>A name for the VRU script you want to add.</td>
</tr>
<tr>
<td>Script</td>
<td>The Unified CCX script to associate with the VRU script. You can select</td>
</tr>
<tr>
<td></td>
<td>the script from the drop-down list or click <strong>Edit</strong> button to specify a</td>
</tr>
<tr>
<td></td>
<td>new script. All scripts under the default directory are listed in the drop-</td>
</tr>
<tr>
<td></td>
<td>down list of the <strong>Script</strong> field in the Cisco Script Application</td>
</tr>
<tr>
<td></td>
<td>Configuration page.</td>
</tr>
<tr>
<td></td>
<td>To specify a new script, click <strong>Edit</strong>, enter the script name in the dialog</td>
</tr>
<tr>
<td></td>
<td>box, and click <strong>OK</strong>. The User Prompt dialog box closes, and the name you</td>
</tr>
<tr>
<td></td>
<td>entered appears in the <strong>Script</strong> field.</td>
</tr>
<tr>
<td></td>
<td>If you enter the script name as a file URL, enter the value with double</td>
</tr>
<tr>
<td></td>
<td>backslashes (\). For example, file://c:\temp\aa.aef</td>
</tr>
</tbody>
</table>

**Step 6**  
Click **Add**.  
The Unified ICME VRU Script area closes, and the name of the VRU script you added appears in the Unified ICME VRU Scripts 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 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.
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>URL</td>
<td>The relative URL. For example: /hello</td>
</tr>
<tr>
<td>Application Name</td>
<td>Select an application for which you want to add a HTTP trigger from this list box.</td>
</tr>
<tr>
<td>Sessions</td>
<td>The maximum amount of simultaneous sessions (instances) that the application can handle.</td>
</tr>
<tr>
<td></td>
<td>• The limit for the maximum number of simultaneous remote monitoring sessions is 16, but the actual number depends on CPU and memory resources. Entering a number that is too high can result in unacceptable system performance.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Click the required radio button to accept - Yes (the default). Note If you disable the trigger, the user receives an error message when browsing to the defined trigger URL.</td>
</tr>
</tbody>
</table>

**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

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.

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.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source Name</td>
<td>Data source name for referring to the datasource. This is a mandatory field.</td>
</tr>
<tr>
<td>User Name</td>
<td>Username defined for connecting to the enterprise database. This is a mandatory field.</td>
</tr>
<tr>
<td>Password</td>
<td>Password defined for connecting to the enterprise database.</td>
</tr>
<tr>
<td>Confirm Password</td>
<td>Re-enter the password that you provided in the Password field.</td>
</tr>
<tr>
<td>Maximum Number of Connections</td>
<td>Maximum number of connections allowed to connect to the database. 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.</td>
</tr>
<tr>
<td>Driver</td>
<td>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.</td>
</tr>
<tr>
<td>JDBC URL</td>
<td>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. Note: If the test connection fails for Oracle JDBC drive connection, try the following connection url: jdbc:oracle:thin:[user/password]@[host]:[port]:SID</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RetryConnectInterval</td>
<td>Specifies the interval between two connection attempts when a data source is initialized. The default is 15,000 milliseconds.</td>
</tr>
<tr>
<td>NumAttempt</td>
<td>Specifies the number of attempts to establish connections to the database when a data source is initialized. The default is 3 attempts.</td>
</tr>
<tr>
<td>LoginTimeout</td>
<td>Sets the maximum time in seconds that a driver will wait while attempting to connect to a database. The default is 0 (disabled).</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail Server</td>
<td>A fully-qualified email server name. (Example: server.domain.com)</td>
</tr>
<tr>
<td>email Address</td>
<td>An existing fully qualified e-mail address for the administrative account.</td>
</tr>
<tr>
<td></td>
<td>Example: <a href="mailto:administrator@domain.com">administrator@domain.com</a></td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Univers CCX supports alphanumeric IDs and special characters (only hyphen &quot;,&quot;, underscore &quot;,&quot;, and dot &quot;,&quot;).</td>
</tr>
</tbody>
</table>

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.
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, page 129
• Manage Grammar Files, page 131
• Manage Document Files, page 132
• Language Management, page 133
• Upload of Prompt Files, page 136
• Management of Custom Files, page 138
• AAR File Management, page 139

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
Management of Prompts, Grammars, Documents, and Custom Files

Manage Prompt Files

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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>From the Unified CCX Administration menu bar, choose <strong>Application &gt; Prompt Management</strong>.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>The Prompt Management web page opens to display the following fields and buttons.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field or Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Lists the location of the items listed in the Name column.</td>
</tr>
<tr>
<td>Folder</td>
<td>Path of the current item selected in the Name column with respect to the root folder.</td>
</tr>
<tr>
<td>Name</td>
<td>Name of the language.</td>
</tr>
<tr>
<td>Size</td>
<td>The size of the prompt file prefixed with KB. The file size is converted from bytes to KB. <strong>Note</strong> This column is usually blank on the root page because the items on this page are usually folders.</td>
</tr>
<tr>
<td>Date Modified</td>
<td>The date and time when the document was last uploaded or changed along with time zone.</td>
</tr>
<tr>
<td>Modified by</td>
<td>The user ID of the person who performed these modifications.</td>
</tr>
<tr>
<td>Delete</td>
<td>Click <strong>Delete</strong> icon to remove the folder and its contents from the repository.</td>
</tr>
<tr>
<td>Rename</td>
<td>Click <strong>Rename</strong> icon to rename the folder in the repository.</td>
</tr>
<tr>
<td>Refresh</td>
<td>Click <strong>Refresh</strong> icon to refresh the folder in the repository.</td>
</tr>
<tr>
<td>Create Language</td>
<td>Displays a dialog box that lets you create a new language folder.</td>
</tr>
<tr>
<td>Upload Zip Files</td>
<td>Displays a dialog box that lets you locate and upload a zip file. <strong>Note</strong> 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.</td>
</tr>
</tbody>
</table>

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 runtime.

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.

<table>
<thead>
<tr>
<th>Field or Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Lists the location of the items listed in the Name column.</td>
</tr>
<tr>
<td>Folder</td>
<td>Path of the current item selected in the Name column with respect to the root folder.</td>
</tr>
<tr>
<td>Codec</td>
<td>The codec chosen during installation for this Unified CCX server. Display only.</td>
</tr>
<tr>
<td>Name</td>
<td>Name of the language folder.</td>
</tr>
<tr>
<td>Size</td>
<td>The size of the grammar file prefixed with KB. The file size is converted from bytes to KB. This column is usually blank on the root page as the items on this page are usually folders.</td>
</tr>
<tr>
<td>Date Modified</td>
<td>The date and time when the document was last uploaded or changed along with time zone.</td>
</tr>
<tr>
<td>Modified by</td>
<td>The user ID of the person who performed these modifications.</td>
</tr>
</tbody>
</table>
### Field or Button | Description
---|---
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.
**Note** | 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.

---

## 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

1. **Step 1** From the Unified CCX Administration menu bar, choose **Applications > Document Management**.
2. **Step 2** The Document Management web page opens to display the following fields and buttons.
<table>
<thead>
<tr>
<th>Field or Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Lists the location of the items listed in the Name column.</td>
</tr>
<tr>
<td>Folder</td>
<td>Path of the current item selected in the Name column with respect to the root folder.</td>
</tr>
<tr>
<td>Name</td>
<td>Name of the language folder.</td>
</tr>
<tr>
<td>Size</td>
<td>The size of the grammar file prefixed with KB. The file size is converted from bytes to KB. This column is usually blank on the root page as the items on this page are usually folders.</td>
</tr>
<tr>
<td>Date Modified</td>
<td>The date and time when the document was last uploaded or changed along with time zone.</td>
</tr>
<tr>
<td>Modified by</td>
<td>The user ID of the person who performed these modifications.</td>
</tr>
<tr>
<td>Delete</td>
<td>Displays a dialog box that lets you delete an existing language folder.</td>
</tr>
<tr>
<td>Rename</td>
<td>Displays a dialog box that lets you rename an existing language folder.</td>
</tr>
<tr>
<td>Refresh</td>
<td>Refreshes the specified folder in the repository.</td>
</tr>
<tr>
<td>Create Language</td>
<td>Displays a dialog box that lets you create a new language folder.</td>
</tr>
<tr>
<td>Upload Zip Files</td>
<td>Displays a dialog box that lets you locate and upload a zip file.</td>
</tr>
</tbody>
</table>

**Note**

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 Record 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 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.  
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Id</td>
<td>Unique identifier of the user for which the spoken name is to be uploaded. This is a mandatory field.</td>
</tr>
<tr>
<td>Codec</td>
<td>The codec chosen during installation for this Unified CCX server. Display only.</td>
</tr>
<tr>
<td>Spoken Name (.wav)</td>
<td>Location of the .wav file. This is a mandatory field.</td>
</tr>
</tbody>
</table>

**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: 1.1 Created-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: 1.1
Created-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]
The figure below shows a sample AAR file.

**Figure 2: 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.
You can either enter the name of the AAR file or click **Browse** button next to this field to navigate to the directory in which the file is located. This is a mandatory field.

<table>
<thead>
<tr>
<th>Field or Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter a Valid AAR File to Upload</td>
<td>You can either enter the name of the AAR file or click <strong>Browse</strong> button next to this field to navigate to the directory in which the file is located. This is a mandatory field.</td>
</tr>
<tr>
<td>Overwrite existing files</td>
<td>Enable this checkbox in case you want to overwrite the existing files.</td>
</tr>
<tr>
<td>Upload</td>
<td>Click this button to upload the AAR file.</td>
</tr>
<tr>
<td>Clear</td>
<td>Click this button to clear the selected file.</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>section:</td>
<td>+header +newline</td>
</tr>
<tr>
<td>nonempty-section:</td>
<td>+header +newline</td>
</tr>
<tr>
<td>newline:</td>
<td>CR LF</td>
</tr>
<tr>
<td>header:</td>
<td>name: value</td>
</tr>
<tr>
<td>name:</td>
<td>alphanum *headerchar</td>
</tr>
<tr>
<td>value:</td>
<td>SPACE *otherchar newline *continuation</td>
</tr>
<tr>
<td>continuation:</td>
<td>SPACE *otherchar newline</td>
</tr>
<tr>
<td>alphanum:</td>
<td>{A-Z}</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>manifest-file</td>
<td>main-section newline *individual-section</td>
</tr>
<tr>
<td>main-section</td>
<td>version-info newline *main-attribute</td>
</tr>
<tr>
<td>version-info</td>
<td>Manifest-Version: version-number</td>
</tr>
<tr>
<td>version-number</td>
<td>digit+{.digit+}*</td>
</tr>
<tr>
<td>main-attribute</td>
<td>(any legitimate main attribute) newline</td>
</tr>
<tr>
<td>individual-section</td>
<td>Name: value newline *perentry-attribute</td>
</tr>
<tr>
<td>perentry-attribute</td>
<td>(any legitimate perentry attribute) newline</td>
</tr>
<tr>
<td>newline</td>
<td>CR LF</td>
</tr>
<tr>
<td>digit</td>
<td>{0-9}</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifest-Version</td>
<td>The manifest file version. The value is a legitimate version number.</td>
</tr>
<tr>
<td>Created-By</td>
<td>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.</td>
</tr>
<tr>
<td>Cisco Unified CCX-Version</td>
<td>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.</td>
</tr>
<tr>
<td>Class-Path</td>
<td>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.</td>
</tr>
<tr>
<td>Application-List</td>
<td>The application configuration files from the META-INF/applications/ directory to be installed. Entries are separated by one or more spaces.</td>
</tr>
<tr>
<td>Subsystem-List</td>
<td>The subsystem configuration files from the META-INF/subsystems/ directory to be installed. Entries are separated by one or more spaces.</td>
</tr>
<tr>
<td>Palette-List</td>
<td>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.</td>
</tr>
<tr>
<td>Palette-Name</td>
<td>The unique name of the palette to define in the Unified CCX editor where the specified steps will be grouped and accessible.</td>
</tr>
</tbody>
</table>
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 show 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**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation-Title</td>
<td>The title of the extension implementation.</td>
</tr>
<tr>
<td>Implementation-Version</td>
<td>The version of the extension implementation.</td>
</tr>
<tr>
<td>Implementation-Vendor</td>
<td>The organization that maintains the extension implementation.</td>
</tr>
<tr>
<td>Implementation-Vendor-Id</td>
<td>The ID of the organization that maintains the extension implementation.</td>
</tr>
<tr>
<td>Implementation-URL</td>
<td>The URL from which the extension implementation is downloaded.</td>
</tr>
<tr>
<td>Sealed</td>
<td>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.</td>
</tr>
</tbody>
</table>

**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 146 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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>application-file</td>
<td>version-info newline *application-attribute</td>
</tr>
<tr>
<td>version-info</td>
<td>Application-Version: version-number</td>
</tr>
<tr>
<td>version-number</td>
<td>digit+{.digit+}*</td>
</tr>
<tr>
<td>application-attribute</td>
<td>(any legitimate application attribute) newline</td>
</tr>
<tr>
<td>newline</td>
<td>CR LF</td>
</tr>
<tr>
<td>digit</td>
<td>{0-9}</td>
</tr>
</tbody>
</table>

The application attributes fall into the following groups:
### Table 8: Application Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application-Version</td>
<td>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.</td>
</tr>
<tr>
<td>Application-Name</td>
<td>The unique name of the application (see Unified CCX Application Management).</td>
</tr>
<tr>
<td>Application-Type</td>
<td>The type of the application (Cisco Script Application, Busy, Ring-No-Answer, Unified ICME Translation or Post Routing).</td>
</tr>
<tr>
<td>Application-Description (optional)</td>
<td>The description for the application (see Unified CCX Application Management).</td>
</tr>
<tr>
<td>Application-Id</td>
<td>A unique identifier for the application (see Unified CCX Application Management).</td>
</tr>
<tr>
<td>Max-Sessions</td>
<td>The maximum number of sessions for the application (see Unified CCX Application Management).</td>
</tr>
<tr>
<td>Enabled</td>
<td>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.</td>
</tr>
<tr>
<td>Script</td>
<td>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.</td>
</tr>
<tr>
<td>Default-Script</td>
<td>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.</td>
</tr>
<tr>
<td>Initial-Script</td>
<td>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.</td>
</tr>
</tbody>
</table>

- 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 145.
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, page 149
- High Availability and Automatic Failover, page 150
- Unified CCX CDS Information Management, page 151
- Manage System Parameters, page 151
- Unified CCX IP Address/hostname Management, page 156
- Exit Unified CCX Administration, page 171

**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.

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

- **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, desktop services, 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**

**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.

**Note**
After a Unified CCX failover or failback the agent state changes to Not Ready state.

## 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.

**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.

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

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 recording count, port settings, default session timeout, and codec.
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**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic System Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>System Time Zone</td>
<td>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. <strong>Note</strong> If you have changed the primary time zone, you need to reboot both the nodes in the Unified CCX cluster.</td>
</tr>
<tr>
<td><strong>Network Deployment Parameters (displayed only in a HA over WAN deployment)</strong></td>
<td></td>
</tr>
<tr>
<td>Network Deployment Type</td>
<td>Displays the network deployment type as LAN or WAN only if we have more than one node. Display only.</td>
</tr>
<tr>
<td><strong>Internationalization Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Customizable Locales</td>
<td>Use to specify a unique locale. Default: (blank)</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Default Currency</td>
<td>Default currency, such as American dollars (USD), Euros, and so on. This is a mandatory field. The system uses the default currency for converting currency amounts in a playable format when no currency designator is specified. Default: American Dollar [USD]</td>
</tr>
</tbody>
</table>

**Media Parameters**

<table>
<thead>
<tr>
<th>Codec</th>
<th>The codec chosen during installation for this Unified CCX server. Unified CCX supports packetization intervals of 20 ms, 30 ms, or 60 ms only. Default: 30 ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording Count</td>
<td>The maximum number of simultaneous sessions that are supported with this system configuration. This value cannot be greater than the number of seats. This is a mandatory field. <strong>Note</strong> Standard license package does not support recording. Premium package license supports recording, however, when you upgrade from Standard to Premium license package, you need to manually change this recording count to a suitable value based on the hardware type to enable recording functionality. Default: 0</td>
</tr>
<tr>
<td>Default TTS Provider</td>
<td>Default TTS (Text-to-Speech) provider. 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.</td>
</tr>
<tr>
<td>User Prompts override System Prompts</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Application Parameters**
### Supervisor Access

The Administrator uses this option to allow certain privileges to supervisors (all supervisors have the same privilege). The options are:

- **No access to teams** — The supervisor logs into the Supervisor page, but will not be able to see any team information (No RmCm info).

- **Access to all teams** — The supervisor logs into the Supervisor page, and will be able to see all the teams (RmCm information).

- **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.

Default: No access to teams

**Note**  
A supervisor who does not have administrator privileges can add, modify, or remove skills from an agent.

### Max Number of Executed Steps

The maximum number of steps an application can execute before the Unified CCX Engine terminates the script or application. This is a mandatory field. This limitation is intended to prevent a script from running indefinitely.

Default: 1000

**Note**  
Do not change the default value.

### Additional Tasks

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.

Default: 0

### Default Session Timeout

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.

The default is 30 minutes (recommended). If you reduce this number, you also reduce the system memory usage comparatively.

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 *Cisco Unified Contact Center Express Getting Started with Scripts* for more information.

### Enterprise Call Info Parameter Separator

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.

Default: | (bar)
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Agent State after Ring No Answer | Radio button determining how agent state should be set after a Ring No Answer event. This is a mandatory field. The options are:  
  - Ready. If an agent does not answer a Unified CCX call, the Agent State is set to Ready.  
  - Not Ready (default). If an agent does not answer a Unified CCX call, the Agent State is set to Not Ready. |
| Live Data - Short Term Reporting Duration | This parameter applies to Live Data reports that are available to agents and supervisors on Finesse desktops.  
For certain fields in the live data reports, you can set the short term value to 5, 10 or 15 minutes.  
Long term value is always set to 30 minutes. |
| Number of Outbound seats | 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.  
**Note** This is a mandatory field. This field is displayed only if you have a Premium license.  
The maximum number of direct preview outbound seats that can be configured is limited by either the Premium Seat Count or the hardware limit, whichever is the least.  
If there is an invalid entry during configuration, an error message is displayed.  
The max count for the Direct Preview Outbound seat count is as shown in the table |

<table>
<thead>
<tr>
<th>Hardware Type</th>
<th>Max count</th>
</tr>
</thead>
<tbody>
<tr>
<td>7845</td>
<td>300</td>
</tr>
<tr>
<td>7835</td>
<td>75</td>
</tr>
<tr>
<td>7825</td>
<td>75</td>
</tr>
<tr>
<td>7816</td>
<td>50</td>
</tr>
</tbody>
</table>

### System Ports Parameters

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| RMI Port         | The port number used by the Unified CCX CVD to serve RMI requests. This is a mandatory field.  
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 Cisco Agent Desktop, Unified ICME Server, Sync Server, and IP Phone Agent Server, use this port number. This is a read-only field and cannot be modified.  
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. Hostname must be in lower case, and the character limit is 24 characters.

---

### Field Description

**Master Listener TCP Port**

TCP port used for communication between CVD and Cisco Agent/Supervisor Desktop Services. This is a read-only field and cannot be modified.

Default: 1994

**Context Service Parameters**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Mode</td>
<td>Radio button indicates if the Context Service is in production mode or lab mode.</td>
</tr>
<tr>
<td></td>
<td>• Enable—Context Service switches to lab mode.</td>
</tr>
<tr>
<td></td>
<td>• Disable (default)—Context Service will be in production mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Context Service in the Lab mode will create the data in the lab work group. When Context Service switches to the production mode, the data created in the lab work group will no longer be available in the production mode and vice versa. Lab mode is a workgroup created for test and debug.</td>
</tr>
<tr>
<td>Request Timeout</td>
<td>The number of milliseconds (ms) the system should wait before rejecting the Context Service cloud connectivity. Default: 1200 milliseconds, Range: 200 to 15000 milliseconds.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> A typical Context Service request within the same geographical area takes around 100ms to 300ms while it takes as long as 1.2 to 1.5 seconds across the globe.</td>
</tr>
<tr>
<td>Max Retries</td>
<td>The maximum number of times the Context Service system is allowed to retry connecting to cloud during network related issues. Default: 1, Range: 0 to 5.</td>
</tr>
</tbody>
</table>

**Note** Context Service Parameter changes requires restart of Cisco Unified CCX Engine of all nodes in the cluster.
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:

  a) **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.

  b) **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
- `<netmask>` specifies the new server network mask
- `<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
```

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.

**Step 3**  If you change the IP address, License MAC of the server will also change. Rehost the new license. Old license enters its grace period.

**Step 4**  From Cisco Desktop Administrator web page, choose Services Configuration > Silent Monitoring & Recording > Remove VoIP/Recording & Playback Services. Remove any VoIP Monitor Service or Recording & Playback Service listed, which uses the IP address that has been changed.

**Step 5**  From Cisco Desktop Administrator, navigate to CAD Configuration Setup. Update primary location of the CAD-BE Server to the new IP address. The Services IP Address should display the new IP address. If not, change it to the new IP address. Click Save and then restart all CAD services on the server after making these updates.

**Note**  When you change the IP address in a single-node deployment, CAD does not launch itself and you need to run the Cisco Unified CCX Desktop Client Configuration tool to update the client installations with the new IP address.

---

**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>` and `show tech network hosts` CLI commands 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:

a) Navigate to Settings > IP > Publisher.
b) 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

*** WARNING ***
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 utilities 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.
Step 7 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.
Step 8 From Cisco Desktop Administrator web page, choose Services Configuration > Silent Monitoring &
Recording > Remove VoIP/Recording & Playback Services. Remove any VoIP Monitor Service or
Recording & Playback Service listed, which uses the IP address that has been changed.
Step 9 From Cisco Desktop Administrator, navigate to CAD Configuration Setup. Update primary and secondary
location of the CAD-BE Servers to the new IP address. The Services IP Address should display the new IP
address. If not, change it to the new IP address. Click Save and then restart all CAD services on the server
after making these updates.
Note When you change the IP address of publisher, CAD will connect to the subscriber and will update
the IP address of the publisher automatically through its True Update functionality.

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 utilities network host <IP Address>
and show tech network hosts CLI commands 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:

a) Navigate to System > Server. From the List Servers webpage, click the IP address of the subscriber server.
   The Server Configuration page for the subscriber server opens.

b) 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
```
**WARNING**
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.

**Step 7** From Cisco Desktop Administrator web page, choose **Services Configuration > Silent Monitoring & Recording > Remove VoIP/Recording &Playback Services**. Remove any VoIP Monitor Service or Recording &Playback Service listed, which uses the IP address that has been changed.

**Step 8** From Cisco Desktop Administrator, navigate to CAD Configuration Setup. Update primary and secondary location of the CAD-BE Servers to the new IP address. The Services IPAddress should display the new IP address. If not, change it to the new IP address. Click **Save** and then restart all CAD services on the server after making these updates.

---

**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**

Hostname must be in lower case, and the character limit is 24 characters.

---

**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.
```

---

Security Warning: This operation will regenerate all UCCX Certificates including any third party signed Certificates that have been uploaded.

---

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.
c) (If required) To change the IP address, follow the instructions on the screen.
   The server automatically reboots with the new host name.

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) If required, change the IP address, subnet mask, and default gateway.
   d) 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  From Cisco Desktop Administrator web page, choose Services Configuration > Silent Monitoring & Recording > Remove VoIP/Recording & Playback Services. Remove any VoIP Monitor Service or Recording & Playback Service listed, which uses the host name or IP address that has been changed.

Step 7  From Cisco Desktop Administrator, navigate to CAD Configuration Setup. Update primary location of the CAD-BE Server to correct the new host name or IP address. The Services IP Address must display the new IP address. Otherwise, change it to the new IP address. Click Save and then restart all CAD services on the server after making these updates.

Note  When you change the host name or IP address in a single-node deployment, CAD does not launch itself and you need to run the Cisco Unified CCX Desktop Client Configuration tool to update the client installations with the new host name or IP address.

Host Name Modification in High-Availability (HA) Deployment

Hostname must be in lower case and the character limit is 24 characters.

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

*** WARNING ***
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 reset 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 hostname, License MAC changes. Rehost the new license for the new license MAC. Old license enters its grace period.

Step 10 From Cisco Desktop Administrator web page, choose Services Configuration > Silent Monitoring & Recording > Remove VoIP/Recording & Playback Services. Remove any VoIP Monitor Service or Recording & Playback Service listed, which uses the IP address that has been changed.

Step 11 From Cisco Desktop Administrator, navigate to CAD Configuration Setup. Update primary and secondary location of the CAD-BE Servers to the new IP address. The Services IP Address must display the new IP address. If not, change it to the new IP address. Click Save and then restart all CAD services on the server after making these updates.

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:

```bash
utils uccx modify remote_hostname <Old_hostname_of_Subscriber> <New_hostname_of_Subscriber>
```

The following output displays:

```bash
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:

```bash
set network hostname
```

The following output displays:

```bash
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
*** WARNING ***
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 hostname 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 From Cisco Desktop Administrator web page, choose Services Configuration > Silent Monitoring & Recording > Remove VoIP/Recording & Playback Services. Remove any VoIP Monitor Service or Recording & Playback Service listed, which uses the IP address that has been changed.

Step 9 From Cisco Desktop Administrator, navigate to CAD Configuration setup. Update primary and secondary location of the CAD-BE Servers to the new IP address. The Services IP Address must display the new IP address. If not, change it to the new IP address. Click Save and then restart all CAD services on the server after making these updates.

---

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 Choose Tools > Plug-ins and click Cisco Unified CCX Desktop Suites from the Unified CCX Administration menu bar. From the Cisco Unified CCX web page, run the Cisco Unified CCX Desktop Client Configuration tool to update the client installations with the new IP addresses.
On the client, if only one IP address in a HA system has been updated and the client is an XP machine with administrator privileges, then the Automatic Update process will update the registry the next time the user logs on. However, you will have to manually update the client's system by running `C:\Program Files\Cisco\Desktop\bin\PostInstall.exe` program, and update it with the correct IP addresses, if any of the following conditions are true:

- IP address/host name of a single-node deployment is changed
- Both IP addresses/host names in a HA system are changed
- Client OS is Microsoft Vista or Win7
- Client does not have administrative rights
Step 2 Ensure that all the servers in the cluster are up and available.

Step 3 Check the DB replication status as described in Step 3 of Prepare System for IP Address/host name Change, on page 157 to ensure all the servers are replicating database changes successfully.

Step 4 Run a manual DRS Backup and ensure that all nodes and active services are successfully backed up.

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.

Step 6 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 7 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 8 Update the new IP address in the following web pages as well:

- Cisco Desktop Administrator > Cisco Unified Presence Settings > Cisco Unified Presence Cluster - Publisher Host/IP Address and Subscriber Host/IP Addresses
- Cisco Desktop Administrator > Agent E-Mail Settings > Global Settings - IMAP Server Host/IP Address and SMTP Server Host/IP Address
- 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 9 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:

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can also exit Unified CCX Administration by closing your web browser.</td>
</tr>
</tbody>
</table>

#### 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.
Unified CCX Reporting

- Reporting Administration on Unified CCX, page 173
- Reporting Administration on Unified Intelligence Center, page 212

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 ucxx synctocuic 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 314
2. **Configure Automatic Purging**, on page 176

### 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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Name</td>
<td>The host name or IP Address of the database server.</td>
</tr>
<tr>
<td>Maximum DB Connections for Report Clients Sessions</td>
<td>The maximum number of client and scheduler connections that can access the Historical Reports Database server. 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:</td>
</tr>
<tr>
<td></td>
<td>• Standalone Setup—1 to 8 instances</td>
</tr>
<tr>
<td></td>
<td>• High Availability Setup—1 to 16 instances</td>
</tr>
</tbody>
</table>
**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 12:00 a.m. (00:00 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purge Schedule</td>
<td></td>
</tr>
<tr>
<td>Daily purge at</td>
<td>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. <strong>Note</strong> Unified CCX to Unified Intelligence Center sync runs as part of the purge. It synchronizes the users, teams and grants Live Data report permissions.</td>
</tr>
<tr>
<td>Purge data older than</td>
<td>Data can persist for a number of months before being purged.</td>
</tr>
</tbody>
</table>
## Auto Purge Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiate automatic purge when database exceeds</td>
<td>Percentage of the maximum database size at which an automatic purge is initiated (as compared to the total available size).</td>
</tr>
<tr>
<td>Auto purge data for the oldest</td>
<td>Age of data to be purged.</td>
</tr>
</tbody>
</table>

### 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 Initiate automatic purge when database size exceeds field, accept the default, or choose another number.

### Step 5
From the drop-down menu in the Auto purge data for the oldest field, accept the default of 15, or choose another number.

### Step 6
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  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. If you have the Cisco Agent Desktop and Cisco Supervisor Desktop, you also can run real-time reports directly from these applications. Cisco Agent Desktop and Cisco Supervisor Desktop do not use the same calculations or data display methods as those that Unified CCX real-time reporting uses. Therefore, a report run using Unified CCX real-time reporting and a report run using Cisco Supervisor Desktop may not display the same information for a given statistic. To avoid confusion, it might help to make one of these tools your standard reporting tool.

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, Real Time Reporting, Cisco Agent/Supervisor Desktop.

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.

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Tasks</td>
<td>Provides information about currently active applications.</td>
</tr>
<tr>
<td>Application Tasks Summary</td>
<td>Provides a summary of specific application activity.</td>
</tr>
<tr>
<td>Applications</td>
<td>Provides a list of all applications loaded on the Unified CCX server.</td>
</tr>
</tbody>
</table>
### Unified CCX Reporting

**Unified CCX Real-Time Reports**

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts Summary</td>
<td>Provides information for call contacts, email contacts, and HTTP contacts. Also provides the total number of contacts. <strong>Note</strong> Calls made by the Outbound subsystem will not be displayed in the Contacts Summary Real-Time Report.</td>
</tr>
<tr>
<td>Contacts</td>
<td>Provides information about currently active contacts.</td>
</tr>
<tr>
<td>Chat CSQ Cisco Unified Contact Center Express Stats</td>
<td>Provides information about Chat CSQ activity. This report is available only if Unified CCX has been configured.</td>
</tr>
<tr>
<td>Chat Resource Cisco Unified Contact Center Express Stats</td>
<td>Provides information about Chat Unified CCX resources activity.</td>
</tr>
<tr>
<td>CSQ Cisco Unified Contact Center Express Stats</td>
<td>Provides information about CSQ activity. This report is available only if Unified CCX has been configured.</td>
</tr>
<tr>
<td>Data Source Usage</td>
<td>Provides information about configured data source names (DSNs).</td>
</tr>
<tr>
<td>Engine Tasks</td>
<td>Provides information about currently active Engine tasks.</td>
</tr>
<tr>
<td>Preview Outbound Campaign Cisco Unified Contact Center Express Stats</td>
<td>Provides information about real-time Unified CCX information for the Outbound preview dialer.</td>
</tr>
<tr>
<td>IVR Outbound Campaign Stats</td>
<td>Provides real-time statistics on progressive and predictive Outbound IVR campaigns since the statistics were last reset. <strong>Note</strong> This report will be available only if you have an Outbound IVR license on top of the Unified CCX premium license in your Unified CCX.</td>
</tr>
<tr>
<td>Overall IVR Outbound Stats</td>
<td>Provides real-time statistics across all predictive and progressive campaigns for all the configured Outbound IVR campaigns since the statistics were last reset. <strong>Note</strong> This report will be available only if you have an Outbound IVR license on top of the Unified CCX premium license in your Unified CCX.</td>
</tr>
<tr>
<td>Overall Chat Cisco Unified Contact Center Express Stats</td>
<td>Provides information about Chat Unified CCX resources and contact information. This report is available only if Unified CCX has been configured.</td>
</tr>
<tr>
<td>Overall Cisco Unified Contact Center Express Stats</td>
<td>Provides information about Unified CCX resources and calls. This report is available only if Unified CCX has been configured.</td>
</tr>
<tr>
<td>Resource Cisco Unified Contact Center Express Stats</td>
<td>Provides information about Unified CCX resources activity.</td>
</tr>
</tbody>
</table>
## 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

- Mozilla Firefox or Internet Explorer is recommended 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

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

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 185
- Application Tasks Summary, on page 186
- Application Tasks Real-Time Report, on page 187
- Engine Tasks Real-Time Report, on page 187
- Contacts Report, on page 188
- Applications Report, on page 192
- Sessions Report, on page 192
- Data Source Usage Report, on page 193
- Overall Cisco Unified Contact Center Express Stats Report, on page 193
- CSQ Cisco Unified Contact Center Express Stats Report, on page 197
- Preview Outbound Campaign Cisco Unified Contact Center Express Stats Report, on page 198
- IVR Outbound Campaign Stats Report, on page 203
- Overall IVR Outbound Stats Report, on page 205
- Resource Cisco Unified Contact Center Express Stats Report, on page 206
- Failover Behavior for Unified CCX Stats, on page 208

*High Availability (HA) Setup*

In an HA setup, IVR 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.

Failover in a two-node cluster is available for Unified IP IVR reports as described in the following table.

<table>
<thead>
<tr>
<th>Failover Scenario</th>
<th>Connection Status</th>
<th>Node 1 Status</th>
<th>Node 2 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both nodes are up</td>
<td>Fully Connected</td>
<td>Node ID current/start-time</td>
<td>Node ID current/start-time</td>
</tr>
<tr>
<td>Node 1 is up</td>
<td>Partially Connected</td>
<td>Node ID current/start-time</td>
<td>Node ID Not Connected</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Failover Scenario</th>
<th>Connection Status</th>
<th>Node 1 Status</th>
<th>Node 2 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node 1 is down</td>
<td>Partially Connected</td>
<td>Node ID Not Connected</td>
<td>Node ID current/start-time</td>
</tr>
<tr>
<td>Node 2 is up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both nodes are down</td>
<td>Not Connected</td>
<td>Node ID Not Connected</td>
<td>Node ID Not Connected</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Active contacts that are currently running.</td>
</tr>
<tr>
<td>Inbound</td>
<td>Number of inbound contacts since the statistics were last reset.</td>
</tr>
<tr>
<td>Outbound</td>
<td>Number of outbound contacts since the statistics were last reset.</td>
</tr>
<tr>
<td>Connected</td>
<td>Number of connected contacts since the statistics were last reset. Provides a total for contacts that are connected to resources (for example, a call connected to an ACD agent).</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Terminated | Number of terminated contacts since the statistics were last reset. 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:  
  • Locally—On the local server.  
  • Remotely—On a remote server in the cluster.  
  **Note** Use the + toggle button to access these statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Rejected | Number of rejected contacts since the statistics were last reset. 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:  
  • Channels busy  
  • No channel license  
  • No trigger  
  **Note** Use the + toggle button to access these statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Aborted | Number of aborted contacts since the statistics were last reset. 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.  
  **Note** Java exception codes are dynamic, as they can be generated from a variety of sources.  
  **Note** Use the + toggle button to access these statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Name</td>
<td>Names of the applications that are running or have run.</td>
</tr>
<tr>
<td>Running</td>
<td>Currently running applications.</td>
</tr>
<tr>
<td>Completed</td>
<td>Applications that have stopped running.</td>
</tr>
<tr>
<td>Total</td>
<td>Number of times an application was invoked since the statistics were last reset.</td>
</tr>
<tr>
<td>DTMF VB and AA</td>
<td>Application names configured from the Unified CCX Administration.</td>
</tr>
<tr>
<td>Status</td>
<td>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.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Unique application task ID.</td>
</tr>
<tr>
<td>Node ID</td>
<td>Unique ID for a server in the cluster.</td>
</tr>
<tr>
<td>Application</td>
<td>Name of the application.</td>
</tr>
<tr>
<td>Start Time</td>
<td>Time when the application task started.</td>
</tr>
<tr>
<td>Duration</td>
<td>Length of time that the application has been active.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>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.</td>
</tr>
<tr>
<td>Parent ID</td>
<td>Unique identifier for the parent of the engine task (if any).</td>
</tr>
<tr>
<td>Node ID</td>
<td>Unique identifier for a server in the cluster.</td>
</tr>
<tr>
<td>Server IP Address</td>
<td>IP address identifying the server in the cluster.</td>
</tr>
<tr>
<td>Script</td>
<td>Name of the script that is running the task (if the task is running a Unified CCX script).</td>
</tr>
<tr>
<td>Start Time</td>
<td>Time that the task started.</td>
</tr>
<tr>
<td>Duration</td>
<td>Length of time the task has been active.</td>
</tr>
</tbody>
</table>

**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 189
- Email Detailed Info Report, on page 190
- HTTP Detailed Info Report, on page 190

The following fields are displayed on the Contacts report.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Unique identifier representing a contact.</td>
</tr>
<tr>
<td>Type</td>
<td>Type of contact: Unified CM Telephony call, Cisco agent call, or</td>
</tr>
<tr>
<td>Impl ID</td>
<td>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.</td>
</tr>
<tr>
<td>Node ID</td>
<td>Unique identifier for a server in the cluster.</td>
</tr>
<tr>
<td>Start Time</td>
<td>Time stamp when the contact was created.</td>
</tr>
</tbody>
</table>
### Field | Description
---|---
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Current state of the contact.</td>
</tr>
<tr>
<td>Inbound</td>
<td>If True, this call was received by the Unified CCX server; if False, this call was placed as an outbound call by an application.</td>
</tr>
<tr>
<td>Language</td>
<td>The selected language context of the call.</td>
</tr>
<tr>
<td>Application ID</td>
<td>Unique identifier of the associated application.</td>
</tr>
<tr>
<td>Called Number</td>
<td>Called number for this call leg from the perspective of the called party.</td>
</tr>
<tr>
<td>Dialed Number</td>
<td>Dialed number for this call leg from the perspective of the calling party.</td>
</tr>
<tr>
<td>Calling Number</td>
<td>Calling number of the originator of this call.</td>
</tr>
<tr>
<td>ANI</td>
<td>Automatic number identification.</td>
</tr>
<tr>
<td>DNIS</td>
<td>Dialed number identification service.</td>
</tr>
<tr>
<td>CLID</td>
<td>Caller ID.</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Type</td>
<td>Information on how the call contact arrived in the system.</td>
</tr>
<tr>
<td>Last Redirected Number</td>
<td>Number from which the last call diversion or transfer was invoked.</td>
</tr>
<tr>
<td>Original Called Number</td>
<td>Originally called number.</td>
</tr>
<tr>
<td>Original Dialed Number</td>
<td>Originally dialed number.</td>
</tr>
<tr>
<td>ANI Digits</td>
<td>Automatic Number Identification information indicator digit codes.</td>
</tr>
<tr>
<td>CED</td>
<td>Entered digits that were gathered by the network before the call was received.</td>
</tr>
</tbody>
</table>

**Note** Calls running Unified ICME applications are also reported here.

### 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Current state of the contact.</td>
</tr>
<tr>
<td>Inbound</td>
<td>If True, this email message was received by the Unified CCX server; if False, this email was created by an application.</td>
</tr>
</tbody>
</table>

**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. |
The following fields are displayed on the HTTP Detailed Info report.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Current state of the contact.</td>
</tr>
<tr>
<td>Inbound</td>
<td>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.</td>
</tr>
<tr>
<td>Language</td>
<td>Language currently associated with the HTTP request.</td>
</tr>
<tr>
<td>Application ID</td>
<td>Unique identifier of the associated application.</td>
</tr>
<tr>
<td>Authentication Type</td>
<td>Name of the authentication scheme used to protect the servlet; for example, &quot;BASIC&quot; or &quot;SSL.&quot;</td>
</tr>
<tr>
<td>Character Encoding</td>
<td>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 variable CONTENT_LENGTH.</td>
</tr>
<tr>
<td>Content Length</td>
<td>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.</td>
</tr>
<tr>
<td>Content Type</td>
<td>Type of HTTP contact request.</td>
</tr>
<tr>
<td>Request Language</td>
<td>Preferred language for client content (the language that the client accepts for its content), based on the Accept-Language header.</td>
</tr>
<tr>
<td>Path Info</td>
<td>Any extra path information associated with the URL the client sent when the HTTP request was made.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Name and version of the protocol the request uses in the form: protocol/majorVersion.minorVersion; for example, HTTP/1.1 Note: This value is the same as the value of the CGI variable SERVER_PROTOCOL.</td>
</tr>
<tr>
<td>Remote Address</td>
<td>IP address of the client that sent the request Note: This value is the same as the value of the CGI variable REMOTE_ADDR.</td>
</tr>
<tr>
<td>Remote Host</td>
<td>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.</td>
</tr>
<tr>
<td>Remote User</td>
<td>Login of the user making this request, if the user has been authenticated.</td>
</tr>
<tr>
<td>Requested Session ID</td>
<td>HTTP session ID as specified by the client.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request URL</td>
<td>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.</td>
</tr>
<tr>
<td>Name</td>
<td>Unique name of the currently loaded application.</td>
</tr>
<tr>
<td>ID</td>
<td>Application ID.</td>
</tr>
<tr>
<td>Type</td>
<td>Type of application that is currently running (for example, a Cisco Script Application).</td>
</tr>
<tr>
<td>Description</td>
<td>Description of the application as entered on the Unified CCX Administration web site.</td>
</tr>
<tr>
<td>Enabled</td>
<td>If True, the application is enabled; if False, the application is disabled.</td>
</tr>
<tr>
<td>Max. Sessions</td>
<td>Maximum number of simultaneous task instances that can run simultaneously on the Unified CCX server.</td>
</tr>
<tr>
<td>Valid</td>
<td>If True, the application is valid; if False, the application is invalid.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Session ID.</td>
</tr>
<tr>
<td>Note</td>
<td>This identifier is guaranteed to remain unique for a period of 12 months.</td>
</tr>
<tr>
<td>Mapping ID</td>
<td>User- or system-defined identifier that maps to this session.</td>
</tr>
<tr>
<td>Node ID</td>
<td>Unique identifier for a server in the cluster.</td>
</tr>
<tr>
<td>Parent</td>
<td>Sessions that were created as a result of consult calls propagated in the system.</td>
</tr>
</tbody>
</table>
Field | Description
---|---
Creation Time | Creation time of the session.
State | Current state of the session. **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.
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source Name</td>
<td>Name of the data source, as configured through the Unified CCX Administration web interface.</td>
</tr>
<tr>
<td>Available Connections</td>
<td>Number of connections available.</td>
</tr>
<tr>
<td>Busy Connections</td>
<td>Number of busy connections. <strong>Note</strong> Busy + available = Maximum number of connections configured.</td>
</tr>
<tr>
<td>Checkouts Granted</td>
<td>Number of times the database connections have been used up since the statistics were last reset.</td>
</tr>
<tr>
<td>Checkouts Denied</td>
<td>Number of times the Database connections have been denied since the statistics were last reset.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Information</strong></td>
<td></td>
</tr>
<tr>
<td>CSQs</td>
<td>Number of CSQs currently configured. If a CSQ is added or removed, this statistic reflects that change.</td>
</tr>
<tr>
<td>Logged-in Resources</td>
<td>Number of resources currently logged in.</td>
</tr>
<tr>
<td>Talking Resources</td>
<td>Number of resources currently talking.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> This number includes resources in Talking, Work, and Reserved states.</td>
</tr>
<tr>
<td>Ready Resources</td>
<td>Number of resources currently ready.</td>
</tr>
<tr>
<td>Not Ready Resources</td>
<td>Number of resources currently not ready.</td>
</tr>
<tr>
<td><strong>Call Information — Inbound</strong></td>
<td></td>
</tr>
<tr>
<td>Total Contacts</td>
<td>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.</td>
</tr>
<tr>
<td>Contacts Waiting</td>
<td>Number of contacts waiting to be connected to a resource.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> A contact is shown as waiting until the call is answered by the agent. This means that, even if the phone is ringing at the agent, the contact will still show as waiting in RTR.</td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by a resource.</td>
</tr>
<tr>
<td>Oldest Call in Queue</td>
<td>Displays the wait time for the oldest contact in the queue.</td>
</tr>
<tr>
<td>Contacts Abandoned</td>
<td>Number of contacts that have arrived and disconnected before being connected to a resource.</td>
</tr>
</tbody>
</table>
**Unified CCX Reporting**

**Unified CCX Real-Time Reports**

---

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg Talk Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Avg Wait Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Longest Talk Duration</td>
<td>Longest talk duration (in seconds) of a contact. Talk duration does not include hold time.</td>
</tr>
<tr>
<td>Longest Wait Duration</td>
<td>Longest wait (in seconds) for a contact to be connected to a resource. Wait duration does not include hold time.</td>
</tr>
</tbody>
</table>

**Call Information — Preview Outbound**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Total number of preview outbound calls currently previewed or connected to agents.</td>
</tr>
<tr>
<td>Preview</td>
<td>Total number of preview outbound calls currently previewed but have not been accepted, rejected, or closed by the agents.</td>
</tr>
<tr>
<td>Connected</td>
<td>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.</td>
</tr>
<tr>
<td>Offered</td>
<td>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.</td>
</tr>
<tr>
<td>Accepted</td>
<td>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.</td>
</tr>
<tr>
<td>Rejected</td>
<td>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. The number Rejected is also incremented each time an agent drops the preview call while it is ringing at the customer’s contact.</td>
</tr>
</tbody>
</table>

---

Cisco Unified Contact Center Express Administration Guide, Release 10.0(1)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>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.</td>
</tr>
<tr>
<td>Timed-Out</td>
<td>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.</td>
</tr>
</tbody>
</table>
| Invalid Number      | 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.  
**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. |
| Voice               | The number of preview outbound calls that ended in successful customer contact. This means that an agent accepted the call (by clicking Accept) and selected a classification of Voice (default) or Do Not Call for this contact.                                           |
| Answering Machine   | 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.  
**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. |
| Requested Callback  | 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 theCallBack 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. |
| Avg Talk Duration   | 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. |
| Longest Talk Duration| 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.                                                  |
**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the CSQ.</td>
</tr>
<tr>
<td>Talking/Ready Resources/Not Ready Resources/Logged-In Resources</td>
<td>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. <strong>Note</strong> 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.</td>
</tr>
<tr>
<td>Total Contacts</td>
<td>Number of total contacts since the statistics were last reset for this CSQ.</td>
</tr>
<tr>
<td>Contacts Waiting</td>
<td>Number of contacts waiting to be connected to a resource in this CSQ. This column also displays how long the oldest contact has been waiting.</td>
</tr>
<tr>
<td>Contacts [oldest contact in queue]</td>
<td>Duration of longest currently waiting contact.</td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by this CSQ.</td>
</tr>
<tr>
<td>Contacts Abandoned</td>
<td>Number of contacts that have been abandoned by this CSQ.</td>
</tr>
<tr>
<td>Contacts Dequeued</td>
<td>Number of contacts that have been dequeued from this CSQ.</td>
</tr>
<tr>
<td>Avg Talk Duration</td>
<td>Average time (in seconds) agents in this CSQ spent talking to contacts.</td>
</tr>
<tr>
<td>Avg Wait Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Longest Talk Duration</td>
<td>Longest time (in seconds) agents in this CSQ spend talking to contacts.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign</td>
<td>The name of the preview outbound campaign.</td>
</tr>
</tbody>
</table>
| Status     | The current activation state of the preview outbound campaign:  
  • 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, 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. |
<p>| 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, 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. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rejected</td>
<td>The number of outbound calls that were skipped or rejected by an agent as part of this preview outbound campaign. 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. The number Rejected is also incremented each time an agent drops the preview call while it is ringing at the customer contact.</td>
</tr>
<tr>
<td>Closed</td>
<td>The number of outbound contacts that were closed by agents as part of this preview outbound campaign. This means that the agent selected Skip-Close or Reject-close. These contacts will not be dialed again.</td>
</tr>
<tr>
<td>Timed-Out</td>
<td>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.</td>
</tr>
<tr>
<td>Invalid Number</td>
<td>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. <strong>Note</strong> 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.</td>
</tr>
<tr>
<td>Voice</td>
<td>The number of outbound calls that ended in successful customer contact. This means that an agent accepted the call (by clicking Accept) and selected a classification of Voice or Do Not Call for this contact.</td>
</tr>
<tr>
<td>Answering Machine</td>
<td>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. <strong>Note</strong> 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.</td>
</tr>
<tr>
<td>Requested Callback</td>
<td>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.</td>
</tr>
<tr>
<td>Avg Talk Duration</td>
<td>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.</td>
</tr>
</tbody>
</table>
**Field** | **Description**
--- | ---
Longest Talk Duration | 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.

**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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the chat CSQ</td>
</tr>
<tr>
<td>Busy Resources/</td>
<td>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.</td>
</tr>
<tr>
<td>Ready Resources/</td>
<td>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.</td>
</tr>
<tr>
<td>Not Ready Resources/</td>
<td>Logged-In Resources</td>
</tr>
<tr>
<td>Total Contacts</td>
<td>Number of total contacts presented to this queue since last reset of statistics.</td>
</tr>
<tr>
<td>Contacts Waiting</td>
<td>Number of contacts waiting in this queue with the duration of longest waiting contact in this queue.</td>
</tr>
<tr>
<td>[Oldest Contact in Queue]</td>
<td></td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by this queue since last reset of statistics.</td>
</tr>
<tr>
<td>Contacts Abandoned</td>
<td>Number of contacts that have been abandoned in this queue since last reset of statistics.</td>
</tr>
<tr>
<td>Avg Contact Handling Duration</td>
<td>Average time (in HH:MM:SS) agents in this CSQ spent chatting with contacts.</td>
</tr>
<tr>
<td>Avg Wait Duration</td>
<td>Average wait time (in HH:MM:SS) a contact spent in queue waiting for an agent.</td>
</tr>
<tr>
<td>Longest Contact Handling Duration</td>
<td>Longest time (in HH:MM:SS) agents in this CSQ spent chatting with contacts.</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name (ID)</td>
<td>Unique identifier of the resource.</td>
</tr>
<tr>
<td>State</td>
<td>Current state of the resource.</td>
</tr>
<tr>
<td>Duration in State</td>
<td>Length of time (in HH:MM:SS) the resource has remained in the current state.</td>
</tr>
<tr>
<td>Avg Resource Busy Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Longest Resource Busy Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Contacts Presented</td>
<td>Number of contacts that have been presented to this resource.</td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by this resource.</td>
</tr>
</tbody>
</table>

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.

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.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Information</strong></td>
<td></td>
</tr>
<tr>
<td>CSQs</td>
<td>Number of chat CSQs currently configured. If a chat CSQ is added or removed, this statistic reflects that change.</td>
</tr>
<tr>
<td>Logged-in Resources</td>
<td>Number of resources currently logged in.</td>
</tr>
<tr>
<td>Busy Resources</td>
<td>Number of resources currently busy.</td>
</tr>
<tr>
<td>Ready Resources</td>
<td>Number of resources currently ready.</td>
</tr>
<tr>
<td>Not Ready Resources</td>
<td>Number of resources currently not ready.</td>
</tr>
<tr>
<td><strong>Contact Information</strong></td>
<td></td>
</tr>
<tr>
<td>Total Contacts</td>
<td>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.</td>
</tr>
<tr>
<td>Contacts Waiting</td>
<td>Number of contacts waiting to be connected to a resource.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> A contact is shown as waiting until the contact is answered by the agent.</td>
</tr>
<tr>
<td>Oldest Contact in Queue</td>
<td>Displays the wait time for the oldest contact in the queue.</td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by a resource.</td>
</tr>
<tr>
<td>Contacts Abandoned</td>
<td>Number of contacts that are routed to the CSQ since midnight but are abandoned due to one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Customer ended the chat as the chat was not answered by an agent.</td>
</tr>
<tr>
<td></td>
<td>• Customer chat was disconnected.</td>
</tr>
<tr>
<td></td>
<td>• No agents were available.</td>
</tr>
<tr>
<td></td>
<td>• All agents were busy.</td>
</tr>
<tr>
<td>Avg Contact Handling Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Avg Wait Duration</td>
<td>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.</td>
</tr>
<tr>
<td>Longest Contact Handling Duration</td>
<td>Longest contact handling duration (in HH:MM:SS) of a contact.</td>
</tr>
</tbody>
</table>
**IVR Outbound Campaign Stats Report**

If you have an Outbound IVR license, use the IVR Outbound Campaign Stats report to view real-time statistics on each progressive and predictive IVR Outbound campaign configured in Unified CCX.

This report will be available only if you have an Outbound IVR license on top of Unified CCX premium license in your Unified CCX.

To access the IVR Outbound Campaign Stats report, choose **Reports > IVR Outbound Campaign Stats** from the Application Reporting menu bar. The following fields are displayed on the IVR Outbound Campaign Stats report.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longest Wait Duration</td>
<td>Longest wait (in HH:MM:SS) for a contact to be connected to a resource.</td>
</tr>
<tr>
<td><strong>Field</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Campaign Name</td>
<td>The name of the progressive or predictive campaign.</td>
</tr>
<tr>
<td>Status</td>
<td>The current activation state of the campaign:</td>
</tr>
<tr>
<td></td>
<td>• Running: an active progressive or predictive campaign</td>
</tr>
<tr>
<td></td>
<td>• Stopped: an inactive progressive or predictive campaign.</td>
</tr>
<tr>
<td>Type</td>
<td>The dialer type of the campaign, which can be one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Progressive</td>
</tr>
<tr>
<td></td>
<td>• Predictive</td>
</tr>
<tr>
<td>Attempted</td>
<td>The number of calls that were attempted since the statistics were last reset.</td>
</tr>
<tr>
<td></td>
<td>Attempted will be equal to sum of the following counters - Voice + Answering Machine + Invalid Number + Fax/Modem + No Answer + Busy + Failed if there are no Customer Abandoned calls.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Voice</td>
<td>The number of calls that are connected to live voice since the statistics were last reset.</td>
</tr>
<tr>
<td></td>
<td>• If you have selected Answering Machine Treatment as &quot;Abandon Call&quot; for an Outbound IVR campaign through Campaign Configuration web page, Voice = Active + System Abandoned.</td>
</tr>
<tr>
<td></td>
<td>• If you have selected Answering Machine Treatment as &quot;Transfer to IVR&quot; for an Outbound IVR campaign through Campaign Configuration web page, Voice + Answering Machine = Active + System Abandoned.</td>
</tr>
<tr>
<td>Note</td>
<td>Whenever there is an exception while executing some steps in an IVR script, the call will be marked as System Abandoned after it has been marked as Voice and Active. 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.</td>
</tr>
<tr>
<td>Answering Machine</td>
<td>The number of calls that reached an answering machine since the statistics were last reset.</td>
</tr>
<tr>
<td>Invalid Number</td>
<td>The number of calls that reached an invalid number due to the following reason since the statistics were last reset:</td>
</tr>
<tr>
<td></td>
<td>• A failed call as a result of gateway timeout or the gateway is down while placing the call.</td>
</tr>
<tr>
<td>Fax/Modem</td>
<td>The number of calls that reached fax or modem since the statistics were last reset.</td>
</tr>
<tr>
<td>No Answer</td>
<td>The number of calls that were not answered since the statistics were last reset.</td>
</tr>
<tr>
<td>Busy</td>
<td>The number of calls that reached a busy destination since the statistics were last reset.</td>
</tr>
<tr>
<td>Failed</td>
<td>The number of calls that were failed due to any one of the following reasons since the statistics were last reset:</td>
</tr>
<tr>
<td></td>
<td>• Dialer asked the Gateway to cancel a call that has not yet been placed.</td>
</tr>
<tr>
<td></td>
<td>• Gateway has declined the call.</td>
</tr>
<tr>
<td></td>
<td>• Gateway failure or configuration issues at the Gateway.</td>
</tr>
<tr>
<td>Active</td>
<td>The number of calls that were connected to Outbound IVR ports since the statistics were last reset. All the voice calls that will be connected to Outbound IVR ports will be marked as active. If you have selected Answering Machine Treatment as &quot;Transfer to IVR&quot;, the answering machine calls that are getting transferred to Outbound IVR ports will also be marked as active.</td>
</tr>
<tr>
<td>Customer Abandoned</td>
<td>The number of calls that were abandoned by the customer since the statistics were last reset.</td>
</tr>
</tbody>
</table>
Thenumber of callsthat were abandoned dueto non- availability of ports or any issues at
system level since the statistics were last reset.

Abandon Rate
(in %)
The call abandon rate since the statistics were last reset.
Abandon Rate = (System Abandoned/Voice)*100

Overall IVR Outbound Stats Report
If you have an IVR Outbound license, you can use the Overall Outbound IVR Stats report to view real- time
statistics across all predictive and progressive campaigns since the statistics were last reset.

Note
This report will be available only if you have an Overall IVR Outbound license on top of Unified CCX
premium license in your Unified CCX.

To access the Overall IVR Outbound Stats report, choose Reports > Overall IVR Outbound Stats from the
Application Reporting menu bar. The following fields are displayed on the Overall IVR Outbound Stats report
for all the configured IVR outbound campaigns.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempted</td>
<td>The total number of Outbound IVR calls that were attempted since the statistics were last reset.</td>
</tr>
<tr>
<td>Voice</td>
<td>The total number of Outbound IVR calls that were connected to live voice since the statistics were last reset.</td>
</tr>
<tr>
<td>Answering Machine</td>
<td>The total number of Outbound IVR calls that reached answering machine since the statistics were last reset.</td>
</tr>
<tr>
<td>Invalid Number</td>
<td>The total number of Outbound IVR calls that reached an invalid number since the statistics were last reset.</td>
</tr>
<tr>
<td>Fax/Modem</td>
<td>The total number of Outbound IVR calls that reached fax or modem since the statistics were last reset.</td>
</tr>
<tr>
<td>No Answer</td>
<td>The total number of Outbound IVR calls that were not answered since the statistics were last reset.</td>
</tr>
<tr>
<td>Busy</td>
<td>The total number of Outbound IVR calls that reached a busy destination since the statistics were last reset.</td>
</tr>
<tr>
<td>Failed</td>
<td>The total number of failed Outbound IVR calls for all the Outbound IVR campaigns.</td>
</tr>
<tr>
<td>Active</td>
<td>The total number of Outbound IVR calls that were connected to Outbound IVR ports since the statistics were last reset.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Customer Abandoned</td>
<td>The total number of Outbound IVR calls that were abandoned by the customer since the statistics were last reset.</td>
</tr>
<tr>
<td>System Abandoned</td>
<td>The total number of Outbound IVR calls that were abandoned by the system since the statistics were last reset.</td>
</tr>
</tbody>
</table>

**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 resource 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name (ID)</td>
<td>Unique identifier of the resource.</td>
</tr>
<tr>
<td>State</td>
<td>Current state of the resource.</td>
</tr>
<tr>
<td>Duration in State</td>
<td>Length of time (in seconds) the resource has remained in the current state.</td>
</tr>
<tr>
<td>Contacts Presented</td>
<td>Number of contacts that have been connected to this resource.</td>
</tr>
<tr>
<td>Contacts Handled</td>
<td>Number of contacts that have been handled by this resource.</td>
</tr>
<tr>
<td>Avg Talk Duration</td>
<td>Average time (in seconds) that this resource spends talking to contacts.</td>
</tr>
<tr>
<td>Avg Hold Duration</td>
<td>Average time (in seconds) that the resource keeps contacts on hold.</td>
</tr>
<tr>
<td>Longest Talk Duration</td>
<td>Longest time (in seconds) that this resource has spent talking to a contact.</td>
</tr>
<tr>
<td>Longest Hold Duration</td>
<td>Longest time (in seconds) that this resource has placed a call on hold.</td>
</tr>
<tr>
<td>Outbound Offered</td>
<td>Total number of outbound calls offered to this resource. 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.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Outbound Accepted</td>
<td>Total number of outbound calls accepted by this resource. 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. For transferred or conferenced outbound calls, the call is considered handled by the resource if it is answered by that resource.</td>
</tr>
<tr>
<td>Outbound Rejected</td>
<td>The number of outbound calls that were skipped or rejected by this agent. This means that the agent selected Reject, Skip, or Cancel Reservation. These contacts will be dialed again. The number Rejected is also incremented each time an agent drops the preview call while it is ringing at the customer’s contact.</td>
</tr>
<tr>
<td>Outbound Closed</td>
<td>The number of outbound contacts that were closed by this agent. This means that the agent selected Skip-Close or Reject-close. These contacts will not be dialed again.</td>
</tr>
<tr>
<td>Outbound Timed-Out</td>
<td>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 timed out for multiple agents, this field is incremented each time the contact is timed out for each agent.</td>
</tr>
<tr>
<td>Outbound Voice</td>
<td>The number of outbound calls that ended in successful customer contact for this resource. This means that the agent accepted the call (by clicking Accept) and selected a classification of Voice or Do Not Call for this contact.</td>
</tr>
<tr>
<td>Outbound Avg Talk Duration</td>
<td>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. This talk duration includes talk time spent by a resource handling an outbound call that was transferred or conferenced to a route point.</td>
</tr>
<tr>
<td>Outbound Avg Hold Duration</td>
<td>The average time in HH:MM:SS (hours, minutes, seconds) that the Resource has spent holding an outbound call among accepted calls. The duration considers all calls that were Agent Accepted and classified as Voice.</td>
</tr>
<tr>
<td>Outbound Longest Talk Duration</td>
<td>The longest time in HH:MM:SS (hours, minutes, seconds) that an agent has spent talking on an outbound call. The durations consider all calls that were Agent Accepted and classified as Voice.</td>
</tr>
<tr>
<td>Outbound Longest Hold Duration</td>
<td>The average time in HH:MM:SS (hours, minutes, seconds) that the Resource has spent holding on the outbound calls among accepted calls. The duration considers all calls that were Agent Accepted and classified as Voice.</td>
</tr>
</tbody>
</table>
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 Contacts Real-Time Report
To clear stuck calls or contacts from the Unified CCX system:

Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Choose the contact from Reports &gt; Contacts.</td>
</tr>
<tr>
<td>2</td>
<td>From the Application Reporting menu bar, choose Tools &gt; 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.</td>
</tr>
<tr>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>4</td>
<td>Click Yes. The Unified CCX system removes the contact from all its queues.</td>
</tr>
</tbody>
</table>

Clear Stuck Calls from Overall Cisco Unified CCX Stats
To clear stuck calls/contacts from the Unified CCX system:

Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Choose Reports &gt; Overall Cisco Unified Contact Center Express Stats.</td>
</tr>
<tr>
<td>2</td>
<td>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.</td>
</tr>
<tr>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>4</td>
<td>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.</td>
</tr>
<tr>
<td>5</td>
<td>Click Yes. The Unified CCX system removes the contact from all its queues.</td>
</tr>
</tbody>
</table>

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.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polling Interval</td>
<td>Time between two requests to the server for new statistics by the client.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Server Connect Retry Count</td>
<td>The number of times that the Unified CCX Administration web interface should attempt to reconnect to the Unified CCX server.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> If an error occurs, an Error dialog box opens to alert you that the server is not communicating with the web interface.</td>
</tr>
<tr>
<td>Show Logged Off Resources</td>
<td>Specifies whether logged off agents appear in reports.</td>
</tr>
</tbody>
</table>

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.

LiveData reports can only be run by agents, supervisors, and reporting users.

For more information, see the following guides:


**Note**

Historical Reporting Client (HRC) is not available from 10.0(1).

### Cisco Finesse

You can configure the LiveData 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.
• License type under which the user's organization runs Unified Intelligence Center. For example, organizations that use a Standard license cannot access the Report Definition functions.
• 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only show currently active users</td>
<td>Check the check box to display users who are currently active.</td>
</tr>
<tr>
<td>Name Contains</td>
<td>Use this filter field to narrow the list of names or to move to a specific name.</td>
</tr>
<tr>
<td>User Name</td>
<td>The domain and user name (domain\name).</td>
</tr>
<tr>
<td>First Name</td>
<td>The user's first name.</td>
</tr>
<tr>
<td>Last Name</td>
<td>The user's last name.</td>
</tr>
</tbody>
</table>

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.
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**

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Contains</td>
<td>Use this filter field to narrow down the list of group names or to move to a specific name.</td>
</tr>
<tr>
<td>Name</td>
<td>Name of the group.</td>
</tr>
</tbody>
</table>
| 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 **Group1**. The Full Name of Group 3 is **Group1.Group3**. |
| 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:

a) In the Group Name field, enter the name of the group. This field is available only when you create a new group.
b) In the **Description** field, enter or modify text to describe this group.

**Step 3** Under the **Group** tab, perform the following:

a) **Default Group**—From the drop-down list, enter the default group.

b) **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.

c) **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:

a) 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.

b) 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.
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.

If no checkboxes 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissions For panel (top left)</td>
<td>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.</td>
</tr>
<tr>
<td>All Groups panel (top right)</td>
<td>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.</td>
</tr>
<tr>
<td>All Users for the Selected Group panel (bottom right)</td>
<td>This panel shows all members in the group that is highlighted in the All Groups panel above.</td>
</tr>
<tr>
<td>Set Permissions button</td>
<td>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.</td>
</tr>
<tr>
<td>Group Permissions for the selected item</td>
<td>This panel shows the groups that have already been assigned permission for the selected object, and their permission level.</td>
</tr>
</tbody>
</table>
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 username 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissions For panel (top left)</td>
<td>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.</td>
</tr>
<tr>
<td>User List panel (top right)</td>
<td>This panel shows current users. Filter the list and select one or many user names.</td>
</tr>
<tr>
<td>Show Groups button</td>
<td>Click this option to show the All Groups for the selected user panel.</td>
</tr>
<tr>
<td>All Groups for the selected User (bottom right)</td>
<td>This panel shows all groups to which the highlighted username in the User List panel above is a member.</td>
</tr>
<tr>
<td>Set Permissions button</td>
<td>Click this option to open a dialog box where you select the permission level for the object (Execute, Write).</td>
</tr>
<tr>
<td>All Permissions for the selected item</td>
<td>This panel shows users who have permission for the object, and the level of permissions they have.</td>
</tr>
</tbody>
</table>

**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**

1. **Step 1** Log in to the Unified Intelligence Center Reporting Interface.
2. **Step 2** Navigate to **Reports > Stock > Intelligence Center Admin** and click **Audit Trail**. The system opens the **Audit Trail Report Filter** window.
3. **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
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.
Unified CCX Outbound Dialer Configuration

The Unified CCX Outbound Dialer feature, available in the Unified CM version of the Unified CCX product, is bundled along with the Unified CCX Premium license package. This chapter provides conceptual, installation, and configuration information about the Unified CCX Outbound application.

When you upload the Premium license, the Outbound subsystem will automatically appear in the Subsystems menu. With this feature, you can maintain high agent productivity by configuring contact centers for automated Outbound activities and allow agents who are not busy with inbound calls to perform Outbound calls.

- Unified CCX Outbound IVR Dialer Types, page 225
- Outbound Feature for Unified CCX, page 226
- Supported Dialing Modes, page 229
- IVR Subsystem Time Detection, page 233
- Configure Outbound Subsystem, page 234
- RmCm and Outbound Subsystem Verification, page 234
- Configure General Outbound Properties, page 235
- Add New Campaign, page 240
- Import Contacts for Campaign, page 245
- Enable Campaigns, page 247
- Add Area Codes, page 248
- Communication with Agents Desktops, page 248
- Agents Receive Outbound Calls, page 249
- Do Not Call Contacts, page 257

Unified CCX Outbound IVR Dialer Types

In addition to the existing preview outbound dialer option, Unified CCX Release supports IVR-based dialing. You can configure a campaign as an Outbound IVR campaign if you have an Outbound IVR license in addition
to the existing Unified CCX Premium license. If you select the IVR based option for a campaign, the outbound calls will be handled by the IVR scripts. Typical applications include appointment and bill payment reminders.

You can choose any one of the following dialer types for an IVR-based campaign:

- Progressive
- Predictive

Predictive/Progressive Dialer is developed to leverage call control and Answering Machine Detection (AMD) capability of SIP Gateway Interface to perform dialing, call control, and Call Progress Analysis for Outbound campaigns. This offloads call control off the Unified CM since the calls that need not be treated by an agent or an IVR such as no answers, busy tones, and so on are not sent to Unified CM.

You can procure Unified CCX Outbound IVR license based on the IVR ports that you want to use for an Outbound IVR campaign. You need to upload an additional license for Outbound IVR feature. The Outbound IVR feature will not be available with Premium license of Unified CCX (see Unified CCX Requirements, on page 227).

Note

The Outbound feature is not supported in the following Unified CCX packages:

- Unified CCX Standard version
- Unified CCX Enhanced version
- Unified IP IVR

### Outbound Feature for Unified CCX

The Outbound feature provides outbound dialing functionality in addition to existing Unified CCX inbound capabilities. This feature allows agents who are not busy with inbound calls to handle Outbound calls.

With the Outbound feature, customer calls are placed using the Cisco Unified Communications by way of the Unified CM for call control.

### Outbound Characteristics

The Outbound feature has the following characteristics:

- An Outbound subsystem that can be monitored from the control center
- Dialing modes - Direct preview, Progressive and Predictive
- Unified CCX Administration web pages to configure the Outbound feature
- Outbound Historical reports
- Real-Time reports are part of the Unified CCX Administration GUI real-time reporting applet
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
- Cisco Agent Desktop allows agents to handle Outbound calls
- Sequential dialing

**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 IVR 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 IVR feature.

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.

Once you obtain the Outbound IVR license for a specific number of ports, the IVR ports will be distributed between the inbound and outbound IVR calls using the following approach based on the different scenarios explained below.

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 IVR 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 IVR 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 IVR 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.

- 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 Dialing Modes

The Outbound feature in Unified CCX Release supports the following dialing modes:

- Direct preview dialing mode
- Progressive dialing mode
- Predictive dialing mode
This new option in the Outbound Dialer allows agents who are not busy with inbound calls to handle outbound calls, thus maintaining high level of agent productivity.

In Unified CCX, progressive and predictive dialers will be only used for IVR-based campaigns and not for Agent-based campaigns.

**Direct Preview Dialing Mode**

The direct preview dialing mode allows agents to preview a customer call on CAD 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.

The Outbound subsystem presents the agent with a popup window, displaying the customer information prior to placing the Outbound call. The agent has the choice of accepting the call or ignoring it. The Outbound subsystem dials the customer only if the agent accepts the call.

If the agent accepts the call in this mode, the Outbound call is initiated from the agent's phone. Since the call is initiated from the agent's phone, the agent can hear the customer's phone ring and also hear other tones, such as a busy signal.

You must explicitly disable the Call Waiting option on the agent's phone to successfully use this feature. The Call Waiting option must be disabled (default) in Unified CM 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/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.

When Agent A transfers an Outbound call to Agent B, all Preview Outbound option buttons are enabled on Agent B's desktop. Despite all buttons being enabled, Agent B must only select the Do Not Call or the callback buttons at this time.

Likewise, after transferring the call to Agent B, Agent A should not attempt to set or change a callback time for that call.

**Progressive Dialing Mode**

Progressive dialer configuration is set for each campaign at the time of creating a campaign and can be updated at a later point.

In the Progressive Dialing mode, you can specify a fixed number of lines that will always be dialed per available IVR port. 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.
For example, in Progressive dialer if Number of Lines Per Port is 3 and X number of dedicated ports are available for Outbound calls, then the Outbound IVR dialer will dial 3X IVR calls (3*X). Depending on the number of calls that are getting abandoned due to the shortage of dedicated ports which may occur, you might have to adjust the lines per port manually to make the calls efficiently.

An abandoned call occurs when a customer answers the phone, but no port is available to play the prompts to the customer. In some cases, the abandoned call rate is limited by government regulations (typically, less than 3% for telemarketing calls).

**Functions of IVR-Based Progressive Campaign**

The outbound subsystem does the following in an IVR-based Progressive campaign of Unified CCX.

**Procedure**

**Step 1**
The outbound subsystem checks the licensing information to determine the number of available ports for the campaign.

**Step 2**
Then the outbound dialer will multiply the available ports for the campaign with the configured number of lines per port. Based on this output and the number of contacts, it will start dialing the contacts. For instance, if 50 ports are available for a campaign and if you have configured the lines per port as 2 through Unified CCX Application Administration web interface, then it can dial 100 contacts.

**Step 3**
The SIP gateway performs call progressive analysis of the call and informs the outcome of the call to Unified CCX. The outcome of a call can be any of the following:

a) All the dialed contacts, which turns out to be live voice, will be connected to the CTI port, which plays the IVR script and will disconnect the remaining calls.

b) If the dialer detects an answering machine, then it performs either of the following, depending on the option selected in the Answering Machine Treatment field in the Campaign Configuration web page:
   - Connects to the CTI port that plays the IVR script
   - Abandons the call

c) If the dialer detects a fax or modem, then the dialer abandons the call.

d) If the dialer detects a call as low volume, then it performs either of the following, depending on the options selected in the Handle Low Volume as Voice field in the Campaign Configuration web page:
   - If you have selected the Yes radio button in the Handle Low Volume as Voice field, then the dialer considers the call as live voice and connects the call to the CTI port that plays the IVR script.
   - If you have selected the No radio button in the Handle Low Volume as Voice field, then low volume calls are not handled as voice and they are abandoned.
Predictive Dialing Mode

The Predictive Dialing mode works similar to the Progressive Dialing mode in terms of dialing the Outbound IVR calls. The difference remains in tuning the lines per port 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 for transfer to an IVR campaign. The number of lines to dial is calculated by an algorithm and gets updated automatically.

A Predictive Dialer is designed to increase IVR port utilization in a contact center. To increase the chances of reaching a customer, a Predictive Dialer dials several outbound calls to customers per available IVR port. The goal is to dial enough lines to keep the IVR ports busy while not exceeding the configured maximum abandoned call rate.

Predictive Dialing Description

The Outbound IVR feature in predictive dialing works by keeping outbound dialing at a level where the abandoned rate is below the maximum allowed abandon rate. For example, each campaign is configured with a maximum allowed abandon rate. In Predictive mode, the Dialer continuously increments the number of lines being dialed per port until the abandon rate rises to the preconfigured maximum abandon rate. At this point, the Dialer begins lowering the lines per port until the abandon rate goes below the preconfigured maximum. In this way, the Dialer stays just below the preconfigured maximum abandon rate.

Under ideal circumstances, the Dialer internally targets an abandon rate of 85% of the preconfigured maximum abandon rate. Due to the random nature of outbound dialing, the actual attainable abandon rate at any given point in time may vary for your Dialer.

When a campaign starts for the first time, the predictive algorithm starts off with the seed value of Lines Per Port configured through the AppAdmin web interface. The predictive algorithm starts correcting the Lines Per Port value only when the number of calls answered by live voice reaches the value defined by the Predictive Correction Pace.

Consecutive corrections happen after the Predictive Correction Pace is divided by 4, the number of live voice calls. The amount of correction given by the predictive algorithm is controlled by the Predictive Gain as well. The correction factor is multiplied by the Predictive Gain and then it is added to the Lines Per Port of the previous iteration.

Note

It is advisable not to change the Correction Pace and Predictive Gain values unless there is an urgent need to control the output of the predictive algorithm. For example, in cases where a campaign runs for a very short time and the Lines Per Port needs to be corrected at a faster pace, then you can reduce the Predictive Correction Pace and update the value in the Gain field as 1.0, which is the maximum value.

If a campaign runs for multiple days, when the campaign starts up, the predictive algorithm starts off with the Lines Per Port value from the previous day instead of the seed value in the AppAdmin web interface, so that better correction is achieved within a given time.
Configure Outbound IVR Subsystem in Unified CCX

The following identifies the tasks that you need to perform while configuring an Outbound IVR subsystem in Unified CCX.

Procedure

Step 1  Install Unified CCX with Unified CM and perform the initial system setup using the Cisco Unified CCX Administration web interface. See *Installation Guide for Cisco Unified CCX and Cisco Unified IP IVR, Release 9.0(1)*

Step 2  Verify whether you have performed the requirements listed in *Unified CCX Requirements, on page 227.*

Note  You need to have Unified CCX Outbound IVR license on top of Unified CCX premium license to use the Outbound IVR feature

Step 3  Configure the General Outbound properties that are common for all the campaigns.

Step 4  To enable communication between Unified CCX and SIP gateway, configure the SIP Gateway parameters using the SIP Gateway Configuration web page in Unified CCX Application Administration web interface.

Step 5  Create a Call Control Group for Outbound type with the required number of IVR ports to be used for Outbound IVR campaigns.

Step 6  Create an application, which will be used for the Outbound IVR campaign.

Step 7  Create a trigger and assign the newly created Outbound Call Control group to this trigger.

Step 8  Create a new IVR campaign and configure the progressive dialer parameters for this campaign.

Step 9  Import contact for the campaign.

IVR Subsystem 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 subsystem provides the mapping for North American area codes to their corresponding time zones. 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.

**Configure Outbound Subsystem**

To configure the Outbound subsystem, complete the following tasks:

**Procedure**

**Step 1** Provision the RmCM and CSQs.
   a) Configure RmCM.
   b) Create CSQs.
   c) Assign resources to CSQ.

**Step 2** Verify that the RmCM and Outbound subsystems are IN SERVICE.

**Step 3** Configure the general properties of the Outbound subsystem.
   a) Configure customer dialing time range as determined by the regulations of the required region
   b) Configure the dialing prefixes for your geographic area.
   c) Assign the CSQs and % of Logged in Agents for Outbound.

**Step 4** Create campaigns.

**Step 5** Import contacts for each campaign.

**Step 6** Enable campaigns.

**Step 7** 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 of the regions.

**Step 8** Enable direct preview in CDA.

**Step 9** Set up communication with agent desktop.

**Step 10** Agents log in and get ready to receive Outbound calls (agents must belong to CSQs assigned to Outbound).

**RmCm and Outbound Subsystem Verification**

The Outbound subsystem's initial state is **OUT OF SERVICE**. Next, it goes to **INITIALIZING** state, at which point it checks the conditions listed below. If all the conditions are met, the state changes to **IN SERVICE**.

For the Outbound subsystem to be IN SERVICE, the following conditions apply:

- The RmCm subsystem on the same box must also be in service. The RmCm subsystem is considered to be active when you have provisioned the RmCm Provider and its associated agent extensions.
• The Unified CCX Database service (on the publisher node) should be up and running. For example, if you have a dual node (Node A and B) setup with Node A as the publisher node, you need to have the Unified CCX Database service up and running on Node A for the Outbound subsystem to be IN SERVICE.

Note
The publisher node will always be the first node installed in the cluster.

On the standby service, if all four nodes are up and running and RmCM is in service, then the Outbound subsystem is IN SERVICE.

Tip
During a fail over, it might take a couple of minutes before the Outbound subsystem displays the correct state (IN SERVICE) as the verification cycle needs to complete.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Dialing Time Range (hh:mm) Start Time/End Time</td>
<td>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. 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. Default = 8:00 AM to 9:00 PM (USA FCC regulations)</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Preview Call Timeout         | If an agent does not respond to the Outbound preview call on the Cisco Agent Desktop within the timeout duration that is specified in this field, the system sets the agent to the Not Ready state, similar to the behavior for Ring No Answer (RNA) for inbound calls. This is a mandatory field.  
  Default = 60 seconds, Range = 5 to 3600 seconds.                                                                                       |
| Dialing Prefix               | The number that is prepended 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.  
  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'.                                                                 |
| Long Distance Prefix         | 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.  
  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.  
  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'.                                                                 |
| International Prefix         | 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.  
  If the imported number does not contain an international prefix but has a "+" sign prefixed to the phone number, then it is considered to be an international number.                                                                 |
| Local Area Code              | 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.                                                                 |
| Do Not Remove Local Area Code When Dialing | 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. |
### Field

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>This field will be displayed only if you check the <strong>Do Not Remove Local Area Code When Dialing</strong> check box. For local numbers, the long distance prefix will be prefixed only if this check box is checked. 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.</td>
</tr>
<tr>
<td><strong>Assigned CSQs</strong></td>
</tr>
<tr>
<td>Assigned CSQs are CSQs that are used by the Outbound subsystem. This is a mandatory field. To allocate CSQs for Outbound:</td>
</tr>
<tr>
<td>1. Select a CSQ in the <strong>Available CSQs</strong> list.</td>
</tr>
<tr>
<td>2. Select a value from the <strong>% of Logged in Agents for Outbound</strong> drop-down list to indicate what percentage of the CSQ is allocated for Outbound.</td>
</tr>
<tr>
<td>3. Click the left arrow icon to move the CSQ to the <strong>Assigned CSQs</strong> list.</td>
</tr>
<tr>
<td>The selected CSQ is removed from the <strong>Available CSQs</strong> box and appears in the <strong>Assigned CSQs</strong> box with the percentage allocation in parentheses next to the CSQ name.</td>
</tr>
<tr>
<td><strong>Available CSQs</strong></td>
</tr>
<tr>
<td>The Available CSQs pane displays all CSQs configured in the CSQ Configuration page under the RmCm subsystem configuration.</td>
</tr>
<tr>
<td><strong>% of Logged in Agents for Outbound</strong></td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
</tr>
<tr>
<td>The CSQ allocation percentage is defined at the global level and not at a campaign level. 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))].</td>
</tr>
</tbody>
</table>

### 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.

• Invalid number—If the number is invalid, the callback continues to be retried until the callback time limit expires or the agent reaches the customer.

Caution

If a callback is presented and the callback number is invalid (or busy), the callback continues to be retried irrespective of the number of retries set (for normal busy/invalid). It will be retried until the callback time limit expires.

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.
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 **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 IVR license on top of the Premium license for Unified CCX to create a campaign for Outbound IVR.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select the type of the campaign</strong></td>
<td></td>
</tr>
<tr>
<td>Campaign Type</td>
<td>Type of the campaign to be used for outbound calls. You can specify any one of the following two campaign types:</td>
</tr>
<tr>
<td></td>
<td>• Agent-based - If you select this, all the outbound calls in a campaign will be handled by the available agents.</td>
</tr>
<tr>
<td></td>
<td>• IVR-based - If you select the IVR-based option, the outbound calls in a campaign will be handled by the IVR scripts.</td>
</tr>
<tr>
<td><strong>Select the type of dialer for the campaign</strong></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>The dialer type options available for a campaign will vary depending on the selected Campaign Type.</td>
</tr>
<tr>
<td></td>
<td>• If you select Agent-based campaign type, then you can select the dialer type:</td>
</tr>
<tr>
<td></td>
<td>• Direct Preview</td>
</tr>
<tr>
<td></td>
<td>• If you select IVR-based campaign type, then you can select any one of the following dialer types:</td>
</tr>
<tr>
<td></td>
<td>• Progressive (default)</td>
</tr>
<tr>
<td></td>
<td>• Predictive</td>
</tr>
</tbody>
</table>
You cannot change the Campaign Type and Dialer Type for an existing campaign.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign Name</td>
<td>Name of the campaign (must be a unique identifier). This is a mandatory field.</td>
</tr>
<tr>
<td>Enabled</td>
<td>Indicates to the Outbound subsystem whether this campaign is currently active. Default = No</td>
</tr>
<tr>
<td>Description</td>
<td>Description of the campaign.</td>
</tr>
<tr>
<td>Start Time/End Time (hh:mm) AM PM Time Zone</td>
<td>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).</td>
</tr>
<tr>
<td>Campaign Calling Number</td>
<td>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.</td>
</tr>
<tr>
<td>Application Trigger</td>
<td>This is the JTAPI trigger associated with this campaign. There will one-to-one mapping between a campaign and an application trigger. Hence, only those triggers that are not associated with any other campaigns are displayed in the trigger list.</td>
</tr>
<tr>
<td>Application Name</td>
<td>The name of the application associated with the above-mentioned JTAPI trigger. This field is auto-populated.</td>
</tr>
<tr>
<td>Maximum Attempts to Dial Contact</td>
<td>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.</td>
</tr>
<tr>
<td>Callback Time Limit</td>
<td>The duration before and after the scheduled callback time during which the Outbound subsystem attempts to place 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. Default = 15 minutes, Range = 1 to 60 minutes.</td>
</tr>
</tbody>
</table>
Add New Campaign

Unified CCX Outbound Dialer Configuration

Field | Description
--- | ---
Dialing Options (displayed only if you have selected IVR-based campaign type) | 
Number of Dedicated Ports | 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.

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.

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:

- 20 ports for Campaign1, which runs between 10-12 pm and
- 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:
  - 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

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.

See Unified CCX Requirements, on page 227 to know how the licensed IVR ports are distributed between the inbound and outbound IVR calls in different scenarios.

Lines Per Port (1-3) | 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.

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.

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.

**Note** If you change this value in the middle, the predictive algorithm will take the updated value in this field during the next iteration.

This is a mandatory field.

Default value = 1.5; Range = 1 to 3.
### Handle Low Volume as Voice
Determines whether a low volume call should be treated as voice or disconnected. Select **Yes** or **No** radio button accordingly. Default is Yes, which means low volume calls are handled as voice and they are connected to the IVR port.

### Answering Machine Treatment
This field enables you to specify how to handle an outbound call if it detects an answering machine. If the call detects an answering machine, you can choose to abandon the call or transfer it to IVR by selecting the desired radio button in this field. Transfer to IVR radio button is enabled by default.

### Maximum Lines Per Port (1-3)
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. This is a mandatory field. Default value = 3.0, Range = 1 to 3.

### Predictive Correction Pace (10-1000)
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 parameter. This is a mandatory field. Default value = 100, Range = 10 to 1000.

**Note** It is advisable not to change this value.

### Predictive Gain
The Gain parameter controls the size of the lines per port corrections. This is directly proportional to the size of the lines per port correction. This is a mandatory field. Default value = 1.0, Range = Greater than 0 to 1.0.

**Note** It is advisable not to change this value.

### Call Abandon Limit (0-100)
Call abandon percentage, which should be within the limit specified by Federal Trade Commission (FTC). This is a mandatory field. 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.

### Dial Settings (displayed only if you have selected IVR-based campaign type)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Answer Ring Limit</td>
<td>The duration for which the Progressive/Predictive dialer should allow the phone to ring before disconnecting an unanswered call. Default is 15 seconds, which means that the dialer should wait for a minimum of 15 seconds before disconnecting a call. Range = 1-60 seconds.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>Abandoned Call Wait Time</td>
<td>If the customer disconnects the call within the time set here, then the call is classified as customer abandoned. This is a mandatory field. Default value = 2 seconds, Range = 1 to 10 seconds.</td>
</tr>
</tbody>
</table>

**Retries (displayed only if you have selected IVR-based campaign type):** Set the value for the following four fields as "0" if you want to disable retry option for an existing IVR campaign.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Answer Delay</td>
<td>Duration (in minutes) for which the dialer waits before calling back a no-answer call. Default value = 60 minutes.</td>
</tr>
<tr>
<td>Busy Signal Delay</td>
<td>Duration (in minutes) for which the dialer waits before calling back a busy telephone number. Default value = 60 minutes.</td>
</tr>
<tr>
<td>Customer Abandoned Delay</td>
<td>If a customer abandons a call, the duration (in minutes) after which the dialer should call the customer back. Default value = 30 minutes.</td>
</tr>
<tr>
<td>Dialer Abandoned Delay</td>
<td>If the dialer abandons a call, the duration (in minutes) after which the dialer should call back the customer. Default value = 60 minutes.</td>
</tr>
</tbody>
</table>

**Displayed only if you have selected Agent Based campaign type**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Records Cache Size</td>
<td>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. Once all the records retrieved for a campaign have been dialed, the Outbound subsystem fetches 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. 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. Default = 20, Range = 1 to 100</td>
</tr>
<tr>
<td>Answering Machine Retry</td>
<td>If you select Yes, then the Outbound Subsystem retries the contact after all the callbacks and pending contacts for the campaign are dialed out. Default = No</td>
</tr>
</tbody>
</table>
Determines the action that should be taken on the contacts that were not called back. The three options for this field are:

- Reschedule for same time next business day (default)
- Mark it for a retry
- Close the record.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callback Missed</td>
<td>Determines the action that should be taken on the contacts that were not called back.</td>
</tr>
<tr>
<td>Assigned CSQs</td>
<td>CSQs from which agents are selected for Outbound calls for this campaign. This is a mandatory field.</td>
</tr>
<tr>
<td>Available CSQs</td>
<td>CSQs that have been allocated for Outbound and are not yet assigned to this campaign.</td>
</tr>
</tbody>
</table>

**Step 3**

Click **Add** or **Save** to save the configuration changes. While saving a new or updated IVR campaign, the Outbound IVR 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 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 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 IVR campaign.

Once you create a campaign, you need to import contacts for the campaign.

---

## Import Contacts for Campaign

**Attention**

You can 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. You can have a total of 1 million remaining contacts for a campaign.

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.
You must verify all the contacts against the national do_not_call list before importing them.

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 Phone 1 value as the Phone 1, Phone 2, or Phone 3 value, or the same Phone 2 value as the Phone 1, Phone 2, or Phone 3 value, or the same Phone 3 value as the Phone 1, Phone 2, or Phone 3 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.

**Note** DialTime field is applicable only for UCCX Agent Preview and not for IVR campaigns. As the contacts uploaded with DialTime field for IVR based campaigns will not be dialed out. Because the records imported with DialTime will be set with CallStatus as 4 (callback). However, the IVR dialer reads records with CallStatus as 8 (retries with delay) and pending records.
Step 5  Navigate to the directory that contains the imported fields in the same order as they appear in the text file.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the campaign.</td>
</tr>
<tr>
<td>Start Time/End Time (hh:mm) AM PM</td>
<td>Start Time and End Time fields indicate the time range during which the campaign runs.</td>
</tr>
<tr>
<td>Remaining Contacts</td>
<td>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.</td>
</tr>
<tr>
<td>Enabled</td>
<td>The Enabled field indicates to the Outbound subsystem whether this campaign is currently active.</td>
</tr>
<tr>
<td>Campaign Type</td>
<td>Denotes whether a specific campaign is IVR-based or Agent-based. The existing campaigns will be marked as Agent-based after an upgrade.</td>
</tr>
<tr>
<td>Delete</td>
<td>Click Delete icon next to the name of the campaign that you want to delete.</td>
</tr>
</tbody>
</table>

Step 2  Verify that the Enabled field is set to TRUE and that the start and end times are specified as required.
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.

Communication with Agents Desktops

In Unified CCX, CAD allows agents to handle Outbound calls. The Cisco Agent Desktop and Cisco Supervisor Desktop do not support any new reports.

To display the additional buttons for the Outbound feature on CAD, the Direct Preview option must be enabled on Cisco Desktop Administrator (CDA). See the Cisco Desktop Administrator's User Guide and the Cisco Agent User Guide for more information.
Agents Receive Outbound Calls

Agents can now log in and get ready to receive Outbound calls. To do so, agents must belong to CSQs assigned to Outbound.

Agent Allocation

The Outbound subsystem allocates agents for Outbound calls by:

- Pulling a batch of contacts from the db_cra database
- Assigning a Ready agent to each by reserving the agents for Outbound calls
- Presenting them with the Outbound calls

Note

Only CAD agents are presented with Outbound calls.

Agents are chosen from the CSQ using the same criteria configured in Unified CCX Administration GUI for inbound calls. If an agent accepts an Outbound call, the Outbound subsystem initiates a call on the agent's behalf. If the agent rejects the contact, the agent reservation is cancelled and the agent becomes Ready again and may be presented with either an Outbound call or an inbound call. The contact that was rejected is assigned to another agent. If the agent decides to skip the contact, the agent reservation is not cancelled. Instead, the skipped contact gets assigned to another (or the same) agent.

The agent's response (such as accept, skip, and reject) is saved in the database for each contact presented during a campaign. If the agent does not respond within the timeout configured on the General page of the Outbound subsystem configuration in Unified CCX Administration GUI, the Outbound subsystem moves the agent to Not Ready state (much like an inbound Not Ready state) and assigns the contact to another agent. The status of the contact (for example, the contact can be closed or needs to be dialed again) and the call result (for example, the contact was reached successfully or contact was not at home) is recorded in the database and this data is presented in the real-time and historical reports.

Customer Information Preview

Before placing an Outbound call, an available agent is reserved and presented with a preview record on the desktop. This lets the agent preview the contact before deciding on an action. This dialog contains customer information such as name, account number, and phone number.

The enabled buttons when an agent is in the Reserved state are described in the following table:

<table>
<thead>
<tr>
<th>Status</th>
<th>Result of Selecting this Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>Accept the current preview record and initiate the Outbound call to the customer from the agent's phone.</td>
</tr>
<tr>
<td>Status</td>
<td>Result of Selecting this Status</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reject</td>
<td>Reject the current preview record, cancel the agent reservation, and change the agent state to Ready. The agent can now handle either inbound or Outbound calls.</td>
</tr>
<tr>
<td>Reject-Close</td>
<td>Reject the current preview call and close the record so that contact is not called again for this particular campaign. This cancels the agent reservation and changes the agent's state to Ready so the agent can now handle either inbound or Outbound calls.</td>
</tr>
<tr>
<td>Skip</td>
<td>Skip the current preview record and retain the agent in the reserved state to allow the agent to handle another Outbound contact.</td>
</tr>
<tr>
<td>Skip-Close</td>
<td>Skip the current preview call and close the record so that the contact is not called again for this particular campaign. The agent remains reserved to handle another Outbound contact.</td>
</tr>
<tr>
<td>Cancel Reservation</td>
<td>Cancel the agent reservation and set the agent to the Not Ready state. The record remains open in the database. This state is similar to the Reject state except that the agent is transferred to the Not Ready state instead of the Ready state.</td>
</tr>
</tbody>
</table>

### Exchange of Data with CAD

Unified CCX uses predefined Expanded Call Context (ECC) variables to exchange data with CAD for the Preview Outbound option. Unified CCX uses the same ECC variables that Unified ICME uses for the Preview Outbound option.

These ECC variables are present on CDA. To display them on CAD, they must be added to the OODefault layout that is associated with the call.

The following table lists the pre-defined ECC variables used for the Preview Outbound option:

| Caution                  | Do not use these pre-defined ECC variables in any other context as they are reserved for the Outbound feature. |

---
### ECC Variable

<table>
<thead>
<tr>
<th>ECC Variable</th>
<th>Description</th>
</tr>
</thead>
</table>
| BAStatus       | Required. Contains two characters indicating the mode and direction of the Preview Outbound option initiated call.  
|                | • The first character identifies the call mode:  
|                |   • D = Direct Preview reservation for Unified CCX  
|                |   • C = Direct Preview call for Unified CCX  
|                |   • Z = the Outbound call transferred or conferenced  
|                | • The second character identifies the direction (always 'O' = Outbound for Unified CCX).  
|                | So a BAStatus of DO would indicate a Direct Preview Reservation for an Outbound Call, which is always the case for Outbound calls in Unified CCX. |
| BACampaign     | Optional. The name of the Outbound campaign to which the call belongs.       |
| BAAccountNumber| Optional. Identifies a customer account number and can be used by CAD to perform a database lookup to obtain additional customer data. This ECC variable displays only if the data was available in the customer import file. Note: The maximum character length of this ECC variable is 30 characters. |
| BAResponse     | Optional. Multi-purpose placeholder that sends data from CAD to the Preview Outbound option. This variable is used when the CAD responds to the server's agent reservation request (for example, Accept, Reject, Skip, etc.). It is also used to schedule and cancel callbacks and make changes to the callback number. |
| BADialedListID | Optional. Unique key identifying a specific customer record.                 |
| BATimeZone     | Optional. The GMT offset, in minutes, for the customer's time zone and local time. |
| BABuddyName    | Optional. Contains the customer's first and last name separated by a comma, if provided in the contacts list imported for the campaign. |
| BACustomerNumber| Optional. Contains dialed customer phone number.                            |

### Call Status Values

For each contact, the call statuses and their corresponding values are recorded in the database and described in the following table:

<table>
<thead>
<tr>
<th>Call Status</th>
<th>Value (stored in database)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>1</td>
<td>The call is pending. This is the initial state for all records.</td>
</tr>
</tbody>
</table>
### Call Status Values

<table>
<thead>
<tr>
<th>Call Status</th>
<th>Value (stored in database)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>2</td>
<td>The record was retrieved by the Outbound subsystem for dialing.</td>
</tr>
<tr>
<td>Closed</td>
<td>3</td>
<td>The record is closed (not dialed).</td>
</tr>
<tr>
<td>Callback</td>
<td>4</td>
<td>The record is marked for a callback.</td>
</tr>
<tr>
<td>Max Calls</td>
<td>5</td>
<td>Maximum attempts have been reached for this record (considered closed).</td>
</tr>
<tr>
<td>Retry</td>
<td>6</td>
<td>The record is redialed immediately whenever there is any miss in the callbacks for Retries with Delay.</td>
</tr>
<tr>
<td>Unknown</td>
<td>7</td>
<td>If the Outbound subsystem was restarted with records in the Active (2) state, they are moved to this state.</td>
</tr>
<tr>
<td>Retries with Delay</td>
<td>8</td>
<td>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.</td>
</tr>
</tbody>
</table>

### 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 deleted

  **Note** The records marked as closed today will be deleted the next day at midnight. For example, the records closed on 4th June will be deleted 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 CAD or automatically deleted by the system) and their corresponding values are recorded in the database and described in the following table:

<table>
<thead>
<tr>
<th>Call Result</th>
<th>Value (stored in database)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice</td>
<td>1</td>
<td>Customer answered and was connected to agent.</td>
</tr>
<tr>
<td>Fax</td>
<td>2</td>
<td>Fax machine or modem detected.</td>
</tr>
<tr>
<td>Answering machine</td>
<td>3</td>
<td>Answering machine detected.</td>
</tr>
<tr>
<td>Invalid</td>
<td>4</td>
<td>Number reported as invalid by the network.</td>
</tr>
<tr>
<td>Do Not Call</td>
<td>5</td>
<td>Customer did not want to be called again.</td>
</tr>
<tr>
<td>Wrong Number</td>
<td>6</td>
<td>Number successfully contacted but wrong number.</td>
</tr>
<tr>
<td>Customer Not Home</td>
<td>7</td>
<td>Number successfully contacted but reached the wrong person.</td>
</tr>
<tr>
<td>Callback</td>
<td>8</td>
<td>Customer requested callback.</td>
</tr>
<tr>
<td>Agent Rejected</td>
<td>9</td>
<td>Agent skipped or rejected the preview call.</td>
</tr>
<tr>
<td>Agent Closed</td>
<td>10</td>
<td>Agent skipped or rejected the preview call with the close option (not dialed).</td>
</tr>
<tr>
<td>Busy</td>
<td>11</td>
<td>Busy tone detected.</td>
</tr>
<tr>
<td>Ring No Answer</td>
<td>12</td>
<td>Agent did not respond to the preview call within the time out duration.</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>You can configure the time out duration using the Preview Call Timeout field detailed in the Configure General Outbound Properties.</td>
</tr>
<tr>
<td>Callback Failed</td>
<td>13</td>
<td>This value should not be written to the database; this is for internal use only.</td>
</tr>
<tr>
<td>Callback Missed</td>
<td>14</td>
<td>Callback missed and marked for Retry.</td>
</tr>
</tbody>
</table>
### 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.

**Note**

The following information is applicable only for Preview Dialer.

<table>
<thead>
<tr>
<th>Call Result</th>
<th>Call Status</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice (1)</td>
<td>Closed (3)</td>
<td>This contact is not dialed again.</td>
</tr>
<tr>
<td>Fax (2)</td>
<td>Retry (6)</td>
<td>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.</td>
</tr>
<tr>
<td>Call Result</td>
<td>Call Status</td>
<td>Behavior</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Answering machine (3)</td>
<td>Retry (6)</td>
<td>This contact is retried, with the same phone number as before.</td>
</tr>
<tr>
<td>Invalid (4)</td>
<td>Retry (6)</td>
<td>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.</td>
</tr>
<tr>
<td>Do Not Call (5)</td>
<td>Closed (3)</td>
<td>This contact is not dialed again.</td>
</tr>
<tr>
<td>Wrong Number (6)</td>
<td>Retry (6)</td>
<td>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.</td>
</tr>
<tr>
<td>CustomerNotHome (7)</td>
<td>Retry (6)</td>
<td>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.</td>
</tr>
<tr>
<td>Callback (8)</td>
<td>Callback (4)</td>
<td>This contact is dialed again using the number stored in the callbackNumber column, at the time stored in callbackDateTime column.</td>
</tr>
<tr>
<td>Reject or Skip (9)</td>
<td>Active (No change)</td>
<td>This contact is presented to another agent.</td>
</tr>
<tr>
<td>Reject-Close or Skip-Close</td>
<td>Closed (5)</td>
<td>This contact is not dialed again.</td>
</tr>
<tr>
<td>Busy</td>
<td>Retry (6)</td>
<td>This contact is retried, with the same phone number as before.</td>
</tr>
</tbody>
</table>

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.

**Skip-Next Behavior**

To ensure that a skip-next selection is handled as designed, be sure to set at least two, if not all three, phone numbers.

When an agent on an outbound call with a customer selects the skip-next button on CAD, two options (wrong number and not home) are made available to this agent. The behavior for both options is the same, the agent continues to remain on the call with the customer, while the outbound dialer updates the phone number to be dialed to the next available phone number (of the three phone number possibilities—phone01, phone02 and phone03).

Once the call ends, the contact is retried after all the callbacks and pending contacts for the campaign are dialed out. For retry, the outbound dialer uses the next available phone number updated during the skip-next operation. If the record is imported with only one phone number, and phone02 and phone03 are empty, this
A record is closed after the agent drops the call. If phone02 is empty, but phone03 is present, then phone03 is used as the next number to dial.

**Note**
The contact is retried only if the number of calls attempted for the contact has not exceeded the maximum attempts configured in the campaign.

### Skip/Reject Behavior

The Outbound subsystem handles agent skip/reject requests as listed below:

- **Skip/reject close request**: The contact is always set to Closed.
- **Contact is a callback record**: The contact goes back in queue so the callback can be retried.
- **Contact is not a callback**: It is set to Pending and is picked up from the database the next time that the Outbound subsystem reads records.
- **Contact is recalled (deleted the CSQ to which this contact belonged, or the campaign that this contact belongs to was stopped)**: This contact is no longer considered a callback.
- **Reject**: The agent is moved to available or unavailable (depending on configuration) after the reject.
- **Skip**: The Outbound subsystem verified if there is another contact in queue for this agent. If so, the agent remains in the reserved state and receives a new DialingListConfig. Now, the agent has the option again to accept/reject/skip/... for this new record.
- **No new record for this agent**: This agent is moved to available or unavailable, again depending on the configuration.
- **No record for this agent**: With only one active agent for a CSQ, the Outbound subsystem only requests one contact. If the agent skips this contact, there is no other contact available.

### 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 in the Pending state (call status = 1).
- **Priority 3**—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.

**Do Not Call Contacts**

> **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.

When an agent reclassifies an outbound contact as Do Not Call from CAD, then the record of the contact is closed and marked inactive in the database and it will not be dialed again. In addition to this, for all contacts in other campaigns that contain the same phone number as the outbound contact marked as Do Not Call, the records will be closed and marked inactive in the database and those contacts will not be dialed again.

The following actions are performed by the Outbound subsystem:

- All contacts marked Do Not Call are exported to a file. If the file already exists, the new contacts being exported are appended to the file along with a timestamp of when the export was done.

- After the Do Not Call contacts are exported to the file, they are marked inactive in the Dialing List table and are permanently deleted from the database when the database is purged.
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, page 259
- About Unified CCX User Capabilities, page 259
- Unified CCX Supervisor Web Interface, page 261
- Unified CCX User Options Web Interface, page 263

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.

• Remote Monitoring Supervisor: An application supervisor role with all numeric characters in the assigned userID. This role is applicable to a Unified CCX Application server with only a Unified CCX Premium license. In addition to viewing reports, this supervisor can also view the list of agents and CSQs being monitored.

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.
• Download and install the Supervisor Desktop and the Agent Desktop.
• 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.
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**

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 cannot 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**).
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.

---

**Agent Supervision**

The Supervisor can view and monitor agents only when the following conditions are met:

- The Supervisor has to be a remote monitoring Supervisor.
- The resources that are to be monitored should be assigned to the remote monitoring Supervisor.

**Monitor CSQs**

The supervisor can view and monitor CSQs only when the following conditions are met:

- The supervisor has to be a Remote Monitoring Supervisor.
- The CSQs that are to be monitored should be assigned to the Remote Monitoring Supervisor.

To monitor CSQs from the Unified CCX Supervisor web page, perform the following steps:

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Select <strong>Tools &gt; Plug-ins</strong> from the Unified CCX Administration menu bar.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Click the <strong>Cisco Unified CCX Desktop Suites</strong> hyperlink.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Click the <strong>View CSQ</strong> hyperlink to view allowed CSQs.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>When finished, click <strong>Logout</strong>.</td>
</tr>
</tbody>
</table>

---

**View CSQ IDs for Remote Monitoring**

To view CSQ IDs from the Unified CCX Supervisor web page, perform the following steps:
Procedure

Step 1  From the Unified CCX Supervisor web page, log in as the Remote Monitoring supervisor.

Step 2  Select Tools > Plug-ins from the Unified CCX Administration menu bar.

Step 3  Click the Cisco Unified CCX Desktop Suites hyperlink.

Step 4  Click the View CSQ hyperlink to view allowed CSQs. The CSQ ID column shows the ID value that you should enter for the CSQ that you selected in the Start Monitor Step. See the Start Monitor Step in the Cisco Unified CCX Scripting and Development Series: Volume 2, Editor Step Reference for more information.

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.

Download Agent Desktop

To install and configure the Agent Desktop, perform the following steps:
Procedure

**Step 1** In the Unified CCX User Options Welcome web page, go to User Options > Cisco Unified CCX Downloads. The Download page appears.

**Step 2** Click the Cisco Unified CCX Agent Desktop hyperlink displayed on this page. The File Download dialog box appears.

**Step 3** Click Run to install the Unified CCX Agent Desktop on your computer.

*Note* You must download Cisco Unified CCX Desktop Client Configuration tool prior to installing any applications from the Cisco Unified CCX Desktop Product Suite.

---

### Cisco Unified CCX Desktop Client Configuration Tool

After completing a fresh installation or upgrade of Unified CCX, you must run the Cisco Unified CCX Desktop Client Configuration tool prior to installing any desktop application(s) from the Cisco Unified CCX Desktop Product Suite.

Since Unified CCX is developed on Cisco Unified Communications Operating System (UCOS), which in turn is based on Redhat Linux, the client MSIs cannot be created while installing the desktop applications. The Unified CCX Desktop Client Configuration Tool uses the client PC for configuring the client MSIs.

The Unified CCX Desktop Client Configuration Tool downloads the files that are needed to create the MSIs into a temporary folder, creates the MSIs, and then uploads those MSIs to the server from where they can be launched through the hyperlinks in the Plug-ins page. This tool uploads the MSIs to the Linux server and cleans up all the folders and files it created on the Windows PC.

From the client PC, which you use to access Unified CCX Administration, choose Tools > Plug-ins menu option; and in the Plug-ins web page, click Cisco Unified CCX Desktop Suites. You will see another web page with the following two categories:

- Cisco Unified CCX Desktop Client Configuration tool
- Cisco Unified CCX Desktop Product Suite

To launch this tool, click the Cisco Unified CCX Desktop Client Configuration tool hyperlink from the Cisco Unified CCX web page. You will see a File Download dialog box. Click Run to run the CAD Client Configuration.msi, which is a Windows Installer (MSI). You will see a dialog box with progress bars showing the status of Agent, Supervisor, and Administrator MSIs that are being packaged and uploaded to the Unified CCX.

If you run this tool from either of the node(s) in a High Availability deployment of Unified CCX, the MSIs are uploaded on both the primary and secondary nodes of Unified CCX.

You must run the Desktop Client Configuration tool in the following scenarios:

- After fresh installation of Unified CCX
- After installing Service Release (SR) and Engineering Special (ES) release of Unified CCX
- After changing the IP address of one or more nodes of Unified CCX
- After installing Unified CCX on the second node
After moving to single-node from an HA deployment of Unified CCX
After changing the CAD Language that you want to be available for use in the agent desktops and supervisor desktops of Unified CCX.

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.
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, page 267
- Unified CM Configuration, page 268
- System Parameters, page 269
- Recording Configuration, page 269
- Custom File Configuration, page 269
- License Information, page 270
- Language Information, page 270
- Logout Menu, page 271

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, 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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Name/IP Address</td>
<td>Hostname or IP address of the server that you want to add.</td>
</tr>
<tr>
<td>MAC Address</td>
<td>MAC address of the server that you want to add.</td>
</tr>
<tr>
<td>Description</td>
<td>Description of the server that you want to add.</td>
</tr>
</tbody>
</table>

**Step 3**  
Click **Add** to add details of the new server.

**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.
System Parameters

Use the System Parameters web page to configure system parameters such as port settings, locale settings for Cisco Agent Desktop, and set the default session timeout.

Choose System > System Parameters from the Unified CCX Administration menu bar to access the System Parameters Configuration web page.

Note: You can configure only RMI port in Unified CCX 9.0(1). RmCm TCP and Master Listener TCP ports are display only fields.

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.


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.
License Information

Use the License Information web pages to display the cluster licensing information and to upload additional licenses.

Choose **System > License Information > Add License(s)** or **Display License(s)** from the Cisco Unified CCX Administration menu bar to access the License Information web pages.

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.

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.
- Configure the languages that you want to use with Cisco Unified Contact Center Express CAD and CSD.
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IVR Language Configuration</strong></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Default IVR Language Configuration</strong></td>
<td></td>
</tr>
<tr>
<td>Default Language</td>
<td>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 <strong>Edit</strong> button. This is a mandatory field and you can choose from the drop-down list. Click <strong>Edit</strong> to add a new Language option. Default: English (United States) [en_US]</td>
</tr>
<tr>
<td><strong>CAD/CSD Language Configuration</strong></td>
<td></td>
</tr>
<tr>
<td>CAD/CSD Language</td>
<td>Language that you wish to use with Cisco Agent Desktop (CAD) or Cisco Supervisor Desktop (CSD). You can configure this language by choosing from the drop-down list. <strong>Note</strong> If you are upgrading from CRS 4.5 to Unified CCX 9.0(1) or 9.0(2), ensure that you have the same CAD and CSD Language Selection settings as that of your CRS 4.5 system.</td>
</tr>
<tr>
<td>Update</td>
<td>Click the <strong>Update</strong> icon that displays in the toolbar in the upper left corner of the window or the <strong>Update</strong> button that displays at the bottom of the window to save your changes.</td>
</tr>
<tr>
<td>Clear</td>
<td>Click the <strong>Clear</strong> icon that displays in the toolbar in the upper left corner of the window or the <strong>Clear</strong> button that displays at the bottom of the window to restore the default settings.</td>
</tr>
</tbody>
</table>

**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.
You can also exit Unified CCX Administration by closing your web browser.
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

The following sections describe the menu options:

- Access Application Management Menu, page 273
- Manage Scripts, page 274
- Prompt Management, page 274
- Grammar Management, page 275
- Document Management, page 275
- AAR Management, page 276

**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.

**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.

## 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.
Subsystems Menu

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**—allows Unified CCX to configure and manage chat CSQs, chat widget list, and configure SocialMiner.
- **Outbound**—to configure contact centers for automated outbound activities.
- **ICM**—to configure the Unified Intelligent Contact Management Enterprise (Unified ICME) subsystem to interact with Unified ICME software and to add new Voice Response Units (VRU) scripts.
- **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, page 278
- RmCm Menu, page 281
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 (ResourceManager) 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 (ResourceManager) Unified CM Telephony provider for the RmCm subsystem.

- **Assign Skills**—Click this submenu to assign skills and a resource group to agents in bulk.

- **Remote Monitor**—Click this submenu to associate agents and CSQs that will be monitored by supervisors.

- **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 and skills to a resource.

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.

**Remote Monitor Configuration**

Use the Remote Monitor area of the Unified CCX Configuration web page to specify the monitoring method: by agent or by CSQ.

Choose Subsystems > RmCm > Remote Monitor from the Unified CCX Administration menu bar to access this configuration area.
Assign Resources and CSQs to Remote Supervisor

Use the Remote Monitor configuration web page to assign a Supervisor a list of Resources and CSQs they are allowed to monitor.

To access the Remote Monitoring Configuration web page, click a User ID value.

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 Menu Option

Use the Chat Configuration web page to configure and manage Chat Contact Service Queues (CSQs), Web Forms, and configure SocialMiner. To access the Chat menu option, choose Subsystems > Chat from the Unified CCX Administration menu bar. This option is available only with the Unified CCX Premium license package.

The Chat menu contains the following submenu options:

- Chat Contact Service Queues—Choose this option to configure chat and Email CSQs.
- SocialMiner Configuration—Choose this option to configure and integrate chat CSQs with SocialMiner.
- Chat System Parameters—Choose this option to configure chat system parameters.
- Chat Web Form List—Choose this option to configure and manage chat web forms.
- Teams—Choose this option to configure teams.
Chat Contact Service Queues

Procedure

Step 1  From the Unified CCX Administration menu bar, choose Subsystems > Chat > Chat Contact Service Queues. The Chat Contact Service Queues (CSQs) web page opens and displays the information for existing chat and Email CSQs if any, or else add new CSQs.

Step 2  To add a new 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 to create a new chat or Email CSQ.

Note  You must create a skill before creating a CSQ. For information, see Skills Configuration, on page 96. The Chat Contact Service Queues (CSQs) web page opens.

Table 13: CSQ Type—Chat

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSQ Name</td>
<td>Name of the chat CSQ.</td>
</tr>
<tr>
<td>CSQ Type</td>
<td>Type of the chat CSQ.</td>
</tr>
<tr>
<td>Queuing Criteria</td>
<td>Algorithm used to order the queued chat contacts.</td>
</tr>
<tr>
<td>Resource Pool</td>
<td>The resource skills used for the chat CSQ.</td>
</tr>
<tr>
<td>Resource Selection</td>
<td>The resource selection criteria chosen for the chat CSQ.</td>
</tr>
<tr>
<td>Criteria</td>
<td>• Longest Available—Selects the agent who has been in the available state for</td>
</tr>
<tr>
<td></td>
<td>the longest amount of time.</td>
</tr>
<tr>
<td></td>
<td>• Most Skilled—Used for expert agent chat distribution. Selects the agent</td>
</tr>
<tr>
<td></td>
<td>with the highest total competency level. The total competency level is</td>
</tr>
<tr>
<td></td>
<td>determined by adding the agent's competency levels for each of their</td>
</tr>
<tr>
<td></td>
<td>assigned skills that are also assigned to the CSQ.</td>
</tr>
<tr>
<td></td>
<td>* Example 1: If Agent1 is assigned Skill1(5), Skill2(6), and Skill3(7) and</td>
</tr>
<tr>
<td></td>
<td>CSQ1 specifies Skill1(min=1) and Skill3(min=1), the total competency</td>
</tr>
<tr>
<td></td>
<td>level for Agent1 for CSQ1 is 12.</td>
</tr>
<tr>
<td></td>
<td>* Example 2: If Agent1 is assigned Skill1(5) and Skill2(6) and Skill3(7)</td>
</tr>
<tr>
<td></td>
<td>and CSQ1 specifies Skill1(min=1), only, the total competency level for</td>
</tr>
<tr>
<td></td>
<td>Agent1 for CSQ1 is 5.</td>
</tr>
<tr>
<td>Note</td>
<td>If two agents score equal in the primary selection criteria, the agent who</td>
</tr>
<tr>
<td></td>
<td>was updated first will be assigned to the incoming chat.</td>
</tr>
</tbody>
</table>
Step 3  Click Next.
The Skill Association for CSQ area opens with the newly assigned CSQ Name.

Step 4  In the Skills list, view the available skills and highlight the skills you want.
Note  The Resource Pool Selection Model setting determines the availability of these options.

Step 5  Click Add for the skills you selected.
The selected skill and the minimum competence level for that skill are displayed in the right pane below the heading Selected.
Note  Use the Delete icon next to Minimum Competence to delete that skill from the Skills Required list.

Step 6  Specify a minimum competence level for the skill assigned to the chat CSQ.

Step 7  Click Save to save the changes for the chat CSQ.

Step 8  To view the printable report and associated resources, edit the CSQ and then select Open Printable Report or Show Resources.
Note  Click Delete to delete the selected chat CSQ after getting confirmation.
Warning  When you click Delete for a chat CSQ, an alert message is displayed. Deleting the chat CSQ affects the associated chat web forms. After deleting, modify the corresponding chat web form configurations and generate the HTML code.

Cisco SocialMiner Configuration

Use the SocialMiner Configuration web page in Unified CCX Application Administration to configure and integrate chat CSQs with SocialMiner. This option is available only with the Unified CCX Premium license package. You must configure information on this web page to enable the chat feature to work.

Procedure

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> From the Unified CCX Administration menu bar, choose Subsystems &gt; Chat &gt; SocialMiner Configuration.</td>
<td>The SocialMiner Configuration web page opens.</td>
</tr>
</tbody>
</table>

Note  Unified CCX and SocialMiner server should have DNS entries. SocialMiner must be accessible to Unified CCX by hostname.
Use this web page to specify or modify the following fields for SocialMiner Configuration:

### Purpose

**Step 2**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address / Host Name</td>
<td>IP address or fully qualified domain name of the SocialMiner server. For example, 192.168.1.5 or host.example.com.</td>
</tr>
<tr>
<td>User Name</td>
<td>Username of the SocialMiner administrator.</td>
</tr>
<tr>
<td>Password</td>
<td>Password of the SocialMiner administrator.</td>
</tr>
<tr>
<td>Chat Join Timeout (Minutes)</td>
<td>The time after which the customer initiates a chat and, if an agent is not joined, the customer gets a message &quot;No agent could be found&quot;. 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.</td>
</tr>
<tr>
<td>Chat Inactivity Timeout (Minutes)</td>
<td>The time after which the customer and agent stops chatting, and both the customer and the agent gets a message &quot;You are alone in the chat room&quot;. The default timeout is five minutes and the maximum timeout value allowed is 60 minutes. The chat room will be closed after the timeout due to inactivity.</td>
</tr>
</tbody>
</table>

**Step 3**

Click **Save** to save the changes.

If you see an error message, click **Save** to re-create the chat feed, campaign, and notifications in SocialMiner.

**Note**

The following message is displayed for SocialMiner configuration after an add to cluster operation is successful on an HA setup.

This creates the notification rule for the second node in SocialMiner.

"In case of HA, configure the SocialMiner on secondary node after adding to cluster in the secondary node."

As part of validation, Unified CCX checks the following:

- Unified CCX sends a request to SocialMiner to check whether the host name and login credentials are valid.
- Unified CCX checks if there is any chat feed session ID stored in the Unified CCX database. If there is an existing chat feed, Unified CCX validates the existence of this feed in SocialMiner, else an error message is displayed in the SocialMiner Configuration web page.
- Unified CCX checks if there is any SocialMiner campaign stored in the Unified CCX database. If there is an existing campaign, Unified CCX validates the existence of this campaign in SocialMiner, or
Chat System Parameters

Use the Chat System Parameters web page to configure chat parameters.

Procedure

Step 1 From the Unified CCX Administration menu bar, choose Subsystems > Chat > Chat System Parameters. The Chat System Parameters Configuration web page opens.

Step 2 Use this web page to specify or modify the following fields for chat system parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chat No Answer Timeout (Seconds)</td>
<td>If an agent does not respond to the chat request within the timeout duration (in seconds) specified in this field, the chat request is routed back to the chat queue. This is a mandatory field.</td>
</tr>
<tr>
<td>Offer Chat Contact When On Voice Call</td>
<td>Click Yes if agents are allowed to handle a chat session during a voice call. <strong>Note</strong> This setting takes effect when the agent ends the current voice call.</td>
</tr>
</tbody>
</table>

Step 3 Click **Save** to save the changes for the chat system 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.
Chat Web Form List

Procedure

Step 1  From the Unified CCX Administration menu bar, choose Subsystems > Chat > Chat Widget List. 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  Enter Name and Description for the Widget Details.

Step 4  Select the desired fields from the Available Fields and move it to the Selected Fields.

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.
The following optional hidden fields are available to customize the customer chat user interface. Unlike other extension fields, these are not added to the social contact and they are not displayed in the agent chat user interface.

Replace /img/ciscoLogoColor.png with the location of your own logo. Replace the welcome/waiting message with your own customized message. Similarly, you can customize the remaining values by replacing it with your own timeout and error messages.

- input type="hidden" name="extensionField_chatLogo" value="/img/ciscoLogoColor.png"
- input type="hidden" name="extensionField_chatWaiting" value="Welcome, please wait while we connect you with a customer care representative."
- input type="hidden" name="extensionField_chatAgentJoinTimeOut" value="All customer care representatives are busy assisting other clients. Please continue to wait or try again later."
- input type="hidden" name="extensionField_chatError" value="Sorry, the chat service is currently not available. Please try again later."

Teams

Choose Subsystems > Chat > Teams 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.

Obtaining CA-Signed Certificate for Web Chat

CA-Signed Certificate for Unified CCX

To avoid certification errors on the Cisco Agent Desktop and Cisco Supervisor Desktop, obtain the third-party Certificate Authority (CA) certificates. For more information about how to obtain the third-party CA certificates, follow the upload certification process from step 1 through step 6 from the "Obtain third-party CA certificates" section of the Cisco Unified Communications Operating System Administration Guide.

After you upload the certificate, perform the following procedure.

1. Sign out from the Unified CCX.
2. Restart the Unified CCX Notification Service (SSH to Unified CCX and use this CLI: admin:utils service restart Cisco Unified CCX Notification Service).
3. Restart Tomcat (SSH to Unified CCX and use this CLI: admin:utils service restart Cisco Tomcat).
4. Log in to the Unified CCX.
CA-Signed Certificate for Cisco SocialMiner

To avoid certification errors in the SocialMiner, obtain the third-party CA certificates. For more information about how to obtain the third-party CA certificates, see the “Certificates” section of the SocialMiner User Guide, located at:


Outbound Menu

Use the Outbound Configuration web page to provision outbound dialing functionality feature in Cisco Unified Preview Outbound Dialer Express (Outbound).

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 the campaign, including the campaign name and description, personal callback settings, skill group selection, and the time range, 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 following information for the selected campaign in addition to call-specific information, which varies depending on the selected dialer type for outbound IVR:

- 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 IVR campaign. If the contacts are used as part of an active Outbound IVR 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

The SIP Gateway is used by the Outbound subsystem to place calls only in case of IVR campaigns. Hence, it is mandatory to configure the SIP Gateway if you want to make Outbound IVR 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gateway Configuration</td>
<td></td>
</tr>
<tr>
<td>Gateway Hostname/IP Address</td>
<td>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.</td>
</tr>
<tr>
<td>Gateway Port</td>
<td>The SIP port used by the gateway to communicate with Unified CCX. The default value is 5060.</td>
</tr>
<tr>
<td>Local CCX Port</td>
<td>The port number to be used on the Unified CCX server to communicate with the gateway. Default = 5065, Range = 1025-32767 or 61001-65535</td>
</tr>
<tr>
<td><strong>Local User Agent</strong></td>
<td>This read-only field provides a description of the owner for this connection. The default value is Cisco-UCCX/8.0.</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Transport(TCP/UDP)** | The protocol required to send SIP messages. You can select any one of the following protocols:  
  • TCP - Transport Control Protocol or  
  • UDP - User Datagram Protocol  
The default value is UDP. |

**Call Progress Analysis Configuration (displays the parameter name, parameter value, and suggested value for the following fields)**

| **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).  
  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.  
  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.  
  Default = 3000 milliseconds, Range = 1000-10000 milliseconds |
| **Minimum Valid Speech Time (50-500)** | Amount of time that the energy must be active before being declared speech. Anything less is considered as a glitch.  
  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.  
  Default = 15000 milliseconds, Range = 1000-60000 milliseconds |
Unified ICM Menu

Use the Intelligent Contact Manager (ICM) Configuration web pages to add or modify Unified ICME configuration parameters and to modify VRU script information.

Unified ICME Configuration

Note
If you are using Unified CCX with Cisco Contact Center Gateway solution, see *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 the Unified Gateway. The Unified Gateway is a Peripheral Gateway (PG) which you configure on the Unified ICME software.

Use the General area of the Unified ICME Configuration page to add or modify Unified ICME configuration parameters.
To configure the Unified ICME subsystem, choose Subsystems > ICME > General from the Unified CCX Administration menu bar to access the Unified ICME Configuration web page.

Unified ICME VRU Scripts

Unified ICME uses Unified ICME Voice Response Unit (VRU) scripts to handle interaction with contacts. These scripts are loaded as applications on the Unified CCX Engine.

Choose Subsystems > ICME > ICME VRU Scripts from the Unified CCX Administration menu bar to access the ICME VRU Scripts web page.

Add New VRU Script

Use the ICME VRU Scripts web page to add a new VRU script.

Procedure

Step 1 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 on the ICME VRU Scripts web page.

Step 2 To modify a VRU script, click any hyperlink within the VRU Script list table entry; the ICME VRU Scripts web page opens, displaying the list of VRU Scripts in the Scripts drop-down box. Click Update to save the changes.
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 Parameter

To add a new database parameter:

Procedure

Choose Subsystems > Database > Parameter from the Unified CCX Administration menu bar. The Parameters web page displays. See Poll Database Connectivity to know more about how to update parameter-related fields.

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 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 14: JDBC Driver Versions Tested with Enterprise Database**

<table>
<thead>
<tr>
<th>Databases</th>
<th>Tested JDBC Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle 11g R2</td>
<td>ojdbc6.jar</td>
</tr>
<tr>
<td>Oracle 10g R2</td>
<td>ojdbc14.jar</td>
</tr>
<tr>
<td>Oracle 10g XE</td>
<td>ojdbc14.jar</td>
</tr>
<tr>
<td>Sybase Adaptive Server 12</td>
<td>jTDS 1.2.2, jconn2.jar</td>
</tr>
<tr>
<td>IBM DB2 8.2</td>
<td>db2jcc4.jar</td>
</tr>
<tr>
<td>MS SQL Server 2000</td>
<td>jTDS 1.2.2</td>
</tr>
<tr>
<td>MS SQL Server 2005</td>
<td>jTDS 1.2.2</td>
</tr>
<tr>
<td>MS SQL Server 2008</td>
<td>jTDS 1.2.5</td>
</tr>
<tr>
<td>MS SQL Server 2012</td>
<td>jTDS 1.2.5</td>
</tr>
</tbody>
</table>
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 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.

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 Menu

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 89
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 91
Wizards Menu

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, page 303
- RmCm Wizard, page 304

Application Wizard

Application Configuration is one of the very basic requirements in Unified CCX Administration. You must complete several steps in the suggested 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 in the suggested order to successfully complete RmCm Configuration. The RmCm Configuration wizard leads you through the suggested 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 284
  - Unified Communications Manager for Unified CCX Configuration, on page 30

• **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 18

Tools Menu

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, page 307**
- **Real-Time Reporting Menu, page 308**
- **Real-Time Snapshot Config Menu, page 309**
- **Historical Reporting Menu, page 313**
- **User Management Menu, page 315**
- **Password Management, page 319**

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 Desktop Suites**—Click this hyperlink to install Cisco Desktop Administrator, Supervisor Desktop, Agent Desktop, and Client Configuration tool. For more information, see *Cisco Unified CCX Supervisor Desktop Plug-in Tasks* and the *Cisco Unified CCX Agent Desktop Plug-in Tasks*.

  — **Note**
  You must download Cisco Unified CCX Desktop Client Configuration tool prior to installing any applications from the Cisco Unified CCX Desktop Product Suite.

- **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, Real Time Reporting, Cisco Agent/Supervisor Desktop.
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Writing Enable</td>
<td>If checked, the system writes the data to the database. If not checked, the system does not write the data to the database. The default is disabled.</td>
</tr>
<tr>
<td>Data Writing Interval</td>
<td>Sets the refresh interval for the wallboard data. Valid options: 5, 10, 15, 20, and 25.</td>
</tr>
<tr>
<td>Cisco Unified CCX CSQs Summary</td>
<td>If checked, writes information about each CSQ to the RtCSQsSummary table in the Unified CCX database.</td>
</tr>
<tr>
<td>Cisco Unified CCX System Summary</td>
<td>If checked, writes overall Unified CCX system summary to the RtICDStatistics table in the Unified CCX database.</td>
</tr>
<tr>
<td><strong>Wallboard System</strong></td>
<td></td>
</tr>
<tr>
<td>Server Name</td>
<td>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.</td>
</tr>
</tbody>
</table>
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/..
- 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 OBDC 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:
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Server Name   | This is the instance name of the Informix database. Informix database instance name can be formed using Host Name of the Unified CCX server by following these conventions:  
• Convert all upper case letters to lower case.  
• Replace hyphens with underscore.  
• Add the letter “i” as a prefix to the instance name, if the hostname starts with a number.  
• Append the letters “_uccx” to the instance name.  
For example, if the hostname is “802UCCX-Ha-Node1”, enter “i802uccx_ha_node1_uccx” in the Server Name field. |
| Host Name     | Enter the hostname of the primary Unified CCX server.                                                                                       |
| Service       | Enter 1504.                                                                                                                               |
| Protocol      | Enter onsoetcp.                                                                                                                             |
| Options       | Leave blank.                                                                                                                               |
| Database Name | Enter db_cra. This is the user id of the Unified CCX database created for wallboard.                                                       |
| User ID       | Enter uccxwallboard. 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 Tools > Password Management 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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Locale</td>
<td>Enter en_US.UTF8.</td>
</tr>
<tr>
<td>Database Locale</td>
<td>Enter en_US.UTF8.</td>
</tr>
</tbody>
</table>

**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 HKLM\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:
- **a)** 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.
- **b)** On failover, change SERVER value to master DB instance name in registry of DSN under **HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBC.INI**
- **c)** 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, Real Time Reporting, Cisco Agent/Supervisor Desktop.

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 specify the reporting options provided to the user using the following configurations: to configure the database server to specify the reporting options provided to the user.
  - Database Server Configuration
- **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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host/IP Address</td>
<td>The host name or IP address of the SMTP server.</td>
</tr>
<tr>
<td>From email address</td>
<td>The email address that is to appear in the From field of emails sent by the Scheduler.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Unified CCX supports alphanumeric IDs and special characters (only hyphen &quot;,&quot;, underscore &quot;,&quot;, and dot &quot;,.&quot;).</td>
</tr>
<tr>
<td>Use Email Proxy</td>
<td>Check this if you use a proxy server to reach your SMTP server. Only HTTPS is supported as an email proxy type. SOCKS proxy is not supported.</td>
</tr>
<tr>
<td>Email Proxy Hostname</td>
<td>The hostname or IP address of the proxy server used to reach the SMTP server.</td>
</tr>
<tr>
<td>Email Proxy Port</td>
<td>The port used to connect to the SMTP proxy server.</td>
</tr>
<tr>
<td>Use SMTP Authentication</td>
<td>Check this if your SMTP server expects to receive username and password credentials.</td>
</tr>
<tr>
<td>SMTP Username</td>
<td>If you check the Authenticate checkbox, enter the username that is to be authenticated.</td>
</tr>
<tr>
<td>SMTP Password</td>
<td>If you check the Authenticate checkbox, enter the password that is to be authenticated.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Choose <strong>Tools &gt; Historical Reporting &gt; File Restore</strong> from the Unified CCX Administration menu bar to access the Historical Reporting Configuration web page.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note</td>
<td>The <strong>Restore Now</strong> radio button is enabled by default on this page.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click the <strong>Start</strong> icon that displays in the toolbar in the upper left corner of the window or the <strong>Start</strong> 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.</td>
</tr>
</tbody>
</table>

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 View Submenu, on page 316
- Name Grammar Generator Configuration, on page 317
- Spoken Name Upload Submenu, on page 318
- Administrator Capability View Menu, on page 318
- Supervisor Capability View Menu, on page 318
- Reporting Capability View Menu, on page 319
- Agent Capability View Menu, on page 319

**User View Submenu**

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>How often Name Grammar Generator is automatically run. Valid options: Never, Daily, and Weekly. This is a mandatory field.</td>
</tr>
<tr>
<td>Run task on (hrs of day)</td>
<td>Time of day to run the task. This is a mandatory field.</td>
</tr>
<tr>
<td>Run task on (day of week)</td>
<td>Day of week to run the task. This is a mandatory field.</td>
</tr>
<tr>
<td>Last Completed on</td>
<td>Date of last generation of name grammar.</td>
</tr>
<tr>
<td>Last Completion Result</td>
<td>The status after the last name grammar generation. (Display only.)</td>
</tr>
<tr>
<td>Grammar Variant</td>
<td>Select one or more grammar variants to generate from the check box next to the following three options:</td>
</tr>
<tr>
<td></td>
<td>• OSR 3.1.x</td>
</tr>
<tr>
<td></td>
<td>• 2003 SISR</td>
</tr>
<tr>
<td></td>
<td>• Nuance</td>
</tr>
<tr>
<td>Current Status</td>
<td>Running status of the Name Grammar Generator. (Display only.)</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Roles</th>
<th>Access</th>
<th>Available reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application administrator</td>
<td>Super user</td>
<td>• Historical reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Live Data reports</td>
</tr>
<tr>
<td>Reporting user</td>
<td>Unified CCX administrator must assign this role to a user.</td>
<td>• Historical reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Live Data reports</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Unified CCX administrator must assign this role to a user.</td>
<td>Live Data reports</td>
</tr>
<tr>
<td>Agent</td>
<td>Unified CCX administrator must assign this role to a user.</td>
<td>Agent-specific Live Data reports</td>
</tr>
</tbody>
</table>

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:
This user can connect to Configuration and Historical databases and has read-only access to RtICDStatistics and RtCSQsSummary tables.

This user can connect to Configuration, Historical, and Repository databases and has the following privileges:

- read-only access to Historical, Configuration, and Repository tables
- execute stored procedures
- create new stored procedures

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.

<table>
<thead>
<tr>
<th>User</th>
<th>Username</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wallboard</td>
<td>uccxwallboard</td>
<td>This user can connect to Configuration and Historical databases and has read-only access to RtICDStatistics and RtCSQsSummary tables.</td>
</tr>
<tr>
<td>Recording SFTP</td>
<td>uccxrecording</td>
<td></td>
</tr>
<tr>
<td>Workforce Management</td>
<td>uccxworkforce</td>
<td></td>
</tr>
<tr>
<td>Historical Reporting</td>
<td>uccxhruser</td>
<td>This user can connect to Configuration, Historical, and Repository databases and has the following privileges:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• read-only access to Historical, Configuration, and Repository tables</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• execute stored procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• create new stored procedures</td>
</tr>
<tr>
<td>System Call Tracking (part of Real Time Monitoring Tool/ Analysis Manager)</td>
<td>uccxsct</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 19

Help Menu

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**, page 321
- **For This Page Menu**, page 322
- **Troubleshooting Tips Menu**, page 322
- **Unified CCX Documentation Link**, page 323
- **About Menu**, page 323

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.
<table>
<thead>
<tr>
<th>Menu Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>Returns you to the beginning of the online help document.</td>
</tr>
<tr>
<td>Back</td>
<td>Returns you to the previous page.</td>
</tr>
<tr>
<td>Search</td>
<td>Opens a search window, in which you can search for specific words in the online help files.</td>
</tr>
<tr>
<td>Forward</td>
<td>Leads you to the next page.</td>
</tr>
<tr>
<td>Using Help</td>
<td>Opens a file explaining how to use the online help files.</td>
</tr>
<tr>
<td>Glossary</td>
<td>Opens a glossary of definitions for terms used in Cisco Unified CCX and Cisco Unified IP IVR.</td>
</tr>
<tr>
<td>Print</td>
<td>Prints the help document.</td>
</tr>
<tr>
<td>View PDF</td>
<td>Opens a PDF version of the Cisco Unified CCX Administration Guide.</td>
</tr>
<tr>
<td>Contents and Index</td>
<td>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.</td>
</tr>
</tbody>
</table>

### 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.

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


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.
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 - 5.0 and above with Safari browser
- For Android devices - 2.0 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, page 325
- Adding Skills Using Cisco Mobile Skill Manager, page 326
- Searching Skills Using Cisco Mobile Skill Manager, page 327
- View Details of Resources Assigned to Supervisor, page 327
- View Resources Assigned to Supervisor, page 328
- Search Resources Using Cisco Mobile Skill Manager, page 328
- Modify Resource Team, page 328
- Assign Skill Competency to Resource, page 329
- Unassign Skill Competency of Resource, page 329

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 smartphone 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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Login to Cisco Mobile Skill Manager using supervisor credentials.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click Skills.</td>
</tr>
<tr>
<td>Step 3</td>
<td>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.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Click OK. The dialog box closes and the Skills page refreshes to display the updated list of skills.</td>
</tr>
</tbody>
</table>
Searching Skills Using Cisco Mobile Skill Manager

Procedure

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Login to Cisco Mobile Skill Manager using supervisor credentials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Click <strong>Skills</strong>.</td>
</tr>
<tr>
<td>Step 3</td>
<td>In the Skills page, enter the skill to be searched in the search filter box.</td>
</tr>
<tr>
<td>Step 4</td>
<td>If the skill exists, the same will be displayed.</td>
</tr>
</tbody>
</table>

View Details of Resources Assigned to Supervisor

Procedure

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Login to Cisco Mobile Skill Manager using supervisor credentials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Click <strong>Resources</strong>.</td>
</tr>
<tr>
<td></td>
<td>The Resources page launches to display all resources assigned to the supervisor.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Click the selected resource name. The Resource details page launches and lists the following details of the selected resource.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Name</td>
<td>Displays the full name of the resource.</td>
</tr>
<tr>
<td>User Id</td>
<td>Displays the user id of the resource.</td>
</tr>
<tr>
<td>IPCC Extension</td>
<td>Displays the IPCC extension of the resource.</td>
</tr>
<tr>
<td>Team</td>
<td>Link to launch the Teams page which displays the team to which the resource is assigned.</td>
</tr>
<tr>
<td>Skills</td>
<td>Link to launch the Assigned skills page which displays the skills assigned to the resource.</td>
</tr>
</tbody>
</table>
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.
Unassign Skill Competency of Resource
Unified CCX Web Chat

Unified CCX Premium provides the facility for end users to initiate a chat session with the agent from a website, typically the public website of the organization using the Unified CCX. Unified CCX provides separate agent and supervisor web applications.

For Web Chat Agent
To enable chat agent login to the Web Chat Agent Desktop using Cisco Agent Desktop as the integrated browser, configure work site for Web Chat Agent Desktop using the URL https://<<servername>>/agentdesktop where <<servername>> is the fully qualified domain name of Unified CCX, for example, https://uccxnode.cisco.com/agentdesktop. Web Chat Agent Desktop will not work if you use the IP address.

For Web Chat Supervisor
To enable chat supervisor login to the Web Chat Supervisor Desktop using Cisco Supervisor Desktop as the integrated browser, configure Web Chat Supervisor Desktop using the Preferences setting.
Cisco Finesse

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.

**Note**

Cisco Finesse service is not activated by default even when you update the appropriate licenses on a Unified CCX deployment.

Run the `utils uccx finesse activate` command to activate Cisco Finesse Service on each Unified CCX node in a cluster.


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:

- **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 phonebooks 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 phonebooks named BOOK and book.

**Sign In to Cisco Finesse Administration Console**

You can access the Cisco Finesse administration console only through HTTPS.

**Procedure**

- **Step 1** Direct your browser to https://hostname or IP address:8445/cfadmin, where hostname is the hostname 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.
Manage Call Variables Layout

On the Call Variables Layout tab on the Cisco Finesse administration console, you can define how call variables appear on the Finesse agent desktop.

Call Variables

The Finesse agent desktop 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

Columns can be empty.

The following table describes the fields on the Manage Call Variables Layout gadget.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Name</td>
<td>A label that describes the variable for that entry (for example, Customer Name). The maximum length of this field is 50 characters.</td>
</tr>
<tr>
<td>Variable</td>
<td>The name of the call variable or ECC variable that is displayed to the agent. The maximum length of this field is 32 characters.</td>
</tr>
<tr>
<td>Delete?</td>
<td>Click the “X” to delete the specified row from the column.</td>
</tr>
</tbody>
</table>

Actions on the Manage Call Variables Layout gadget:

- **Add Row**: Adds a new row to the specified column

  **Note**: The Add Row button is disabled if 10 variables are already configured for the specified column.

- **Save**: Saves your configuration changes
- **Revert**: Retrieves and reapplies the most recently saved call variable layout
When you modify the call variable 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.

### Configure Call Variables Layout

**Procedure**

**Step 1** In the Call Header Layout area, in the Display Name field, enter the text that you want to appear in the header of the Call Control gadget on the Finesse desktop (for example, Customer Name).

**Step 2** From the Variable drop-down list, choose the call variable or Outbound Option ECC variable that you want to appear in the header (for example, callVariable3).

**Step 3** In the Call Body Left-Hand Layout and Call Body Right-Hand Layout areas:
   a) Click the X beside any row that you want to delete.
   b) Click **Add Row** if you want to add a new row.
   c) For each row, in the Display Name field, enter the text that you want to appear on the desktop, and then choose the corresponding call variable or Outbound Option ECC variable from the Variable drop-down list.

**Step 4** Click **Save**.

### 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.

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.
Manage Desktop Layout

- **Restore Default Layout**: Restores the Finesses desktop to the default layout.
- **Save**: Saves your configuration changes.
- **Revert**: Retrieves and applies the most recently saved desktop layout.

**Default Layout XML**

The Finesses default desktop layout XML for Unified CCX contains optional tabs and gadgets for MediaSense and Web Chat 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 Finesses desktop.

Remove any gadgets or tabs that you do not want to use.

```xml
<finesseLayout xmlns="http://www.cisco.com/vtg/finesse">
  <layout>
    <role>Agent</role>
    <page>
      <gadget>/desktop/gadgets/CallControl.jsp</gadget>
    </page>
  </layout>
</finesseLayout>
```

---

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

```xml
<gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
</page>
</layout>
```

---

```xml
<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=loginId</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=112&
            viewId=67D4371110000140000001080A4E5E6F&
            filterId=ResourceIAQStats.resourceId=loginId</gadget>
        </gadgets>
      </column>
    </columns>
  </tab>
</tabs>
```
The following Tab and Gadget are used for WebChat. They are *ONLY* supported with WebChat. If you are not using WebChat, then remove them. 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 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.

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

```xml
<layout>
  <role>Supervisor</role>
  <page>
    <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  </page>
  <tabs>
    <tab>
      <id>manageCall</id>
      <label>finesse.container.tabs.agent.manageCallLabel</label>
    </tab>
    <tab>
      <id>manageChats</id>
      <label>finesse.container.tabs.agent.manageChatsLabel</label>
      <columns>
        <column>
          <gadgets>
            <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
          </gadgets>
        </column>
      </columns>
    </tab>
    <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>
        <gadgets>
          <gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
        </gadgets>
      </columns>
    </tab>
  </tabs>
</layout>
```

```xml
<layout>
  <role>Supervisor</role>
  <page>
    <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  </page>
  <tabs>
    <tab>
      <id>manageCall</id>
      <label>finesse.container.tabs.agent.manageCallLabel</label>
    </tab>
    <tab>
      <id>manageChats</id>
      <label>finesse.container.tabs.agent.manageChatsLabel</label>
      <columns>
        <column>
          <gadgets>
            <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
          </gadgets>
        </column>
      </columns>
    </tab>
    <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>
        <gadgets>
          <gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
        </gadgets>
      </columns>
    </tab>
  </tabs>
</layout>
```
filterId=ResourceIAQStats.resourceId=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=F2F1FC1718000014400000014E0A4E5D48&
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=FD919FB9100001440000014E5D48&
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=310&
viewId=C8E2DB16180000144000000A60A4E5D58&
filterId=VoiceIAQStats.esdName=CL</gadget>
		<gadget>https://localhost:8444/cuic/gadget/LiveData/
LiveDataGadget.jsp?gadgetHeight=310&
viewId=9A7A14CE1800000E0A4E5D6B&
filterId=VoiceCSQDetailsStats.agentId=CL&
compositeFilterId=VoiceCSQDetailsStats.
AgentVoiceCSQNames.agentVoiceCSQName=CL</gadget>
		</gadgets>
		</column>
	</columns>
</tab>  
	<tab>
		<id>manageCall</id>
		<label>finesse.container.tabs.supervisor.manageCallLabel</label>
		</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=E42ED78818000007B0A4E5CA1&
filterId=ChatQueueStatistics.queueName=CL</gadget>

-->  

</gadgets>
</column>
</columns>
</tab>  
	<tab>
		<id>manageCall</id>
		<label>finesse.container.tabs.supervisor.manageCallLabel</label>
		</tab>  

<!--
The following Tab and Gadget are used for WebChat. They are *ONLY* supported with
WebChat. If you are not using WebChat, then remove them. 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=F019FB918000014400000014E5D48&
filterId=ChatAgentStats.agentId=CL</gadget>

-->  

</gadgets>
</column>
</columns>
</tab>
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.

```xml
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</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.

```xml
<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>
```

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.

```xml
<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.

```xml
<gadgets>
  <gadget>http://<ipAddress>/gadgets/<gadgetname>.xml</gadget>
</gadgets>
```

Replace `<ipAddress>` with the IP address of the server where the gadget resides.

Step 2  Click Save. Finesse validates the XML file to ensure that it is valid XML syntax and conforms to the Finesseschema.

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 be not be updated. You need to click on Restore Default Layout to get the latest changes.

The FinessedefaultXMLlayoutisasfollows:

```xml
<finesselayout xmlns="http://www.cisco.com/vtg/finesses">
  <layout>
    <role>Agent</role>
    <page>
      <gadget>/desktop/gadgets/CallControl.jsp</gadget>
    </page>
    <tabs>
      <tab>
        <id>home</id>
        <label>finesse.container.tabs.agent.homeLabel</label>
        <gadgets>
          <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=76D964D1000140000000830A4E6E6F&filterId=AgentCSQStats.csqName&compositeFilterId=AgentCSQStats.AgentIds.agentId=loginId</gadget>
          <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=5C62F9C10000140000000600A4E5B33&filterId=ResourceIAQStats.resourceId=CL</gadget>
        </gadgets>
      </tab>
      <tab>
        <id>myStatistics</id>
        <label>finesse.container.tabs.agent.myStatisticsLabel</label>
        <gadgets>
        </gadgets>
      </tab>
    </tabs>
  </layout>
</finesselayout>
```
The following Tab and Gadget is for MediaSense. It is *ONLY* supported with MediaSense. If you are not using MediaSense, then remove it. 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.
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
<?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:restriction base="xs:string">
          <xs: minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:simpleType>
  </xs:element>
  <xs:element name="label">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs: minLength value="1"/>
      </xs:restriction>
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs: minLength value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </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:schema>
```
Add Web Chat to Finesse

The Cisco Finesse default layout XML contains commented XML code for Web Chat 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 Control gadget is only supported at the page level. You must ensure that the Chat Control gadget (<gadget>https://localhost/agentdesktop/gadgets/chatControl.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.
### When to use

<table>
<thead>
<tr>
<th>Procedure</th>
<th>When to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Web Chat to the default desktop layout.</td>
<td>Follow this procedure if you want to add Web Chat to the Finesses desktop after a fresh installation or after an upgrade if you have not customized the default desktop layout.</td>
</tr>
<tr>
<td>Add Web Chat to a custom desktop layout.</td>
<td>Follow this procedure if you want to add Web Chat and have customized the desktop layout.</td>
</tr>
<tr>
<td>Add Web Chat to a team layout.</td>
<td>Follow this procedure if you want to add Web Chat to the desktop only for specific teams.</td>
</tr>
</tbody>
</table>

**Note**

After you add the Web Chat gadgets, sign in to the Finesses desktop and make sure they appear the way you want. Agents who are signed in to Finesses when you change the desktop layout must sign out and sign back in to see the change on their desktops.

---

### Add Web Chat 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**

1. **Step 1**
   - In the Finesses administration console, click the **Desktop Layout** tab.

2. **Step 2**
   - To add the Chat Control gadget to the agent desktop, look for the following under the `<role>Agent</role>` tag and within the `<page></page>` tag:
     ```xml
     <gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
     ```

3. **Step 3**
   - Remove the comments and comment characters (`<!-- and -->`) that surround the gadget, leaving only the gadget:
     ```xml
     <gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
     ```

4. **Step 4**
   - To add the Manage Chats tab and gadget to the agent desktop, look for the following within the `<tabs></tabs>` tag:
     ```xml
     <tab>
     <id>manageChats</id>
     <label>finesse.container.tabs.agent/manageChatsLabel</label>
     <gadgets>
     <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
     </gadgets>
     </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 Chats 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:

```html
<gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chats 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.

Step 8 To add the Chat Control gadget to the supervisor desktop, look for the following under the <role>Supervisor</role> tag and within the <page></page> tag:

```html
<gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
```

Step 9 Remove the comments and comment characters (<!-- and -->), leaving only the gadget

```html
<gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
```

Step 10 To add the Live Data report for Agent Chat Statistics to the supervisor desktop, look for the following:

```html
<gadget>https://localhost:8444/cuic/gadget/LiveData/
LiveDataGadget.jsp?gadgetHeight=310&
viewId=F2F1FC171000014400000014E0A4E5D48&
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:

```html
<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 Chats tab and gadget to the supervisor desktop, look for the following within the <tabs></tabs> tag:

```html
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
    <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
  </gadgets>
</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 Chats gadget.

Step 18 Click Save.
Add Web Chat 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 Control gadget for the agent desktop.

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:

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:

Step 6 Copy the code for the agent Manage Chats tab and gadget from the default layout XML.

Step 7 Paste the code within the <tabs></tabs> tag for the agent role after the Manage Call tab:

Step 8 Replace my-social-miner-server with the FQDN of your SocialMiner server.

Step 9 Optionally, change the height of the Manage Chats 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:

```html
<gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chats 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.

**Step 10** Copy the code for the Live Data gadgets for Agent Chat Statistics and Chat Queue Statistics from the default layout XML.

```html
<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 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 Chats tab and gadget from the default layout XML.

```xml
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
    <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
  </gadgets>
</tab>
```

**Step 13** Paste the code within the `<tabs></tabs>` tag for the supervisor role after the Manage Call tab:

```xml
<tab>
  <id>manageCall</id>
  <label>finesse.container.tabs.supervisor.manageCallLabel</label>
</tab>
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
    <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
  </gadgets>
</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 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 Control gadget for the agent desktop and paste it into a text file.

```xml
<gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
```

**Step 4** Copy the code for the agent Manage Chats tab and gadget and paste it into your text file.

```xml
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.agent.manageChatsLabel</label>
  <gadgets>
    <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
  </gadgets>
</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.

```xml
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=F2F1FC171000014400000014E0A4E5D48&filterId=ChatAgentStats.agentId=CL</gadget>
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=E42EB7881000014400000014E0A4E5CA1&filterId=ChatQueueStatistics.queueName=CL</gadget>
```

**Step 6** Copy the code for the supervisor Manage Chats tab and gadget and paste it into your text file.

```xml
<tab>
  <id>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
    <gadget>https://my-socialminer-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=430</gadget>
  </gadgets>
</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.

**Step 9** Check the Override System Default check box.

**Step 10** In the Resources for <teamname> area, click the Desktop Layout tab.

**Step 11** To add the Chat 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:

```xml
<role>Agent</role>
<pag>
  <gadget>/desktop/gadgets/CallControl.jsp</gadget>
  <gadget>https://localhost/agentdesktop/gadgets/chatControl.xml</gadget>
</pagem>
```
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/chatControl.xml</gadget>
</page>
```

Step 13  To add the Manage Chats 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>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
  </gadgets>
</tab>
```

Step 14  Replace my-social-miner-server with the FQDN of your SocialMiner server.

Step 15  Optionally, change the height of the Manage Chats 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-social-miner-server/multisession/ui/gadgets/multisession-reply-gadget.jsp?gadgetHeight=600</gadget>
```

The default and minimum height of the Manage Chats 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.

Step 16  To add the Live Data gadgets for Web Chat to the supervisor desktop:

a)  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.

b)  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 Chats 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>manageChats</id>
  <label>finesse.container.tabs.supervisor.manageChatsLabel</label>
  <gadgets>
  </gadgets>
</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.
<table>
<thead>
<tr>
<th>Users</th>
<th>Reports</th>
<th>Report View</th>
<th>Is the Report Available in Default Layout?</th>
<th>Tab</th>
<th>Gadget URLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>Agent CSQ Statistics Report</td>
<td>Agent CSQ Statistics Report</td>
<td>Yes</td>
<td>Home</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=76D964AD100001400000000830A4E5E6F&amp;filterId=AgentCSQStats.csqName=CL&amp;compositeFilterId=AgentCSQStats.AgentIds.agentId=loginId&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Agent</td>
<td>Agent Team Summary Report</td>
<td>Agent Team Summary Report</td>
<td>Yes</td>
<td>Home</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=5C626F9C10000140000000600A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Supervisor</td>
<td>Agent Outbound Team Summary Report</td>
<td>Report since midnight</td>
<td>No</td>
<td>Team Data</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=FD919FB9100001400000005D0A4E5B29&amp;filterId=ResourceIAQStats.resourceId=CL&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Supervisor</td>
<td>Agent Outbound Team Summary Report</td>
<td>Short and long term average</td>
<td>No</td>
<td>Team Data</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=FD919FB510000140000000470A4E5B29&amp;filterId=ResourceIAQStats.resourceId=CL&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Supervisor</td>
<td>Chat Agent Statistics Report</td>
<td>Chat Agent Statistics Report</td>
<td>No</td>
<td>Team Data</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=120&amp;viewId=F2F1FC171000014400000014E0A4E5D48&amp;filterId=ChatAgentStats.agentId=CL&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Supervisor</td>
<td>Chat CSQ Summary Report</td>
<td>Chat CSQ Summary Report</td>
<td>No</td>
<td>Queue Data</td>
<td><code>&lt;gadget&gt;https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=120&amp;viewId=E42ED78810000140000007B0A4E5CA1&amp;filterId=ChatQueueStatistics.queueName=CL&lt;/gadget&gt;</code></td>
</tr>
<tr>
<td>Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Gadgets Customization

You can use optional query parameter to adjust height of the gadgets.

#### Table: Gadget URLs

<table>
<thead>
<tr>
<th>Users</th>
<th>Reports</th>
<th>Report View</th>
<th>Is the Report Available in Default Layout?</th>
<th>Tab</th>
<th>Gadget URLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team State</td>
<td>Team State Report</td>
<td></td>
<td></td>
<td></td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=5C90012F10000140000000830A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=5C90012F10000140000000830A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL</a>&lt;/gadget&gt;</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Team Summary Report</td>
<td>Report since midnight</td>
<td>Yes</td>
<td>Team Data</td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=728283C210000140000000530A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=728283C210000140000000530A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL</a>&lt;/gadget&gt;</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Team Summary Report</td>
<td>Short and long term average</td>
<td>Yes</td>
<td>Team Data</td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=7291DCB410000140000000890A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=7291DCB410000140000000890A4E5B33&amp;filterId=ResourceIAQStats.resourceId=CL</a>&lt;/gadget&gt;</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Voice CSQ Summary</td>
<td>Snapshot</td>
<td>Yes</td>
<td>Queue Data</td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8E2DB1610000140000000A60A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8E2DB1610000140000000A60A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL</a>&lt;/gadget&gt;</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Voice CSQ Summary</td>
<td>Short and long term average</td>
<td>Yes</td>
<td>Queue Data</td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8EE241910000140000000C30A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8EE241910000140000000C30A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL</a>&lt;/gadget&gt;</td>
</tr>
<tr>
<td>Supervisor</td>
<td>Voice CSQ Summary</td>
<td>Report since midnight</td>
<td>No</td>
<td>Queue Data</td>
<td>&lt;gadget&gt;<a href="https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8EFS10810000140000000EB0A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL">https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&amp;viewId=C8EFS10810000140000000EB0A4E5E6B&amp;filterId=VoiceIAQStats.esdName=CL</a>&lt;/gadget&gt;</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sign in to Cisco Finesse administration console. Cisco Finesse home page appears.</td>
</tr>
<tr>
<td>2</td>
<td>Click the Desktop Layout tab.</td>
</tr>
<tr>
<td>3</td>
<td>Click Finesse Default Layout XML to show the default layout XML.</td>
</tr>
<tr>
<td>4</td>
<td>Copy the gadget URL for the report you want to add from Live Data Gadgets.</td>
</tr>
<tr>
<td>5</td>
<td>Paste the gadget URL within the tab tags where you want it to appear.</td>
</tr>
</tbody>
</table>

Example:
To add the Agent Report, copy the following:

```xml
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=5C626F9C10000140000000600A4E5E6833&filterId=ResourceIAQStats.resourceId=CL</gadget>
```

Example:
To add the report to the home tab of the agent desktop:

```xml
<finesseLayout xmlns="http://www.cisco.com/vtg/finesse">
  <layout>
    <role>Agent</role>
    <page>
      <gadget>/desktop/gadgets/CallControl.jsp</gadget>
    </page>
    <tabs>
      <tab>
        <id>home</id>
        <label>finesse.container.tabs.agent.homeLabel</label>
        <gadgets>
          <gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=76D4371110000140000000600A4E5E6F&filterId=AgentCSQStats.csqName=CL&compositeFilterId=AgentCSQStats.AgentIds.agentId=loginId</gadget>
        </gadgets>
      </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=5D411E8A1000014000000230A4E5E68&filterId=AgentStateDetailStats.agentID=loginId</gadget>
        </gadgets>
      </tab>
      <tab>
        <id>manageCall</id>
        <label>finesse.container.tabs.agent.manageCallLabel</label>
      </tab>
    </tabs>
  </layout>
</finesseLayout>
```
Manage Desktop Layout

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 into 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.htm?viewId=5C90012F10000140000000B30A4E5B33&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.

```html
<gadget>https://localhost:8444/cuic/gadget/LiveData/LiveDataGadget.jsp?gadgetHeight=310&viewId=5C90012F10000140000000830A4E5B334filterId=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.

---

### 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
- 50 team phone books

The system supports a total of 1500 contacts.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the phone book. The name must be unique, and can be a maximum length of 64 alphanumeric characters.</td>
</tr>
<tr>
<td>Assign To</td>
<td>Indicates if the phone book is global (All Users) or team (Teams).</td>
</tr>
<tr>
<td>Last Name</td>
<td>The last name of a contact. The last name can be a maximum length of 128 characters. This field is optional.</td>
</tr>
<tr>
<td>First Name</td>
<td>The first name of a contact. The first name can be a maximum length of 128 characters. This field is optional.</td>
</tr>
<tr>
<td>Number</td>
<td>The phone number for the contact. The phone number can be 1-32 characters long and cannot be blank.</td>
</tr>
<tr>
<td>Note</td>
<td>Optional text that describes the contact. The note can be a maximum length of 128 characters.</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Manage Phone Books gadget, click <strong>New</strong>. The Manage Phone Books area appears.</td>
</tr>
<tr>
<td>Step 2</td>
<td>In the Name box, enter a name for the phone book. <strong>Note</strong>: Phone book names can be a maximum length of 64 characters.</td>
</tr>
<tr>
<td>Step 3</td>
<td>In the Assign To box drop-down list, select <strong>All Users</strong> if the phone book is global or <strong>Teams</strong> if the phone book is available to specified teams.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

## Edit Phone Book

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Manage Phone Books gadget, select the phone book you want to edit.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click <strong>Edit</strong>. The Edit Phone Books area appears.</td>
</tr>
<tr>
<td>Step 3</td>
<td>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 <strong>All Users</strong> or <strong>Teams</strong>.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Click <strong>Save</strong>. If you change the Assign To field from Teams to All Users, a message appears that asks you to confirm the change. Click <strong>Yes</strong> to confirm.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Max Length</th>
<th>Can Be Blank</th>
<th>Permitted Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>128</td>
<td>Yes</td>
<td>Alphanumeric characters</td>
</tr>
<tr>
<td>Last Name</td>
<td>128</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td>32</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td>128</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Note  The CSV file that contains the contacts to import must use Latin encoding.

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.
Certain reason codes are reserved and cannot be used. For Unified CCX systems, these reserved reason codes are as follows: 0, 22, and 33.

**Note**

**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**

Finess 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason Label</td>
<td>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.</td>
</tr>
<tr>
<td>Reason Code</td>
<td>A code for the Not Ready reason. The value of the code must be between 1 and 999 and must be unique.</td>
</tr>
<tr>
<td>Global?</td>
<td>Yes/No. Indicates if the reason code is available globally to all agents (Yes) or to specific teams of agents (No).</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>In the Manage Reason Codes (Not Ready) gadget, click <strong>New</strong>. The New Reason Code area appears.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>In the Reason Label box, enter a label for the reason code. <strong>Note</strong> Not Ready reason code labels are limited to 40 characters.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>In the Reason Code box, enter a reason code. <strong>Note</strong> The code must be between 1 and 999 and must be unique. Ensure there are no leading or trailing spaces.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>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. <strong>Note</strong> By default, the Global? check box is selected.</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>Click <strong>Save</strong>. <strong>Note</strong> The Finesse server removes leading or trailing spaces before saving the Reason Label in the database.</td>
</tr>
</tbody>
</table>

### 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? checkbox.

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason Label</td>
<td>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.</td>
</tr>
<tr>
<td>Reason Code</td>
<td>A code for the Sign Out reason. The code must be between 1 and 999 and must be unique.</td>
</tr>
<tr>
<td>Global?</td>
<td>Yes/No. Indicates if the reason code is available globally to all agents (Yes) or to specific teams of agents (No).</td>
</tr>
</tbody>
</table>

**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 100 team Wrap-Up reasons.

Finesse supports wrap-up functionality only for incoming calls and Outbound Option Dialer Calls (Finesse does not support Outbound Option Direct Preview mode). Finesse does not support wrap-up for outgoing calls placed by agents.

---

**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 wrap-up and not the pending state selected during the call. The agent can end wrap-up by either selecting a new state (Ready or Not Ready) or letting the wrap-up timer expire. If the agent selects a new state, the new state overrides the pending state selected during the call. If the wrap-up timer expires, the agent transitions to the pending state.

---

The following table describes the fields on the Manage Wrap-Up Reasons gadget.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason Label</td>
<td>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.</td>
</tr>
<tr>
<td>Global?</td>
<td>Yes/No. Indicates if the Wrap-Up reason is available globally to all agents (Yes) or to specific teams of agents (No).</td>
</tr>
</tbody>
</table>

**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
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? checkbox. If the Wrap-Up reason is specific to a team, clear the Global? checkbox.

Note By default, the Global? checkbox 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? checkbox.

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 of the Cisco Finesse administration console 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.

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.

<table>
<thead>
<tr>
<th>Tab Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop Layout</td>
<td>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.</td>
</tr>
</tbody>
</table>
### Tab Name | Description
--- | ---
Phone Books | Use this tab to assign/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/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/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/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/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 de-selected and the Resources area for that team disappears. The list of teams is refreshed and you must select a team again.

### Assign Phone Books and Reasons to Team

**Procedure**

1. **Step 1** In the Manage Team Resources gadget, select a team.
   Tabs for each available resource appear.

2. **Step 2** Click the tab for the resource you want to assign for the selected team.
   The List of <resource> area appears.

3. **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 have 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.
If you clear the Override System Default checkbox, any changes you made to the XML are lost and the XML in the editing pane reverts to the default desktop layout XML.

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 has finished assigning workflows, click Save.

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.

Note

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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the workflow. The name must be unique and can be a maximum length of 40 characters.</td>
</tr>
<tr>
<td>Description</td>
<td>The description of the workflow. The description can be a maximum length of 128 characters.</td>
</tr>
</tbody>
</table>

The following table describes the fields on the Manage Workflow Actions gadget.

<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the workflow action. The name must be unique and can be a maximum length of 64 characters.</td>
</tr>
<tr>
<td>Type</td>
<td>The type of workflow. Possible values are Browser Pop, HTTP Request.</td>
</tr>
</tbody>
</table>

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
• When a call ends
• When making a 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.
• 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

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.

<table>
<thead>
<tr>
<th>Workflow Trigger</th>
<th>Direct Preview Outbound Call</th>
<th>Progressive or Predictive Outbound Call</th>
</tr>
</thead>
<tbody>
<tr>
<td>While previewing a call</td>
<td>When the agent previews the call (before the agent accepts or rejects the call).</td>
<td>Does not trigger.</td>
</tr>
<tr>
<td>When a call arrives</td>
<td>When the agent accepts the call.</td>
<td>Does not trigger.</td>
</tr>
<tr>
<td>When a call is answered</td>
<td>When the customer answers the call.</td>
<td>When the customer answers the call.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>When a call is made</td>
<td>When the customer call is initiated.</td>
<td>When the customer call is initiated or when failover occurs during the call.</td>
</tr>
<tr>
<td>When a call ends</td>
<td>When the customer call ends.</td>
<td>When the customer call ends.</td>
</tr>
</tbody>
</table>

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.

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=variable1 & variable2
```

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.

Example:

/finesse/api/User/dialogId

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>
```

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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Workflow Actions gadget, select the action that you want to delete. The Delete Action area appears.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click <strong>Delete</strong>. A question appears asking you to confirm that you want to delete the selected action.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Click <strong>Yes</strong> to confirm the deletion of the selected action.</td>
</tr>
</tbody>
</table>

### Add Workflow

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Manage Workflows gadget, click <strong>New</strong>. The New Workflow area appears.</td>
</tr>
</tbody>
</table>
| 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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Manage Workflows gadget, select the workflow you want to edit.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click <strong>Edit</strong>. The Edit Workflow area appears.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Edit the fields that you want to change.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

Delete Workflow

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>In the Manage Workflows gadget, select the workflow that you want to delete. The Delete Workflow area appears.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click <strong>Delete</strong>. A question appears asking you to confirm that you want to delete the selected workflow.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Click <strong>Yes</strong> to confirm the deletion of the selected workflow.</td>
</tr>
</tbody>
</table>

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 `hostname` is the hostname of your primary server):

https://hostname:8445/cfadmin

Similarly, agents and supervisors can access their desktops as follows:

https://hostname of server: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.
**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 are not using HTTPS or 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://hostname of primary server:portnumber/cfadmin) or the agent desktop (https://hostname of primary server).

**Step 2**
Perform the steps in the following table for the browser you are using.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you use Internet Explorer:</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>A page appears that states there is a problem with the website's security certificate. Click <strong>Continue to this website (not recommended)</strong>. 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.</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Certificate Error</strong>, and then click <strong>View Certificates</strong> to open the Certificate dialog box.</td>
</tr>
<tr>
<td>3</td>
<td>On the Certificate dialog box, click <strong>Install Certificate</strong>. This action opens the Certificate Import Wizard.</td>
</tr>
<tr>
<td>4</td>
<td>Click <strong>Next</strong>.</td>
</tr>
<tr>
<td>5</td>
<td>Select <strong>Place all certificates in the following store</strong>, and then click <strong>Browse</strong>.</td>
</tr>
<tr>
<td>6</td>
<td>Select <strong>Trusted Root Certification Authorities</strong>, and then click <strong>OK</strong>.</td>
</tr>
<tr>
<td>7</td>
<td>Click <strong>Next</strong>.</td>
</tr>
<tr>
<td>8</td>
<td>Click <strong>Finish</strong>.</td>
</tr>
<tr>
<td>9</td>
<td>If a Security Warning dialog box appears that asks if you want to install the certificate, click <strong>Yes</strong>. A Certificate Import dialog box that states the import was successful appears.</td>
</tr>
<tr>
<td>10</td>
<td>Click <strong>OK</strong>.</td>
</tr>
<tr>
<td>11</td>
<td>Enter your credentials, and then click <strong>Sign In</strong>.</td>
</tr>
</tbody>
</table>
### 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 Finesse 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**.

**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 Finesse 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 Name 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 Name drop-down list, select **tomcat-trust**.
b) In the Root Certificate field, enter the name of the root certificate that you uploaded in the previous step. Do not include the extension (for example, TEST Root CA 2048).
c) In the Upload File field, click **Browse** and browse to the intermediate certificate file.
d) Click **Upload File**.

**Step 8**
Upload the application certificate.

a) From the Certificate Name drop-down list, select **tomcat**.
b) In the Root Certificate field, enter the name of the intermediate certificate that you uploaded in the previous step. Include the .pem extension (for example, TEST-SSL-CA.pem).
c) In the Upload File field, click **Browse** and browse to the application certificate file.
d) Click **Upload File**.

**Step 9**
After the upload is complete, sign out of Finesse.

**Step 10**
Restart Cisco Tomcat on the primary Unified CCX node.

**Step 11**
Restart Cisco Finesse 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 re-authenticate.

**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.
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 via DNS, 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.

a) Sign in to Cisco Unified Operating System Administration on the third-party gadget host (http://host or IP address/cmplatform, where host or IP address is the hostname or IP address of the third-party gadget host).

b) Click Security > Certificate Management.

c) Click Find.

d) Click tomcat.pem.

e) Click Download and save the file on your desktop.

Step 2 Upload the certificate to the designated Finesse system.

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) Click 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.

Step 15 Restart Cisco Tomcat and Cisco Finesse on the secondary Unified CCX node.
f) Click **Upload File**.

**Step 3**
 Restart Cisco Tomcat on the primary Unified CCX node.

**Step 4**
 Restart Cisco Finesse 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 on the secondary Unified CCX node.

---

**Add Certificate for Multi-session Chat**

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 until they accept the SocialMiner certificates. If the multi-session chat gadget is not deployed on the Home tab of the Finesse desktop, agents may not realize that they need to accept the certificates. Have agents check the tab where the multi-session chat 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 multi-session chat gadget are the same as the steps outlined in the procedure **Add Certificate for HTTPS Gadget**, on page 384.

---

**Note**
The procedure to add a certificate for an HTTPS gadget refers to the third-party gadget host. To add a certificate for multi-session chat, perform the applicable steps on the SocialMiner server.

---

**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.
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/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_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:


If you want to use the Finesses 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:


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.


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 387
2. Upload Cisco MediaSense Certificate to Unified CCX Server, on page 387
3. Upload MediaSense Recording License, on page 388
4. Configure MediaSense as a Recording Server, on page 388
5. Call Recording Through Workflow, on page 388
6. Configure MediaSense Search and Play Gadget, on page 389
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


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).


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.

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:
   
   ```xml
   <Dialog>
   <requestedAction>START_RECORDING</requestedAction>
   <targetMediaAddress>extension</targetMediaAddress>
   </Dialog>
   ```

   To add the extension, click the tag icon and select extension.

Example:
### 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**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Sign in to the Cisco Finesse administration console.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Click the Desktop Layout tab.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Find the MediaSense tab and gadget in the layout XML. Update the layout according to the comments in the layout.</td>
</tr>
</tbody>
</table>

```xml
<!--
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.

<Dialog>
  <requestedAction>START_RECORDING</requestedAction>
  <targetMediaAddress>extension</targetMediaAddress>
  <targetMediaAddress>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <extension>extension</extension>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <extendedExtension>extension</extendedExtension>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <smartMediaURL>http://my-mediasense-server/media/recording</smartMediaURL>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <smartMediaURL>http://my-mediasense-server/media/recording</smartMediaURL>
  <smartMediaURL>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <extendedExtension>extension</extendedExtension>
  <smartMediaURL>http://my-mediasense-server/media/recording</smartMediaURL>
</Dialog>

<Dialog>
  <startRecording>START_RECORDING</startRecording>
  <extendedExtension>extension</extendedExtension>
  <smartMediaURL>http://my-mediasense-server/media/recording</smartMediaURL>
  <smartMediaURL>
</Dialog>
```
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.
Extend and Connect

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.


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.

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**.

Step 3 Install Cisco IM and Presence as a Call Manager subscriber.

Step 4 Activate and start all the Cisco IM and Presence services in **Cisco Unified Serviceability**.

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.

Step 6 Create UC services for CTI and IM Presence services in Call Manager.
**Note** You must select CTI and IM Presence services.

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.

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.

**Step 10**
Add the route pattern in Call Manager to route the calls to the remote device.

**Step 11**
Configure the Presence Gateway configuration on IM and Presence.

---

**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.
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, page 395
- Trigger Availability by License Package, page 396
- Subsystem Availability by License Package, page 396
- Unified CCX Services Availability by License Package, page 397
- Unified CCX Component Availability by License Package, page 398

Application Availability by License Package

The following table lists the applications available with each license package:

<table>
<thead>
<tr>
<th>Application</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Script Application</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Busy</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ring No Answer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified ICME Post Routing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unified ICME Translation Routing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Application

<table>
<thead>
<tr>
<th>Application</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Script Application</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Trigger Availability by License Package

The following table lists the triggers available with each license package:

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CM Telephony</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>HTTP</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Subsystem Availability by License Package

The following table lists the subsystems available with each license package:

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMT Subsystem</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Core RTR Subsystem</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Database Subsystem</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>eMail Subsystem</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Enterprise Server Data Subsystem</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>HTTP Subsystem</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Unified CM Telephony Subsystem</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>MRCP ASR Subsystem</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>MRCP TTS Subsystem</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Outbound Subsystem</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>RmCm Subsystem</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Unified CCX Services Availability by License Package

The following table lists the Unified CCX Services available with each license package:

<table>
<thead>
<tr>
<th>Unified CCX Services</th>
<th>None</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CCX Cluster View Daemon</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Administration</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Engine</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop Call/Chat Service</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop Enterprise Service</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop IP Phone Agent Service</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop LDAP Monitor Service</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop License and Resource Manager</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop Recording Service (call recording)</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop Recording and Statistic Service</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

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 Component Availability by License Package

The following table lists the Unified CCX Component available with each license package:

<table>
<thead>
<tr>
<th>Unified CCX Component</th>
<th>None&lt;sup&gt;5&lt;/sup&gt;</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Desktop Sync Service</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Desktop VoIP Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisco Finesse Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unified CCX On-Demand Recording</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified Intelligence Center Reports</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Cisco Unified CCX Database</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

<sup>5</sup> 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:

<table>
<thead>
<tr>
<th>Unified CCX Component</th>
<th>None&lt;sup&gt;6&lt;/sup&gt;</th>
<th>Unified IP IVR</th>
<th>Unified CCX Standard</th>
<th>Unified CCX Enhanced</th>
<th>Unified CCX Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified CCX Cluster View Daemon (CVD)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Engine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unified CCX Repository Datastore</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Historical Datastore</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Configuration Datastore</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Agent Datastore</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Recording</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unified CCX Monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

<sup>6</sup> Available upon installation, before license package is activated.
INDEX

A

AAR 68, 139, 141, 276
files 139
group 68
management 276
uploading files 141
active server 5, 149, 150
administrator privileges 260
Administrator User Group 217
agent 34, 113, 238, 259, 261
capabilities 259
configuring 34
configuring teams 113
handling callbacks 238
user privileges 261
All Users Group 217
alternative pronunciation 265
Call by Name window 265
Call by Name window, how to add 265
application 3, 6, 11, 52, 186, 187, 192, 273, 395
by package license 395
configuration overview 11
management 273
report 186, 187, 192
server 3
subsystem 6
triggers 52
architecture, cluster 4
ASR 81, 82
overview 81
provisioning 82
Automated Alternate Routing, See AAR
automatic failover 5, 149, 150
Automatic Speech Recognition, See ASR

B

best practices 223
security 223

busy application 45
about 45
provisioning 45

cache size 240
contact records 240
call control channel 64
call waiting 230
disabling in Unified CM 230
calling search space 68, 74
ignore setting 74
restrict users 74
Unified CM Telephony trigger setting 74
usage 68, 74
campaigns 229, 239, 245
importing contacts 245
Outbound subsystem 229
time changes 239

capabilities 259
users 259
channels 64
provisioning 64
Cisco Desktop Administration 113
Cisco IP Agent and Supervisor desktops 1
about 1
Cisco Media subsystem 6, 80
about 6
provisioning 80
Cisco Script Application 42, 43, 52
adding 42, 43
adding a trigger 52
Cisco Security Agent 227
usage 227
Cisco TelePresence application 36
Cisco Unified CCX Administration web interface 1, 15, 16, 18, 19
about 1, 15
configuration web pages 18
menu bar and menus 16
using navigation bars 19
Cisco Unified CCX applications 41
Cisco configuration overview 41
Cisco Unified CCX cluster 149
profile 149
Cisco Unified CCX component availability 398
by package license 398
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
Enterprise Server 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 261
Cisco Unified CCX user options web interface 263
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 17
navigating 17
Cisco Unified IP IVR, about 6
cluster 4, 5
active server 5
architecture 4
cluster manager 5
cluster view daemon 5
cluster, definition 149
CM Telephony 278, 279
Call Control group configuration 279
provider configuration 278
triggers 279
CMT dialog channels, about 80
CMT dialog group 80
about 80
CMT dialog interactions, about 80
competence level, about 98
component, definition 149
Computer Telephony Interface, See CTI
collection configuration 1
datastore server 1
configuration checklist 234
Outbound subsystem 234
configuration updates 239
Outbound subsystem 239
configuring, definition 8
Contact Service Queues 102, 103, 105, 107
about 102
configuration web page 105
creating 103, 105
deleting 107
modifying 107
contact summary report 226
Outbound 226
contacts report 188
Core Reporting subsystem, about 6
CPU utilization 57
and VRU scripts 57
creating campaigns 234
CSQ 3, 102, 234, 239, 283
about 3
creating 283
Outbound percentage 239
Outbound subsystem percentage 234
resource based 102
skill based 102
Subsystems menu 283
CSQ Cisco Unified CCX Stats report 197
CTI 6, 74
managing clusters 6
port device and route point 74
custom 269
classpaths for custom classes, steps, subsystems 269
custom file configuration 269
custom file configuration (System menu) 138

D
daily purge schedule 176
about 176
configuring 176
database 124, 125, 297
maximum connections 124, 125
parameter 297
database (continued)
  password 124, 125
  username 124, 125
Database 227
  in service 227
database connectivity 125
  polling 125
Database subsystem 6, 117, 124, 125, 310
  about 6, 117, 124
  adding JDBC datasource 124
  configuration overview 124
  configuration web page 125
  configuring 124
  defining ODBC datasource 310
  supported Enterprise Databases 124
datasource usage report 193
datasource, adding 297
Daylight Savings Time, See DST
db_cra database 238
  area code mapping 238
default time zone 248
devices 357
  by package license 397
dialing functionality 226
dialing mode 226, 230
  direct preview 226, 230
dialing prefixes 234
  geographic area 234
Directory Number 31
  associations 31
Directory Number information 74
Do Not Call list 227
  Outbound subsystem 227
do_not_call list 227
  national 227
document file 135
  unzipping after upload 135
documents 132
  about 132
DST 233
  Outbound subsystem 233

F
failover 5
  automatic 5
feature, definition 149
files 128, 135
  adding zip 135
  managing for applications 129

G
general properties 234, 235
  Outbound subsystem 234, 235
geographic region 227
  Outbound support 227
grammars 131
  about 131
Group 217

H
handling callbacks 238
Help menu 321, 322, 323
  About 323
  Contents and Index 321
  For this Page 322
high availability 150
historical report user capabilities 259
historical report user privileges 261
historical reporting 1, 12
  client 1
  configuration overview 12
  historical reporting database 174, 176, 178
    configuring daily purge schedule 176
    configuring database server 174
    file restore 178
    purge configuration 176
  historical reports database 177
  purging manually 177
  historical reports database server 1
    about 1
HTTP subsystem 6, 117, 122
  about 6, 117, 122
    configuration overview 122
HTTP triggers, adding 55

I
importing campaigns 234
Integrated Service Router, See ISR

database (continued)
  password 124, 125
  username 124, 125
Database 227
  in service 227
database connectivity 125
  polling 125
Database subsystem 6, 117, 124, 125, 310
  about 6, 117, 124
  adding JDBC datasource 124
  configuration overview 124
  configuration web page 125
  configuring 124
  defining ODBC datasource 310
  supported Enterprise Databases 124
datasource usage report 193
datasource, adding 297
Daylight Savings Time, See DST
db_cra database 238
  area code mapping 238
default time zone 248
devices 357
  by package license 397
dialing functionality 226
dialing mode 226, 230
  direct preview 226, 230
dialing prefixes 234
  geographic area 234
Directory Number 31
  associations 31
Directory Number information 74
Do Not Call list 227
  Outbound subsystem 227
do_not_call list 227
  national 227
document file 135
  unzipping after upload 135
documents 132
  about 132
DST 233
  Outbound subsystem 233

F
failover 5
  automatic 5
feature, definition 149
files 128, 135
  adding zip 135
  managing for applications 129

G
general properties 234, 235
  Outbound subsystem 234, 235
geographic region 227
  Outbound support 227
grammars 131
  about 131
Group 217

H
handling callbacks 238
Help menu 321, 322, 323
  About 323
  Contents and Index 321
  For this Page 322
high availability 150
historical report user capabilities 259
historical report user privileges 261
historical reporting 1, 12
  client 1
  configuration overview 12
  historical reporting database 174, 176, 178
    configuring daily purge schedule 176
    configuring database server 174
    file restore 178
    purge configuration 176
  historical reports database 177
  purging manually 177
  historical reports database server 1
    about 1
HTTP subsystem 6, 117, 122
  about 6, 117, 122
    configuration overview 122
HTTP triggers, adding 55

I
importing campaigns 234
Integrated Service Router, See ISR
international area codes 227
mapping 227
invalid number 238
handling callbacks 238

J
JDBC datasource 124, 125
adding 124, 125

L
LDAP server information (System menu) 151
license 10, 74, 118, 122, 124, 126, 395, 396, 397, 398
adding components 10
application availability 395
Cisco Unified CCX component availability 398
database subsystem 124
eMail subsystem 126
HTTP subsystem 122
product 74
service availability 397
subsystem availability 396
trigger availability 396
Unified ICME subsystem 118
logout 271
logout (System menu) 171

M
manage scripts 274
managing users 259
master service, definition 149
media channel 64
missed callback 238
MRCP ASR 82, 83, 85
  groups configuration 85
  provider configuration 82
  provisioning 82
  server configuration 83
MRCP ASR server, about 1
MRCP ASR subsystem 6, 82
  about 6
  configuration overview 82
  provisioning 82
MRCP TTS 87, 88, 91
  locals configuration 91
  provider configuration 88
  provisioning 87
MRCP TTS server, about 1
MRCP TTS subsystem 6, 87
  about 6, 87
  provisioning 87
  multiple time zones 248

N
national do_not_call list 227, 245
navigating 17
Cisco Unified Communications Manager Administration 17
nickname 265
node, definition 149

O
ODBC datasource 124, 310
  about 124
  defining 310
Outbound 230
  licensed seat 230
Outbound subsystem 227
  Do Not Call list 227
Outbound Subsystem 227
  in service 227
Overall Unified CCX Stats report 193

P
pending records 233
  Outbound subsystem 233
pending state 239
Permissions 218
  and User Groups 218
plug-ins 307
point system for provisioning channels 64
product 74
  licenses 74
  product license 118, 122, 124, 126
  database subsystem 124
eMail subsystem 126
HTTP subsystem 122
Unified ICME subsystem 118
profile, cluster 149
prompts 129, 136, 137, 138
  about 129, 136
  adding spoken name prompt 138
  recording 137
  provisioning call control groups 68
  provisioning checklist 65
  telephony and media resources 65
Provisioning checklist 22
  Unified CCX subsystem 22
  provisioning, definition 8
  publisher 5
    cluster manager 5
  purge configuration 176
    parameters 176
  purging 176
    automatic 176
    manual 176
  purging, manually 177

Q
queuing calls 79
  with Unified CCX 79

R
read permission 218
real-time reports 178, 180, 181, 182, 183, 185, 186, 187, 188, 192, 193, 197, 198, 206
  about 178
  application tasks 187
  application tasks summary 186
  available reports 178
  contact summary 185
  contacts 188
  CSQ Cisco Unified CCX Stats 197
  datasource usage 193
  engine tasks 187
  Overall Unified CCX Stats 193
  printing reports 181
  resetting statistics 182
  Resource Unified CCX Stats 198, 206
  running reports 180
  sessions 192
  setting appearance 183
  setting options 182
  viewing subreports 181
Refresh All button 19
Remote Monitoring application 51
  about 51
  provisioning 51
Resource based CSQ 102
resource groups 95, 96, 283
  creating 95, 283
  deleting 96
  modifying name 95
Resource Manager, about 3
Resource pool selection criteria 108, 109
  between skills and groups 108
  within a CSQ 109
Resource Unified CCX Stats report 198, 206
resources 99, 101, 102, 282
  assigning to resource groups and skills in bulk 101
  assigning to resource groups and skills individually 99
  modifying 282
  removing skills from individual agents 102
resynchronizing 66, 67, 79
  Cisco JTAPI Client 66
  Unified CM Telephony data 67
  Unified CM Telephony information 79
Ring-No-Answer application 46
  about 46
  provisioning 46
RmCm provider 94
  about 94
  provisioning 94
RmCm subsystem 227
  in service 227
RmCm subsystem, about 6
RNA application 46
  about 46
  provisioning 46
Run As 221
S
scheduling callbacks 233
  Outbound subsystem 233
script application 42, 43
  about 42, 43
  configuration overview 42, 43
script management 57, 274
script repository 42, 43
scripts 57, 58, 59, 60, 61
  about 57
  deleting 61
  refreshing 59
  renaming 60
  viewing or downloading 58
scripts, uploading 57
security 223
  best practices 223
servers 149, 150
  active and standby 149, 150
Service Control interface 119
service, definition 149
Session Initiation Protocol, See SIP
sessions report 192
SIP 6
  router integration 6
Skill based CSQ 102
skills 97, 102, 284
  creating 97, 284
  deleting 97
  modifying name 97
  removing 284
  removing from individual agents 102
spoken name prompt 138
  adding 138
standby server 149, 150
standby service, definition 149
subscriber 5
  clustermanager 5
subsystems 396
  by package license 396
Subsystems menu 80, 277, 278, 279, 281, 282, 283, 284, 285, 296, 297, 299, 300, 301
  Add a New Dialog Control Group 80
  adding HTTP triggers 299
  adding teams 285
  agent-based routing 285
  assigning skills 284
  Cisco Media 300
  CM Telephony 278
  CM Telephony Call Control group configuration 279
  CM Telephony provider configuration 278
  CM Telephony triggers configuration 279
  database configuration 297
eMail 299
  general 296
  HTTP 299
  MRCP ASR 300
  MRCP TTS 301
  remote monitoring 284
  resource group 283
  resources 282
  RmCm provider 284
  skills configuration 282
  teams 285
  Unified CCX 281
  Unified ICME 296
  VRU scripts 296
supervisor 113
  configuring teams 113
supervisor capabilities 259
supervisor privileges 260
System menu 138, 151, 171, 267, 269, 271
  about 267
  custom file configuration 138, 269
  LDAP Information 151
  logout 171, 271
  system parameters 151
systems parameters (System menu) 151

T

team 113, 114, 115
  configuring 113
  creating a team 114
  deleting a team 115
  making changes to agents on a team 114
Text-to-speech, See TTS
time zone 233, 238
  determining local time 233
  handling callbacks 238
toolbar 19
  using 19
Tools menu 184, 185, 186, 187, 188, 192, 193, 197, 198, 206, 208, 209, 210, 211, 307, 308, 309, 313, 315, 316, 317, 318, 319, 322
  application task summary 186
  application tasks 187
  Clear Contact 209
  contact summary report 185
  contacts 188
  CSQ Unified CCX Stats 197
data source usage 193
  engine tasks 187
  file restore 315
  historical reporting 313
  Open Printable Report 208
  Options 211
  overall Unified CCX Stats 193
  overview 307
  password management 319
  plug-ins 307
  purge now 315
  purge schedule 315
  real-time reporting 308
  real-time snapshot config 309
  Refresh Connections 208
  report 184
  Reset All Stats 208
  Resource Unified CCX Stats 198, 206
  sessions 192
  Tools 208
  troubleshooting tips 322
  user configuration 315
  user management 315, 316
  user management, Name Grammar Generation 317
  user management, Spoken Name Upload 318
  Views 210
  Tools menu 211
  Settings 211
triggers 396
  by package license 396
triggers and applications 52
TTS 81, 87, 89
  default provider 89
overview 81
provisioning 87
VXML applications 89

U
UNICODE 87
Unified CCX 3, 263
  about 3
  installing agent desktop 263
Unified CCX Administration 15
  connecting 15
Unified CCX Agent Desktop, about 3
Unified CCX components 3
  CSQ 3
  Resource Manager 3
  Unified CCX Agent Desktop 3
Unified CCX Enhanced with CTI Option, about 3
Unified CCX Enhanced, about 3
Unified CCX Standard, about 3
Unified CM 30, 265
  connecting to web interface 30
users 265
Unified CM telephony 65
  configuration 65
Unified CM Telephony 74
  trigger information 74
Unified CM Telephony information, resynchronizing 79
Unified CM Telephony subsystem 6, 65, 67, 68, 74, 227
  about 6
  configuration overview 65
  configuring Unified CM Telephony providers 67
  in service 227
  provisioning call control groups 68
  provisioning Unified CM Telephony trigger 74
Unified CM Telephony trigger 53
  adding 53
Unified CM Telephony triggers 79
  using with Unified CCX 79
Unified CM User Options page 265
Unified Communications Manager 31
  configure users 31
Unified ICME 6
  about 6
Unified ICME post-routing application 47
  about 47
  provisioning 47
Unified ICME script commands 118
Unified ICME subsystem 117, 118, 119, 121
  about 117, 118
  configuration overview 118
  configuring general Unified ICME information 119
  configuring VRU scripts 121
Unified ICME translation-routing application 49
  about 49
  provisioning 49
Unified IP IVR, about 3
uploading licenses 10
uploading scripts 57
User Groups 217, 218
  Administrator User Group 217
  and Permissions 218
  Child Groups 217
  Groups 217
User Permissions 218
  write, read, and execute 218
user roles 259
users 31, 221
  configuring in Unified Communications Manager 31
  Run As 221

V
virtual agents 36
virtual infrastructure 36
voice gateways 1
VRU scripts 57, 121, 296
  configuring 121, 296
  uploading time 57
VXML applications 89
  default TTS provider 89

W
wizards 20
  using 20
Wizards menu 303, 304
  Application 303
  RmCm 304
wrap-up data 113
  usage 113
write permission 218

Z
zip files, uploading 135