ADMINISTRATOR GUIDE

Cisco Smart CallConnector Server 2.1

Cisco Smart CallConnector Server - Administration Guide

Cisco Smart CallConnector Server (Version 2.1)

Administrator Guide

Table of Content

1 PREFACE 1.1

1.1 PURPOSE 1.2
1.2 AUDIENCE 1.2
1.3 ORGANIZATION 1.3
1.4 RELATED DOCUMENTS 1.4
1.5 REQUIRED TELEPHONE SYSTEMS 1.4
1.6 SUPPORTED WINDOWS PLATFORMS 1.4
1.7 CONVENTIONS 1.5
1.7.1 Conventions Used 1.5
1.8 TERMINOLOGY 1.5
1.8.1 Using the Mouse 1.7
1.9 OBTAINING DOCUMENTS 1.7
1.9.1 Cisco.com 1.7
1.9.2 Documentation Feedback 1.7
1.10 CISCO PRODUCT SECURITY OVERVIEW 1.8
1.11 REPORTING SECURITY PROBLEMS IN CISCO PRODUCTS 1.8

2 CALLCONNECTOR SERVER OVERVIEW 2-1

2.1 CALLCONNECTOR OVERVIEW 2-2
2.2 CALLCONNECTOR PRODUCT MODELS 2-2
2.3 CALLCONNECTOR ADVANCED CLIENT 2-3
2.4 CALLCONNECTOR OPERATOR CONSOLE 2-4
2.5 CALLCONNECTOR SERVER 2-6
2.5.1 System SIP Server 2-7
2.5.2 System Tracker Server 2-7
2.5.3 Database Server 2-7
2.5.4 Call Controller Server 2-8
2.5.5 Instant Message Server 2-8
2.5.6 Presence Server 2-9
2.6 CALLCONNECTOR SERVER CONFIGURATION OVERVIEW 2-12
2.6.1 Cisco Router Setup for CallConnector Server 2-12
2.6.2 Steps to Configure CallConnector Server 2-13

3 INSTALLING SERVER SOFTWARE 3-1

3.1 CALLCONNECTOR SERVER INSTALLATION 3-2
3.1.1 Pre-Requisites for Server Installation 3-3
3.1.2 Windows Access Rights: 3-3

3.2 MINIMUM SYSTEM REQUIREMENTS 3-4
3.2.1 Computer and Windows OS 3-4
3.2.2 Application Software 3-4
3.2.3 Telephone System 3-5
3.2.4 LAN Access and Ports 3-6
3.3 DOWNLOAD SITE 3-6
3.4 THE INSTALLATION PACKAGE 3-6
3.5 INSTALLING THE CALLCONNECTOR SERVER 3-7
3.5.1 Step 1: Download the Server Installation Program 3-7
3.5.2 Step 2: Run the CallConnector Server Installation 3-7
3.5.3 Required Software Components 3-8
3.5.4 Start the Installation 3-8
3.5.5 Software License Agreement 3-10
3.5.6 Customer Information 3-11
3.5.7 Network Options 3-12
3.5.8 Location and Dialing Information 3-13
3.5.9 Program Files Location 3-14
3.6 ACTIVATING THE CALLCONNECTOR SERVER 3-15
3.6.1 Select License Mode 3-17
3.6.2 Register CallConnector Server 3-18
3.6.3 Advanced Options (Alternative Licensing Options) 3-20
3.6.4 Problems with Activation 3-22
3.6.5 Finish the installation 3-23
3.7 PERFORMING AN UPGRADE 3-24
3.8 REMOVING CALLCONNECTOR SERVER 3-24

4 CISCO UC500/CME-ISR CONFIGURATION 4-1

4.1 CISCO ROUTER CONNECTIONS OVERVIEW 4-3
4.2 ROUTER CONFIGURATION FOR CALLCONNECTOR SERVER 4-4
4.2.1 Cisco Router Setup for CallConnector Server 4-4
4.2.2 Additional Cisco Router Setup for Operator Consoles 4-5
4.3 MULTIPLE ROUTERS FOR CALLCONNECTOR SERVER 4-6
4.4 USING CISCO CONFIGURATION ASSISTANT/PROFESSIONAL 4-8
4.5 SETUP ROUTER FOR DOWNLOAD ACCESS 4-9
4.5.1 Summary Steps: 4-9
4.5.2 Detailed Steps: 4-10
4.6 SETTING UP EPHONE PARAMETERS (UC500 AND CME-ISRS ONLY) 4-11
4.7 SETTING UP THE RADIUS ACCOUNTING 4-14
4.7.1 Radius Parameter Setup Summary 4-14
4.7.2 Radius Configuration Notes 4-15
4.7.3 To Setup Radius Parameters on Cisco Router 4-16
4.7.4 Sending Radius Messages to Multiple Addresses 4-18
4.7.5 Verifying Radius Settings 4-19
4.8 CONFIGURING OPERATOR CONSOLES 4-22
4.8.1 Configuration of the Operator's Phone 4-22
4.8.2 Distribution of Calls to Operators 4-26
4.8.3 Operator Incoming Call Queue 4-26
4.8.4 Hunt-group based Call Queues 4-27
4.8.5 Queues for Multiple Operators 4-28
4.8.6 Busy and Night Service Routing 4-30
4.8.7 Park Numbers 4-30
4.8.8 Page Numbers 4-30
4.9 SETTING UP CISCO ROUTER HARDWARE CONFERENCING 4-31

4.9.2 Enabling DSP Farm Services for a Voice Card *4-31*
4.9.3 Configuring Join and Leave Tones *4-31*
4.9.4 Configuring SCCP for Cisco *4-32*
4.9.5 Configuring the DSP Farm *4-32*
4.9.6 Associating Cisco with a DSP Farm Profile *4-32*
4.9.7 Enabling Multi-Party Ad Hoc Conferencing *4-33*
4.9.8 Configuring Ad Hoc Conferencing Numbers *4-33*
4.9.9 Configuring Conferencing Options for a Phone *4-33*
4.10 SETUP DIRECT TRANSFER TO VOICEMAIL 4-34
4.10.2 To Setup the Transfer-to-Voicemail Script *4-35*
4.10.3 Example of Dial-Peer for VM Transfer *4-38*
4.10.4 Verifying Hunt Groups *4-39*

5 GUIDES, LICENSE & MAINTENANCE 5-1

5.1 NAVIGATING THE GUIDES, LICENSE & MAINTENANCE WINDOW 5-2
5.1.1 Guides, License & Maintenance Toolbar *5-3*
5.1.2 Guides, License & Maintenance Folders *5-4*
5.2 NAVIGATION GUIDES 5-6
5.2.1 Using the Navigation Wizard *5-7*
5.2.2 To Use the Navigation Wizard *5-8*
5.2.3 Accessing a Configuration Step *5-8*
5.2.4 To Quickly Jump to a Specific Step *5-8*
5.2.5 Configuring the CallConnector Server *5-9*
5.2.6 Configuring the CallConnector Standalone Operator *5-13*
5.2.7 Add, Update, Delete CallConnector Users *5-18*
5.2.8 Configure A New Operator Position *5-21*
5.2.9 Add, Modify, Delete Operator Queue Configuration *5-23*
5.3 LICENSE MANAGEMENT 5-26
5.3.1 Different Types of Licenses *5-27*
5.3.2 License Activation *5-27*
5.3.3 User Access License *5-32*
5.3.4 To Reserve License *5-33*
5.3.5 To Free Up an Allocated License *5-33*
5.4 MAINTENANCE 5-34
5.4.1 Database Maintenance *5-35*
5.4.2 Setup Send Email Parameters *5-36*
5.4.3 Email Users *5-37*
5.4.4 Advanced Configurations *5-39*
5.4.5 Problem Report *5-43*
5.5 PUBLISH SOFTWARE UPDATE 5-44
5.6 SCHEDULED TASKS 5-45
5.6.1 Scheduled Stop of CallConnector Services *5-45*
5.6.2 Scheduled Start of CallConnector Services *5-45*
5.6.3 Scheduled Download of CME Phone Configuration *5-45*
5.6.4 Scheduled Import of User Information from CME *5-45*
5.6.5 Scheduled Compact of CallConnector Databases *5-46*
5.6.6 Automatic Tasks Parameters *5-46*
5.6.7 Command Syntax *5-46*
5.6.8 Impact of CME Configuration Changes *5-47*
5.7 SYSTEM STATUS 5-48

6 CONFIGURING CALLCONNECTOR SERVERS 6-1

6.1 SERVER CONFIGURATION OVERVIEW 6-2

6.1.1 CallConnector Server Configuration Steps 6-3
6.2 SETUP ROUTER AND SERVERS CONFIGURATION TASKS 6-5
6.3 NAVIGATING THE SETUP ROUTER AND SERVERS WINDOW 6-6
6.4 MANAGE CISCO ROUTERS 6-11
6.4.1 Add, Delete and Save Routers 6-13
6.4.2 To Add a Cisco Router 6-13
6.4.3 To Save Router Configuration Data 6-13
6.4.4 To Delete Router from the CallConnector Router List 6-14
6.4.5 Download Router Information 6-15
6.4.6 To Download Router Configuration Data 6-16
6.4.7 To Select Phones for CallConnector Server 6-18
6.4.8 Selected Phones 6-19
6.4.9 Ephone List 6-19
6.4.10 To Remove Selected Phones 6-20
6.4.11 Ephone Details 6-21
6.4.12 Ephone Buttons 6-22
6.4.13 To Add New Button 6-23
6.4.14 To Edit A Button 6-24
6.4.15 To Delete A Button 6-24
6.4.16 Ephone Directory Numbers 6-25
6.4.17 To Edit A Directory Number 6-26
6.4.18 To Delete A Directory Number 6-27
6.4.19 Hunt Groups 6-28
6.4.20 To Add New Hunt Group 6-29
6.4.21 To Delete A Hunt Group 6-29
6.4.22 Hunt Group Details 6-30
6.4.23 To Edit A Hunt Group 6-30
6.4.24 Assigning Hunt Numbers 6-31
6.4.25 To Assign Directory Numbers to A Hunt Group 6-31
6.4.26 To Remove Directory Numbers Out Of A Hunt Group 6-32
6.5 DIALING PLAN SETTINGS 6-33
6.5.2 To Setup the Dialing Plan Parameters 6-37
6.5.3 To Test How a Number will be Dialed or Looked up 6-39
6.5.4 Additional Number Translation Rules 6-40
6.5.5 To Setup a Number Translation Rule 6-42
6.6 SETUP RADIUS 6-43
6.6.1 Available routers/Radius status 6-44
6.6.2 Radius Parameters 6-44
6.6.3 To Setup Radius 6-44
6.6.4 To Update Radius 6-45
6.6.5 Router Radius Verification 6-45
6.6.6 To Monitor Radius Status 6-48
6.6.7 To Capture Radius Debug Status 6-48
6.7 SERVER OPTIONS 6-49
6.7.1 Addresses and Ports 6-49
6.7.2 To Enable Trace Logs 6-51
6.7.3 To Configure System SIP Server Communication 6-52
6.7.4 To Configure System Tracker Server Communication 6-53
6.7.5 To Configure Database Server Communication 6-54
6.7.6 To Configure Call Controller Server Communication 6-55
6.7.7 To Configure Presence Server Communication 6-57
6.7.8 To Configure Automation Server Communication 6-58
6.7.9 Call Controller Options 6-58

6.7.10 To Change Network Adaptor 6-59
6.8 LOCATION MANAGEMENT 6-60
6.8.1 To Add New Location 6-60
6.8.2 To Edit Current Location 6-61
6.8.3 To Delete A Location 6-61
6.8.4 To Pre-Pend Long Distance Code for Lookup 6-61
6.9 SERVICE MANAGEMENT 6-62
6.9.1 Using Service Management 6-62
6.9.2 To Start the Server Services 6-63
6.9.3 To Stop the Server Services 6-63
6.9.4 Using Windows Services Manager 6-64
6.9.5 6-67

7 MANAGE USERS & CONTACTS 7-1

7.1 MANAGING USERS AND CONTACTS OVERVIEW 7-2
7.1.1 CallConnector Users 7-2
7.1.2 CallConnector Directories 7-3
7.1.3 Importing Contact Data 7-5
7.1.4 Group Management 7-5
7.1.5 CallConnector User - Summary of Configuration Steps 7-6
7.1.6 Directory Contacts – Summary of Configuration Steps 7-7
7.1.7 Pre-Requisites for Directory Configuration 7-8
7.2 NAVIGATING THE USER/CONTACTS WINDOWS 7-9
7.2.2 Pre-requisite Information for configuring Users and Contacts 7-13
7.2.3 To Open the Manage Users/Contacts Window 7-13
7.3 CALLCONNECTOR USERS PAGE 7-14
7.3.2 User Profile Fields 7-15
7.3.3 CallConnector User Phone 7-17
7.3.4 To Associate a Phone with a CallConnector User 7-18
7.3.5 CallConnector User Associates 7-19
7.3.6 To Configure a CallConnector User's Co-Workers 7-19
7.4 MAINTAINING USER INFORMATION 7-20
7.4.1 User Configuration Tasks 7-20
7.4.2 To Add New CallConnector User 7-20
7.4.3 To Add New CallConnector Operator 7-21
7.4.4 To Update CallConnector User Information 7-21
7.4.5 To Update a User Phone 7-22
7.4.6 To Delete One or More Users 7-22
7.4.7 To Specify User's Alternate Contacts 7-22
7.5 IMPORTING CALLCONNECTOR USERS 7-23
7.5.1 User Import Wizard 7-24
7.5.2 To Import CallConnector Users 7-26
7.6 CORPORATE DIRECTORY CONTACTS 7-27
7.6.1 Types of Contacts 7-29
7.6.2 To Open and View the non-User Contacts in the Directory 7-29
7.6.3 To Search for a Contact in the Corporate Directory List 7-30
7.6.4 To Add a New Directory Contact 7-31
7.6.5 To Update an Existing Directory Contact 7-31
7.6.6 To Delete one or more Directory Contacts 7-31
7.7 IMPORTING DIRECTORY CONTACTS 7-32
7.7.1 Contact Import Wizard 7-34
7.7.2 To Import Contacts 7-38
7.8 MAINTAINING GROUPS 7-39

7.8.1 Group Window *7-40*
7.8.2 Maintaining Group Information *7-40*
7.8.3 To Add New Group *7-40*
7.8.4 To Edit Group Information *7-40*
7.8.5 To Delete A Group *7-41*
7.8.6 To Allow/Restrict Group Access *7-41*
7.9 SETTING UP COMPANY WORK SCHEDULE 7-42
7.9.1 Maintaining Holidays *7-43*
7.9.2 To Add New Holidays *7-43*
7.9.3 To Edit Holiday Entries *7-43*
7.9.4 To Delete Holiday Entries *7-44*
7.9.5 Configure Work Day Hours *7-44*
7.9.6 Configure Work Days *7-44*
7.9.7 To Setup Working Days *7-45*

8 CONFIGURING OPERATOR PARAMETERS 8-1

8.1 OPERATOR PARAMETERS OVERVIEW 8-2
8.1.1 Operator Console Configuration Tasks *8-3*
8.1.2 Notes *8-4*
8.2 ROUTER CONFIGURATION FOR OPERATOR CONSOLES 8-5
8.2.1 Overview *8-5*
8.2.2 Configuration Examples *8-6*
8.2.3 Operator's Phone *8-6*
8.2.4 Incoming Call Routing *8-9*
8.2.5 Busy/Night Routing *8-10*
8.2.6 Routing to Voice Mail *8-11*
8.2.7 Setup for Park Numbers *8-11*
8.2.8 Overhead Paging *8-12*
8.3 NAVIGATING THE OPERATOR CONSOLE WINDOW 8-13
8.3.2 Pre-requisite Information for Configuring Console Parameters *8-17*
8.3.3 Operator Configuration Steps *8-18*
8.3.4 To Open the Console Parameters Window *8-19*
8.4 CONFIGURING INCOMING CALL QUEUES 8-20
8.4.1 What is an Incoming Call Queue *8-20*
8.4.2 Local Call Queue Example *8-23*
8.4.3 Hunt Call Queue Example for Multiple Operators *8-24*
8.4.4 Example of Call Queues for a Primary Operator and a Backup Operator *8-26*
8.4.5 Fields in the Call Queues Window *8-27*
8.4.6 Configuring Call Queues *8-30*
8.4.7 To Create New Call Queues *8-30*
8.4.8 To Edit Existing Call Queues *8-30*
8.4.9 To Delete Call Queues *8-30*
8.5 CONFIGURING HELD, PARKED AND TRANSFERRED QUEUES 8-31
8.5.1 Selecting Park Slots *8-31*
8.5.2 To Select Park Numbers for the Operators *8-32*
8.5.3 To Deselect Park Numbers for the Operators *8-32*
8.5.4 Configuring Predefined Queues Parameters *8-33*
8.5.5 To Configure Predefined Queue Parameters *8-33*
8.6 SPEED DIALS AND PAGES 8-34
8.6.1 Maintaining Speed Dials *8-35*
8.6.2 To Open System Speed Dial Page *8-36*
8.6.3 To Create New Speed Dials *8-36*
8.6.4 To Modify System Speed Dials *8-36*

8.6.5 To Delete System Speed Dials 8-36
8.6.6 Maintaining Page Numbers 8-37
8.6.7 To Open Manage Page Numbers Window 8-37
8.6.8 To Create New Page Numbers 8-37
8.6.9 To Modify Page Numbers 8-38
8.6.10 To Delete Page Numbers 8-38

CHAPTER 1

1 Preface

This chapter introduces Cisco Smart CallConnector Server for Microsoft Windows® (referred to as the CallConnector Server), describes the purpose of this document, and outlines the required software. This document describes the configuration of the CallConnector Server version 2.1.

The chapter includes the following topics:

- Purpose
- Audience
- Organization
- Related Documentation
- Required Software
- Supported Windows Platforms
- Conventions
- Obtaining Documentation
- Documentation Feedback
- Cisco Product Security Overview
- Obtaining Technical Assistance
- Obtaining Additional Publications and Information

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1.1 Purpose

This manual is intended for system administrators and technical support individuals who will be setting up, configuring and maintaining the CallConnector Server.

CallConnector Server consists of a set of server applications that provide shared access to control of telephones, databases and presence services to the CallConnector clients. This purpose of this guide is to provide step-by-step instructions to install and setup these server applications. The document also provides instructions for using the diagnostic tool to isolate problems encountered in the operation and usage of the CallConnector solution.

This document also provides links to additional product information and the methods and options for accessing support.

1.2 Audience

This manual is intended for system administrators and technical support personnel who will be setting up and configuring the CallConnector Server and supporting the CallConnector end-users.

The administrative guide assumes that you know the basics of using your computer and are familiar with Windows, using a mouse and selecting items from a dialog box.

1.3 Organization

This guide contains eight chapters:

Preface -	This chapter provides an overview of the Administrator Guide and describes how to use the manual.
Overview -	This chapter provides an overview of the CallConnector Solution and describes the configurations for the CallConnector server.
Installation -	This chapter describes how to install and register the CallConnector Server.
Cisco UC500/CME Configuration -	This chapter provides instructions for setting up the required parameters on the Cisco CME router.
Guides, License & Maintenance -	This chapter provides an overview of the Guides, License & Maintenance tab of the CallConnector Configuration Manager.
Configuring CallConnector Servers -	This chapter provides an overview of the components of the CallConnector Server and the instructions for configuring the CallConnector Server.
Manage Users and Contacts -	This chapter describes how to setup and configure the corporate directory including the CallConnector users and external contacts.
Configure Operator Parameters -	This chapter describes the configuration for the CallConnector Operator including setting up and configuring the call queues, system speed dials and page numbers.

1.4 Related Documents

For more information about the CallConnector please visit the Cisco System site:

http://www.cisco.com/go/Smartcallconnector

1.5 Required Telephone Systems

The CallConnector supports the following Cisco Systems Smart Communications managers and telephones.

- Cisco Smart Business Communications Systems UC520, UC540 and UC560
- Cisco Integrated Service Routers (ISR 28xx, 29xx, 34xx, 39xx) running Cisco Smart Communications Manager Express versions 8.0, 8.1 and 8.3.

Note: The Cisco Smart Communications IP telephone systems are referred to as “router” or as UC500/CME-ISR in the rest of this documentation.

Please visit the Cisco Systems site for the CallConnector datasheets for the latest product compatibility list.

1.6 Supported Windows Platforms

The following Windows operating systems and application versions are supported by the CallConnector Server.

Windows 2003 Server, Windows XP SP2, Windows Vista, Windows 7, Windows 2008 Server and Windows 2008 Web Server. The Microsoft Internet Explorer version 7.0 or 8.0 is also required to be installed on the Server PC.

Please visit the Cisco Systems site for the CallConnector datasheets for the latest product compatibility list

1.7 Conventions

The following conventions are used in this guide:

Convention	Description
boldface	font Commands and keywords are in **boldface**.
italic font	Arguments for which you supply values are in *italics*.
[ ]	Elements in square brackets are optional.
{ x | y | z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	An unquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
`screen` font	Terminal sessions and information that the system displays are in `screen` font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font
italic screen font	Arguments for which you supply values are in *italic screen* font.
⟶	This pointer highlights an important line of text in an example.
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords are in angle brackets.

1.7.1 Conventions Used

The following conventions are used in this guide:

Most of the operations of the CallConnector Server applications can be initiated by using either the mouse or keyboard. The administrator guide provides the instructions for both these methods. The body of the text describes the operation in more detail.

The names of keys appear in bold capital letters: **ENTER**

Information that you type appears in small, light typeface: CallConnector

Menu commands appear in bold and are abbreviated in the text. For example the **Print** command on the **File** menu is indicated by **File-Print**. The names of buttons in dialog boxes also appear in bold.

Actions you take or procedures for you to follow are indicated by indented and bulleted steps.

1.8 Terminology

The following terms are used frequently in the manual to identify different kinds of individuals and objects.

Term	Meaning

Administrator	The person responsible for the setting up and maintaining of the CallConnector system.
Database	A database is a file that contains information in a tabular format with indexes for quick access.
Dialog	Popup window from which options are selected.
Directory	A directory is a database that usually contains names and related information.
Field	Each column of the database table is called a field.
Group	A collection of users. A group is also displayed as the department in the corporate directory.
Manager	The person responsible for a group of users.
Port	Sub-address used in setting up TCP connections.
Presence	Real-time availability status of a user. Presence status can include availability, location , telephone status and away messages.
RADIUS	Remote Authentication Dial In User Service (RADIUS) is an AAA (authentication, authorization and accounting) protocol for applications such as network access or IP mobility. Record or EntryEach row of the database table is called an entry or a record.
Router	Cisco Systems UC500 family (520, 540, 560) or the Cisco Systems Integrated Service Routers (ISR) running the Cisco Smart Communication Express (CME).
Server	CallConnector Server applications or the Windows Server PC.
Service	An application running as a Windows Service. These applications do not present a user interface.
SIP	Session Initiation Protocol – a standardized set of messages and methods for setting up communication sessions.
Users	Individuals who are authorized to use the system.
Window	An area of the screen where the application displays information.

1.8.1 Using the Mouse

The following terms are used in the manual when describing mouse-based operations:

Term	Meaning
Point	Move the mouse pointer on screen to the desired item or location.
Select	Click on the item of choice.
Click	Quickly press and release the left mouse button.
Right-Click	Quickly press and release the right mouse button.
Double-Click	Quickly press and release the left mouse button twice in succession.
Drag & Drop	Click down on item, holding down the button, move the mouse pointer to desired location, and then release the button.

1.9 Obtaining Documents

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

1.9.1 Cisco.com

You can access the most current Cisco documentation at this URL:
http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:
http://www.cisco.com

You can access international Cisco websites at this URL:
http://www.cisco.com/public/countries_languages.shtml

1.9.2 Documentation Feedback

You can send comments about technical documentation to:
bug-doc@cisco.com

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

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

We appreciate your comments.

1.10 Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

Report security vulnerabilities in Cisco products.
Obtain assistance with security incidents that involve Cisco products.
Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:
http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

1.11 Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

Emergencies—security-alert@cisco.com
Nonemergencies—psirt@cisco.com

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*. Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&ex act=on

In an emergency, you can also reach PSIRT by telephone:
• 1 877 228-7302
• 1 408 525-6532

CHAPTER

2

2 CallConnector Server Overview

This chapter provides an overview of the Cisco CallConnector solution including the Smart CallConnector Advanced Client, Smart CallConnector Operator Console, and Server components. It describes the key features, the different modes of operations. It also provides an overview of each of the graphical user interface components of the CallConnector solution.

This chapter describes the following in more detail:

Key Features -	Describes the key features of the CallConnector Server.
CallConnector Models -	The CallConnector supports a standalone, and server components. This section describes these CallConnector models Advanced Client, Operator, and Server.
CallConnector Advanced -	Provides an overview of the CallConnector Advanced Client – a windows application providing access to Smart communications from the desktop.
CallConnector Operator -	Provides an overview of the CallConnector Operator Console for the main answering positions of businesses.
CallConnector Server -	Describes the components of the CallConnector Server.
Configuration Overview-	Describes the configuration steps for of the CallConnector Server.
Getting Help -	Describes how to get CallConnector help information.

2.1 CallConnector Overview

Cisco CallConnector solution delivers a new way to handle the everyday task of communicating with others within the business or with customers and vendors. As a fully integrated communication management solution with presence-integrated directories for current availability, call control and messaging (email, IM and text), this provides greater productivity and business efficiency leveraging the PC-based data to initiate voice, messaging or collaboration sessions. Cisco CallConnector also includes toolbars embedded within the line of business application such as Microsoft Outlook and Internet Explorer to provide access to these services without having to switch to another application.

The Cisco Smart CallConnector Advanced Client offer the features:

- Simple to use toolbar within Microsoft Outlook and Internet Explorer for dialing numbers, controlling the call, and setting your availability and location status.
- Brings together all your contacts (personal, corporate, and Outlook) for QuickDialing or for starting a new email or Instant Message to the contact.
- Quick Search feature to find a contact quickly with display of all contact numbers and messaging methods plus location and availability for fellow employees without leaving your current application.
- Quick Message, an Instant Messaging Client included for short communications with fellow employees.
- Screen pop for placed and received calls with Outlook contact name allowing clickable options to take the call, send the call to voice mail or send a quick message.
- Quick Dialing from any application, including web pages, by highlighting a number, and selecting dial.
- Quick Presence conveniently displays availability, location and notes for contacts in directories and search results.
- Visual Voicemail to view and play voice messages in any order and select the greeting options.

2.2 CallConnector Product Models

Cisco Smart CallConnector is available in three configurations:

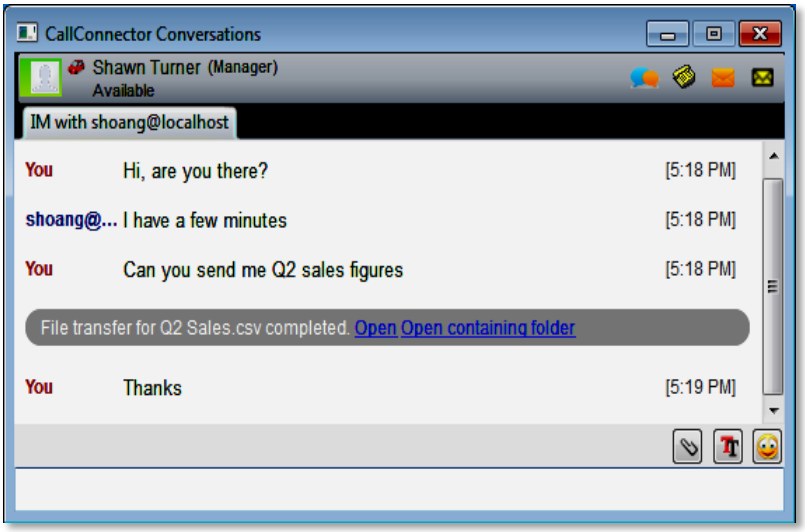
Personal Client	Delivering call control, directory and call logs for the user using Cisco's Smart Communications Manager Express. This does not require the CallConnector Server
Advanced Client	Widows application providing access rich Smart communication services
Operator Console	Provides specialized application designed for operator and receptionist positions of organizations.
Server	Server-based application giving users call control plus Presence/Instant Messaging and Rules-based Automation Services based on SIP Client-Server architecture.

2.3 CallConnector Advanced Client

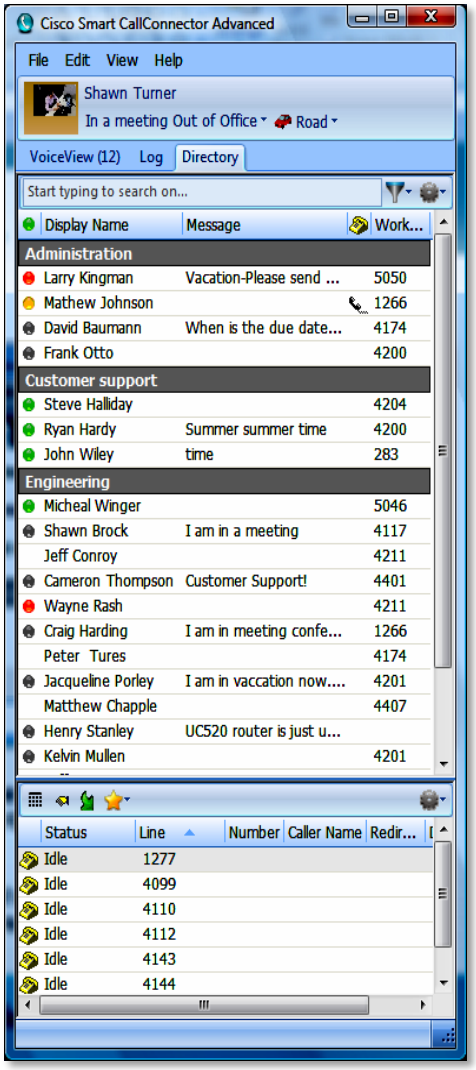
The CallConnector Advanced client is designed to streamline your business communications with real-time information on the availability of a user's colleagues and external contacts and offering multiple methods for communicating with them. The solution lets user's know who is available and the best method for connecting with them. With the CallConnector Advanced client, users can:

- Quickly locate contacts and connect to them using voice, instant messaging (IM), text (SMS), or email
- Know who is calling and click to answer or make calls and access the phone features from the PC
- Get alerts for new voice messages and when contacts are available
- View voice messages, click to listen to the important ones first, and reply or call back
- Send instant messages, SMS messages, and emails to colleagues and external contacts
- Use the CallConnector toolbar in Outlook to locate contacts, manage calls, and send instant messages
- Use the highlighter in Internet Explorer CallConnector Toolbar to dial numbers from web pages.

Cisco Smart CallConnector Advanced is a desktop Smart communications application that integrates the contact data in your PC applications with the features of the UC500/CME-ISR



Cisco Smart CallConnector Advanced Client



2.4 CallConnector Operator Console

The CallConnector Operator is a Windows application that has been specifically designed for the call, messaging and contact management requirements of the SMB operator positions. It is designed for the Cisco Communication Manager Express and is tightly integrated with most of the CME/CUE telephony and messaging facilities.

The CallConnector Operator offers these features:

Deployable as single or multiple operator positions for one or more routers/sites. (Note -multiple operator positions are server-based and require the CallConnector Server to be installed on a separate PC.)

Highly customizable graphical user interface optimized for both mouse and keyboard access to operator calls, message management and employee contact information administration.

Powerful Operator Call Handling features to allow the operator to efficiently handle large volumes of calls and accurately direct them to the most appropriate and available person. Busy/Idle status of extensions and availability of all employees can be viewed prior to extending the call. Operator can also click to dial the alternate contacts for an employee and even send the call to an available member of their group.

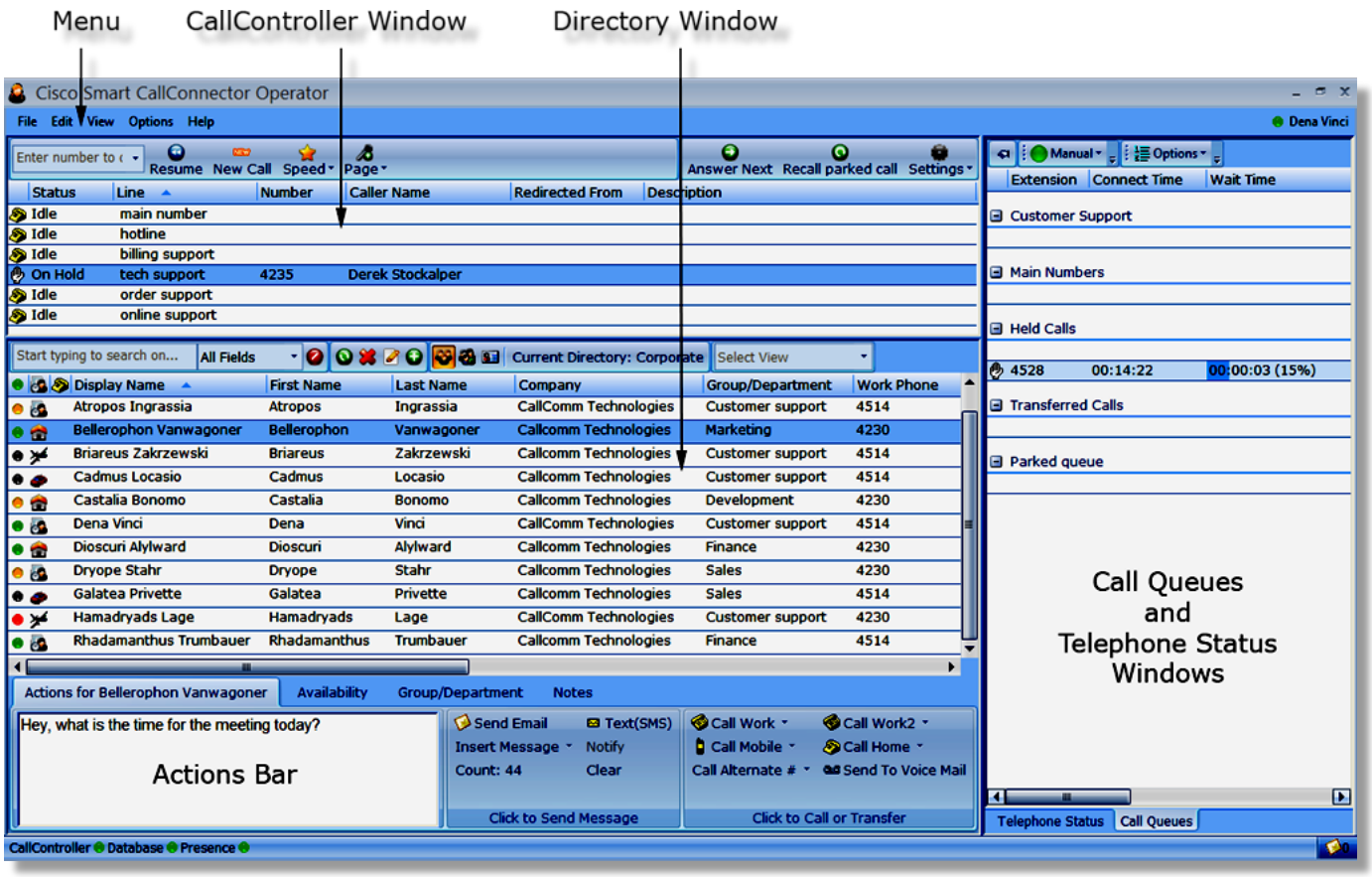
Graphical call queues display the incoming operator calls and allow for answering the highest priority call or a specific call listed in the queue. Queues also display the calls that are parked by the operator and the calls that have been extended/transferred to allow them to be monitored and pulled-back.

Presence and Telephone Status-integrated Directories that can be searched, queried and provide click-to-dial, drag-n-drop for transfer or conference and messaging options. Operator can view information in multiple directories including the organizational or employee directory, external directory with imported contacts or their Outlook contacts.

Flexible and Powerful Query Option allows the operator to enter any search text when looking for a contact. They can enter the last name or first name, the department of the contact in any order. If the search text matches the contact information in any of the fields, then those contacts are displayed. This very flexible search method allows the operators to locate the desired contact from the partial information provided by the callers.

Maintain Organizational Contacts and keep current all telephone numbers, presence/availability status and even setup the call forwards for the employee phones.

Receive Popup notifications of Incoming Calls display information on the incoming calls to the attendant.



. Figure 2-1 CallConnector Operator Console Application windows

CallConnector Operator is available in three deployable configurations:

Standalone This is a single self-contained operator position that connects the Cisco Router for telephone status information and call control.

Backup The Backup Operator position is always associated with a Standalone Operator. It connects to the Primary operator to receive the call control and configuration information.

Server-Based The Operator Client is installed at the operator position. It connects to the CallConnector Server for configuration and call control information. The server-based configuration is required or multiple operator deployments.

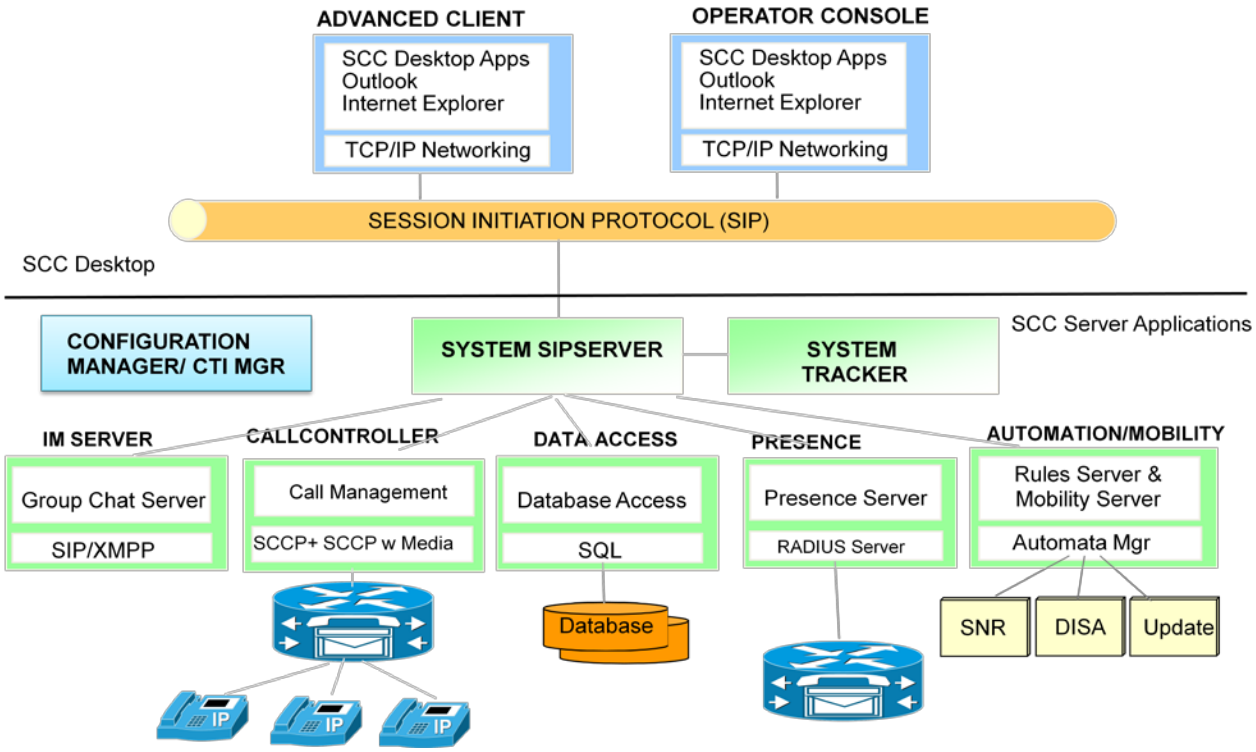
2.5 CallConnector Server

The CallConnector Server provides a set of services and acts as a gateway between the client applications and the communication resources on the router. The CallConnector Server comprises of server applications that run as services on a Windows computer system. Together these server applications provide SIP registrar, call control, data access and presence services to the CallConnector clients. The CallConnector Server application suite also includes management applications that provide graphical user interfaces to configure, run and manage the CallConnector solution.

The CallConnector Server service applications connect to the Cisco router to control calls and obtain telephone status information. The CallConnector clients connect to the CallConnector Server applications to access to the solution features. The CallConnector Server also maintains system configuration data, contact directory information and transactional history in databases on the server PC. The configuration and contact data can be imported from a number of sources including the Cisco routers, text files and from MS Exchange.

Since the CallConnector Server downloads and utilizes the configuration and user data from the Cisco routers and external databases these need to be setup before the CallConnector can be configured. The pre-requisites and the steps for the CallConnector Server configuration are discussed in the next section.

Figure 2-2 CallConnector System Diagram



2.5.1System SIP Server

The System SIP Server (ccSSS) provides CallConnector client and server applications authentication (Registrar function) and routing of the SIP messages (Re-Direct Server function).

All CallConnector clients and servers first login to the System SIP Server at startup. This is the central component that authenticates users and server applications and routes the SIP messages.

A failure of the System SIP Server will affect CallConnector system in the following ways:

1. All CallConnector clients and Server applications starting up will fail and provide ‘unable to connect’ with SIP Server error message.

2. Existing connections will continue to be in place until the subscriptions or registrations timeout and need to be renewed. These attempts will fail.

3. The Service Management indicates System SIP Server is stopped.
All CallConnector Server applications should be restarted upon SIP Server

2.5.2System Tracker Server

The System Tracker supports the automated recovery of the connections in the event of failures.

A failure of the System Tracker applications will affect CallConnector system in the following ways:

1. CallConnector clients starting up will not be able to receive the CallConnector Server status to allow them to continue.

2. The CallConnector client user interfaces will be grayed out; as the clients will assume that all the Server applications are down.

3. Established sessions (clients) will not know; will not get CallConnector Server failure notifications.

4. Subscription timeouts causing re-subscribe will fail.

5. When the System Tracker returns; all subscriptions will need to be re-established.

6. To recover stop and restart System Tracker.

2.5.3Database Server

The CallConnector Database Server provides access to the configuration, contact and transactional data to all the CallConnector servers and clients.

The Database Server provides gateway functions between SIP messages and the SQL database command. SIP User Agents such as CallConnector clients’ access configuration, contact and transaction data from standard SQL databases by sending SIP messages to the Database Server. The Database Server supports the SIP Message methods. When it receives a database request, it fulfills the request from the attached SQL database and returns the data/response to the requestor.

Database Server supports synchronization feature; allowing add/delete/updates to be kept current.

If the Database Server fails, then:

1. User cannot log-in– cannot be authenticated.

2. Call Logs lost for the down-time.

3. If Database Tables corrupted; then database has to be restored from customer backup of CallConnector Server.

There are two aspects to the configuration – setting up the communication parameters to handle the SIP messages and setting up the access to the database system.

1. The Database Server uses Microsoft ADO objects to connect to the Access compatible database files stored in the Data folder under Smart CallConnector Server.

2. Windows Data Source tools in the Control Panel Administrative Tools-> ODBC Drivers provides interface to administer and verify settings.

3. The Database Server connects to three databases – UCCDatabase database that contains the provisioning information, Corporate database that contains the corporate directory data and the CallLog database that stores the transaction data for example call logs.

4. The databases should be regularly backed up and in the event of corruption or other problems that latest configurations can be restored from the backups.

2.5.4Call Controller Server

The CallController Server connects to the Cisco router to control the user's IP phones. To setup the CallController, you need to configure the following information:

1. Specify the SIP communication parameters for the CallController Server in the Server Options page.

2. Obtain a list of the IP phones that are present on the Communication Cisco Smart CME router. This can be done by using the Manage Cisco Routers (CME) page.

3. Specify or select the IP Phones that are to be controlled by the CallController Server. You should select only the phones that will be accessed and controlled by the Smart CallController users. See Configure CME Routers.

4. Verify that the selected phones can be accessed and controlled by the CallController Server.

2.5.5Instant Message Server

The Instant Message Server supports the internal group chat service of the CallConnector. It also stores and distributes the avatar images to all the CallConnector Advanced clients. There is no setup required.

If the IM Server fails, then:

1. User setup internal group chat sessions with multiple users.

2. Avatar images that are updated by the users are not propagated to the other CallConnector users.

2.5.6 Presence Server

The CallConnector Presence Server reads in the user configuration data and the corporate directory information and maintains the user's presence and telephone status information. The Presence Server incorporates a Radius Accounting Server functionality to receive the telephone status updates from the Cisco Router. The user presence information and telephone status is published to all authorized clients in real-time.

2.5.6.1 Presence Configuration Notes

1. The Presence Server publishes the list of contacts in the corporate directory database grouped by their departments. It also manages and publishes the presence status (availability and location) and the telephone status of these users in real-time.

2. Contacts in the Corporate directory can be CallConnector users and non-users contacts. A CallConnector user has a user login account created via the Configuration Manager Directory – User page. Presence status is published for both types of contacts.

3. For non-CallConnector users, this provides a bulletin-board type function. The status of such users can be updated by the manager of that user's group or by users with administrative rights.

4. Only the CallConnector users can update their own status; administrators or managers can change the status of the contacts in the status window.

5. Telephone status is <u>only published</u> if there is a match on the caller or called number with one of the user's work, work-2, home or mobile numbers in the CallConnector Corporate directory.

6. For the telephone numbers to match, the caller/called number and the numbers in the database must be in the same format – preferably in the canonical format. This requires the server dial plan to be correctly setup.

7. Call logs are only written for the CallConnector users. The call log entries include the caller/called name if there is a match in the Corporate directory. Names in the user's Outlook contacts are not included in the call logs.

8. Presence Access control can only be applied to the Groups/Departments defined through the Configuration Manager Directory – Group page. This allows the administrator to control which users can view the availability status of users in other groups.

9. The department field in the Corporate directory can contain department names that are not in the 'Group' list.

10. The status of the users in 'departments' that are not in the Group list are visible to all the CallConnector users.

The Presence Server filters out telephone status messages from telephone numbers that are not in the CallConnector Corporate Directory. Even though you might see the Radius events for a phone number, the telephone status may not display in the Status window. Therefore to receive telephone status events, the following must be properly configured:

1. Router must be configured to send Radius messages to the CallConnector Server.

2. CallConnector Server must receive the Radius messages.

3. The telephone numbers (caller or called) must be in the Corporate Directory.

4. The CallConnector Server Dial plan must be properly setup so that the numbers as provided in the Radius messages can be formatted for lookup. This means that after lookup formatting the incoming number will be identical to the 'canonically' formatted number in the directory.

5. The telephone numbers in the CallConnector directory is saved in the 'canonical' format e.g. (408) 555-1212. The telephone numbers in the Radius message are not formatted. The Presence Server uses the CallConnector Server dialing rules to convert the Radius provided telephone numbers to the canonical format and then searches the Corporate Directory for a match. You will need to verify that the dial plan is correctly configured on the server so that the numbers sent in the Radius messages (as displayed in the Radius Monitor Log) are being formatted to allow successful searching.

If the Presence Server fails, then:

1. Status windows in the CallConnector Clients are grayed out.

2. Users cannot change their presence status.

3. Users Presence Status will not be current.

4. Call Logs are not written and are lost for the duration that the Presence Server is down.

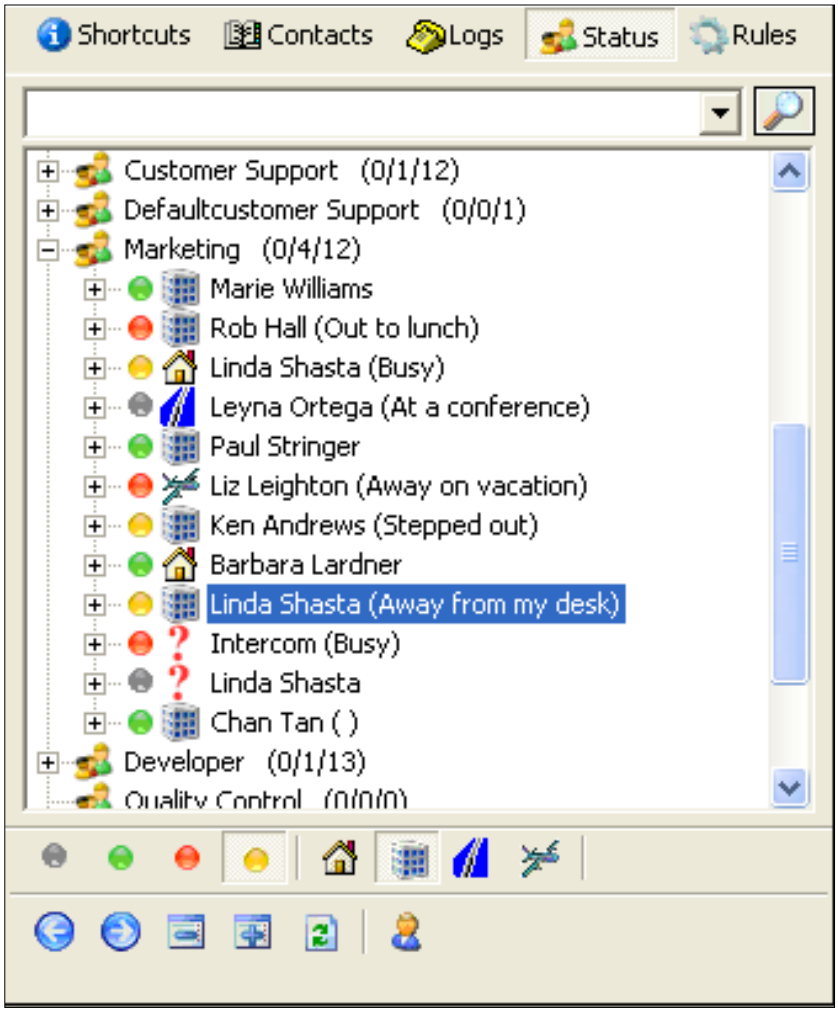
5. Other CallConnector servers are un-affected.

2.5.6.2 Monitoring Presence Status

The CallConnector Presence Service collects information about a user's availability and location, including whether or not they are using their telephone at a particular time. This information is made available to the CallConnector users from within their everyday business applications such as Internet Explorer or Outlook. The presence information is also displayed when you use the CallConnector QuickSearch to locate contacts. Using this real-time presence information, users can connect with colleagues more efficiently through determining the most effective method for communicating with them at that time thus avoiding phone or message tag.

The CallConnector Status window provides a real-time view of the entire organization with information on the availability of users and groups, location of people and whether they are on call. Users can manage their own presence status, make calls and send instant messages from this window.

Figure 2-3 Presence Status



2.5.6.3 Updating Availability

The CallConnector maintains three components of a user's presence information: Availability – this is the user's current Busy, Available, Away and Unavailable status; Location – the place where the user is situated and the Away Message – providing additional notes on their availability. In the server configuration, this information is broadcast to the CallConnector subscribers.

Availability Icon	Description	Location Icon	Description
	Available		At Work
	Busy		Currently at Home
	Away		On the Road
	Unavailable		Away on Vacation
	Don't show my status		Location undefined

Table 2-1 Availability Status

2.5.6.4 Sending Instant Messages

Instant messaging in the workplace can allow you to quickly resolve a question or communicate without interrupting the work flow. With the CallConnector Server, users can send Instant Messages and Text (SMS) messages to their colleagues.

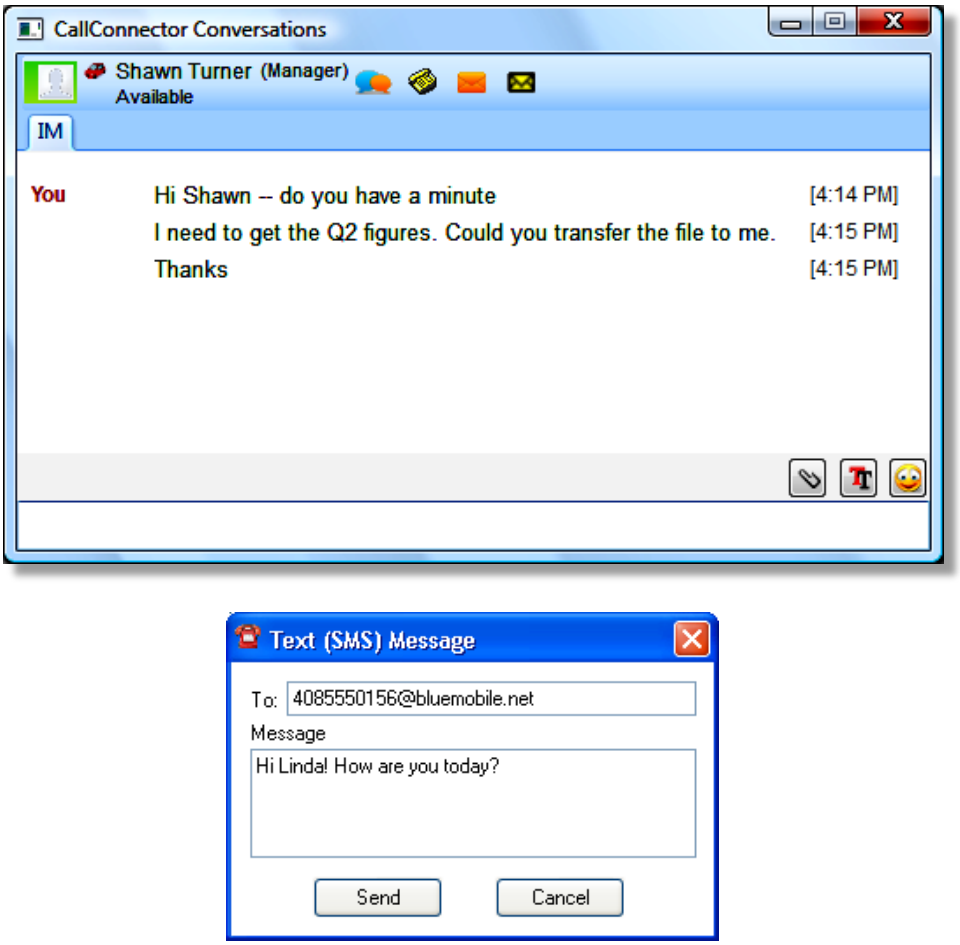


Figure 2-4 Instant Message and Text (SMS) Message Windows

2.6 CallConnector Server Configuration Overview

The CallConnector Server requires a number of parameters to be configured on the Cisco Router and Cisco Smart CUE. These features have to be first provisioned on the Router and CUE and then the corresponding parameters have to be configured on the CallConnector system. This section provides an overview of the CME and CUE setup requirements.

2.6.1Cisco Router Setup for CallConnector Server

1. Settings on Cisco Router required to support CallConnector Server include:
2. Setting up the Telnet and HTTP server to allow the CallConnector to download the router configuration information.
3. Provisioning the user's ephones on CME to allow 'TAPI' connections.
4. Setting up Radius accounting parameters to send messages to CallConnector Server. This can be executed from the CallConnector Configuration Manager.

5. Setting the Router Dial Plan to allow extension and PSTN Dialing

Notes for connecting multiple CME/CUE to one CallConnector Server

1. Network connection between routers and CallConnector Server needs to support UDP transport and TCP connections.
2. Set up Radius accounting parameters with the same port and password across all routers.
3. Provision ephone user names to be unique across all routers.

2.6.2 Steps to Configure CallConnector Server

1. After the Cisco router has been configured, the following need to be configured on the CallConnector Server using the Configuration Manager utility.
2. Download the ephone configuration from router and select the ephones that will be controlled by the CallConnector Server. Verify that the ephones can be accessed from Server.
3. Configure the Radius port and password. Verify that you can receive the radius messages.
4. Configure Cisco router location and dialing rules. Setup any exception dialing translations if needed. Verify digit translations.
5. Add the Group Names – these are the departments that the users are grouped under. Setup the publishing and restrictions rights.
6. Configure the users with their contact details.
7. Associate the user with their ephone.

CHAPTER

3

3 Installing Server Software

This chapter describes the steps for downloading and installing the CallConnector Server software. The following topics are discussed:

Installation Overview -	Provides an overview of the CallConnector Server installation process.
Pre-requisites for Installation -	Describes the information you need to have on hand during the installation of CallConnector Server.
System Requirements -	Describes the minimum requirements for the server computer for different user configurations.
Download Site -	Site from which the CallConnector software can be downloaded.
Installing the CallConnector Server -	Describes the steps and options for installing CallConnector Server components.
Registering the Software -	The CallConnector software has to be registered before it can be used. This describes the options presented to you during this process.
Performing an Upgrading -	Describes the steps for upgrading an existing CallConnector with a new install program.
Removing the CallConnector Server -	This section describes the steps for removing and un-installing the CallConnector Server and all its components.

3.1 CallConnector Server Installation

The CallConnector Server software is installed on a Windows computer to provide shared access to call control, contact data and presence status for the CallConnector users. The server installation program checks your system configuration, copies the software to the hard disk and makes the required configuration settings for you. This installation program can be downloaded from the Cisco site and run as described in the sections below.

The installation of the CallConnector Server software involves the following steps:

Collecting the information required for obtaining and configuring the CallConnector. This includes obtaining access to the download site or the installation program and the information that you will require during the installation process. See the Pre-requisites for Installation section below for these parameters.

Preparing a Windows computer system on which you will install the CallConnector server software. This computer must be configured with a static IP address which is on the same network with the Cisco CME router. See Minimum System Requirements for the CallConnector Server in the sections below.

Configuring the Cisco Router parameters including the Telnet Access, IP Phones and Ephone DN, Hunt Groups and Park Numbers. You will need the user name and password for a telnet account to the Cisco Router for downloading the phone configurations.

Acquiring the CallConnector Server installation program. This can be downloaded from the Cisco Software Download Site or obtained from your Cisco channel partner.

Logging into the Windows server computer with an administrative or power user account. This is required to register and run the server software.

Running the CallConnector Server installation on the computer, and entering the configuration information requested by the installation wizard.

Registering your CallConnector Server with the Cisco Activation server. This will require access to the Internet.

Setting up the CallConnector Server configuration parameters from the Configuration Manager. Start the CallConnector Server software and verifying that the services start up and run.

Verifying that the users are able to log in and access the CallConnector services.

This chapter describes the steps for installing and activating the CallConnector Server software. The next two chapters cover the configuration and setup of the CallConnector Server and the required settings on the Cisco router.

3.1.1Pre-Requisites for Server Installation

As a part of the installation of the CallConnector Server, you need to have certain network connectivity and configuration information. These are summarized in the table below and described in the following paragraphs.

Item	Description	Source
Access to Download Site or Installation Software	Download or otherwise obtain the CallConnector installation program	Service Provider or Sys-Admin
CallConnector Server PAK-ID and Advanced client PAKID for additional clients	Licensed version of the CallConnector Server requires a PAK-ID or serial number. You can get started with an evaluation version if you do not have a PAK-ID.	Service Provider or Sys-Admin
Admin or Power User Name and Password	Login access to the Windows PC on which the CallConnector Server software installation to be run.	Sys-Admin
Internet Access	Internet access is required for registering the CallConnector Server. This can be a direct access or through a Proxy server.	Sys-Admin

Table 3-1 Pre-requisite information for installing the CallConnector Server

Access to Download Site: The installation files can be downloaded from the Cisco software download site. You can also obtain a copy of the installation files from the Cisco solution partner.

CallConnector Server PAK-ID: The CallConnector Server software requires a Product Authorization Key (PAK-ID) or a serial number to operate. This PAK-ID is provided to you when you purchase the software. There is an evaluation option for a limited time period (45 days) during the installation process.

Admin or Power User Account of Installation PC: The installation program requires access to Windows registry and installation of services. These changes can only be performed with an account with admin or power user rights to the Window's computer.

Internet Access: The CallConnector Server software has to be registered to the CallConnector License Server via an activation process. This requires access to the Internet. The Internet access can be through a Proxy Server. In this case the Internet Explorer on the PC should have the proxy settings defined.

3.1.2Windows Access Rights:

During the installation of the CallConnector, you need to have local admin rights to the personal computer. This is to allow various system files to be loaded and Windows registry entries to be written.

Note: If you are not logged in to the PC with the required access rights, the installation may fail or not run through completion.

3.2 Minimum System Requirements

Your system must meet the minimum system requirements described in this section. We recommend that your system exceed the minimum when possible to ensure better performance.

3.2.1 Computer and Windows OS

The table specifies the minimum computer requirements for three different size systems. The system requirements vary depending on the number of users logged on to the CallConnector Server. The number of users here refers to the number of concurrently logged on CallConnector clients.

These are minimum requirements and deal with only the CallConnector Server requirements. If the computer is running other application or services, those requirements should be added to these specifications.

	25 User System	75 User System	250 User System
Processor	2.66 Ghz or faster multi-core processer	2.66 Ghz or faster quad-core processer	Dedicated Quad Core 3Ghz or faster
Memory (RAM)	2 Gbyte RAM available for CallConnector Server	4 Gbyte RAM available for CallConnector Server	8Gbyte RAM available for CallConnector Server
Operating System	Microsoft Windows XP Service Pack 2, Windows 7 or Windows 2003 Server	Microsoft Windows 2003 or Windows 2008 Server	Microsoft Windows 2003 or Windows 2008 Server
Disk Space	1 Gbyte available for CallConnector Server	4 Gbyte available for CallConnector Server	8 Gbyte available for CallConnector Server

Table 3-2 Recommended minimum computer system for the CallConnector Server

Note: Available memory in the computer can be determined by opening the Windows Task Manager to the performance tab and viewing the used and available before running the CallConnector Server.

3.2.2 Application Software

CallConnector Server uses the settings of Internet Explorer for navigating through proxies servers. If you are using a Proxy server to access the Internet, first verify the connection using the IE browser.

Internet Explorer Version 6.0 with Service Pack 2, Internet Explorer 7.0

3.2.3Telephone System

3.2.3.1 Communication Systems

The CallConnector Server provides shared access to telephony service to the CallConnector clients. The CallConnector Server supports the following Cisco Systems communication systems. For a more current list, see the data sheets on http://www.cisco.com/go/Smartcallconnector/

Cisco Communications Manager Express 8.0, 8.1 and 8.5.

Cisco Smart Communication 500 Series 8.0

3.2.3.2 Connecting to multiple Communication Systems:

The CallConnector Server can be connected to multiple Cisco Communications Manager systems. The number of systems that can be connected is dependent on the network connecting the systems, the number of users in each system and the capacity of the computer system hosting the CallConnector Server. Please consult with your Cisco System Engineering resource or channel partner for your specific configuration needs.

3.2.3.3 IP Phones:

The CallConnector Server can connect to and control the following Cisco IP Phones:

7970, 7971

7960, 7961

7940, 7941

7920, 7921

IP Communicator Softphone

52x phones

Please see CallConnector datasheet for the latest product compatibility information.

3.2.4LAN Access and Ports

The Local Area Network is used in multi-user environments to share the directory data and to access services such as E-mail and the Telephony Service. Access to the Internet is also required for the activation process.

The following network connections are made between the applications running on the CallConnector Server and the CallConnector clients and the Communication Systems:

Connections	Type	Server Ports (Default)
Communication Servers – SCCP	TCP	Available TCP ports
Communication Server – RADIUS	UDP	1646
Communication Server – Telnet	TCP	23
CallConnector Server Application	UDP + TCP	5060, 39984, 5061, 5062, 5063, 5071, 5072-5077
CallConnector Clients Receive Port	TCP	5065
Configuration Manager (to verify activation)	TCP	80
Email (SMTP Server)	TCP	25

Table 3-3 TCP/UDP Ports used by the CallConnector Server

3.3 Download Site

The Cisco CallConnector can be downloaded and installed from the Web. Go to the link below, select the CallConnector for Microsoft Office, and download the installation files.

www.cisco.com/go/Smartcallconnector and click on the Download Software link.

Note: A valid CCO User ID and Support Contract are required to access the software download center. If you don't have access, contact your Cisco reseller.

3.4 The Installation Package

Before installing the CallConnector, carefully check your package contents.

Your package should contain the following items:

CallConnector Server Installation Program.
Quick Start Guide

3.5 Installing the CallConnector Server

During the installation process, the CallConnector Server install program will check your system's components and determine what files need to be upgraded. It will copy program files to an installation folder of your choice and system files to the Windows System directory.

The installation program also sets up the CallConnector Server applications to run as Windows Services.

3.5.1 Step 1: Download the Server Installation Program

Log in to the Cisco Software Download site for the CallConnector and download the latest CallConnector Server installation program. You can also obtain this from your Cisco Channel Partner.

3.5.2 Step 2: Run the CallConnector Server Installation

Login to Windows under Admin account: The installation program writes to the Windows registry and requires access rights available under the administrative account.

Close all Windows Applications: Close all open applications. Disable the screen-saver if the PC has one enabled. If you have un-installed a previous version of the CallConnector software then it is recommended that the PC be rebooted before the new installation.

Verify that you have Internet Access: The license registration process at the end on the installation requires Internet access. Open the Internet Explorer and verify that Internet is accessible.

Verify that you configure a static IP address on the server machine and the server machine have access to the Cisco CME router: The CallConnector Server requires access to the Cisco CME router in order to communicate with the IP phones and download phone configuration information. Ping to the Cisco CME router to make sure data is sent and received.

To Install CallConnector Server: Launch the CallConnector Server installation program by double-clicking on it.

3.5.3Required Software Components

When the installation program is loaded, it checks the configuration of your server machine to make sure that the required software items to run the CallConnector Server Installation are present. If there are any missing items, the installer will ask for your confirmation to install them.

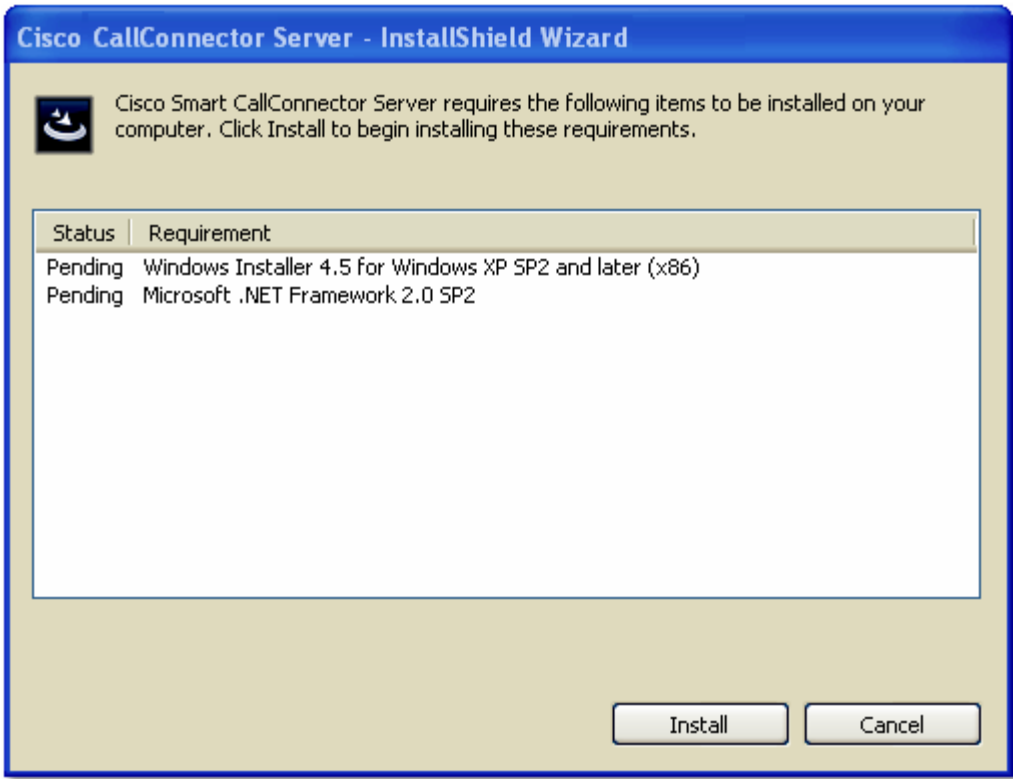


Figure 3-1 Pre-requisite Software Items Installation

Click on Install to install the required software components. The installer will start the installation process and may ask you to restart the server machine. It is recommended that you restart the computer to continue with the installation process.

3.5.4Start the Installation

Once all the required software items have been installed and the server machine has been restarted, the installer will present the Welcome dialog.

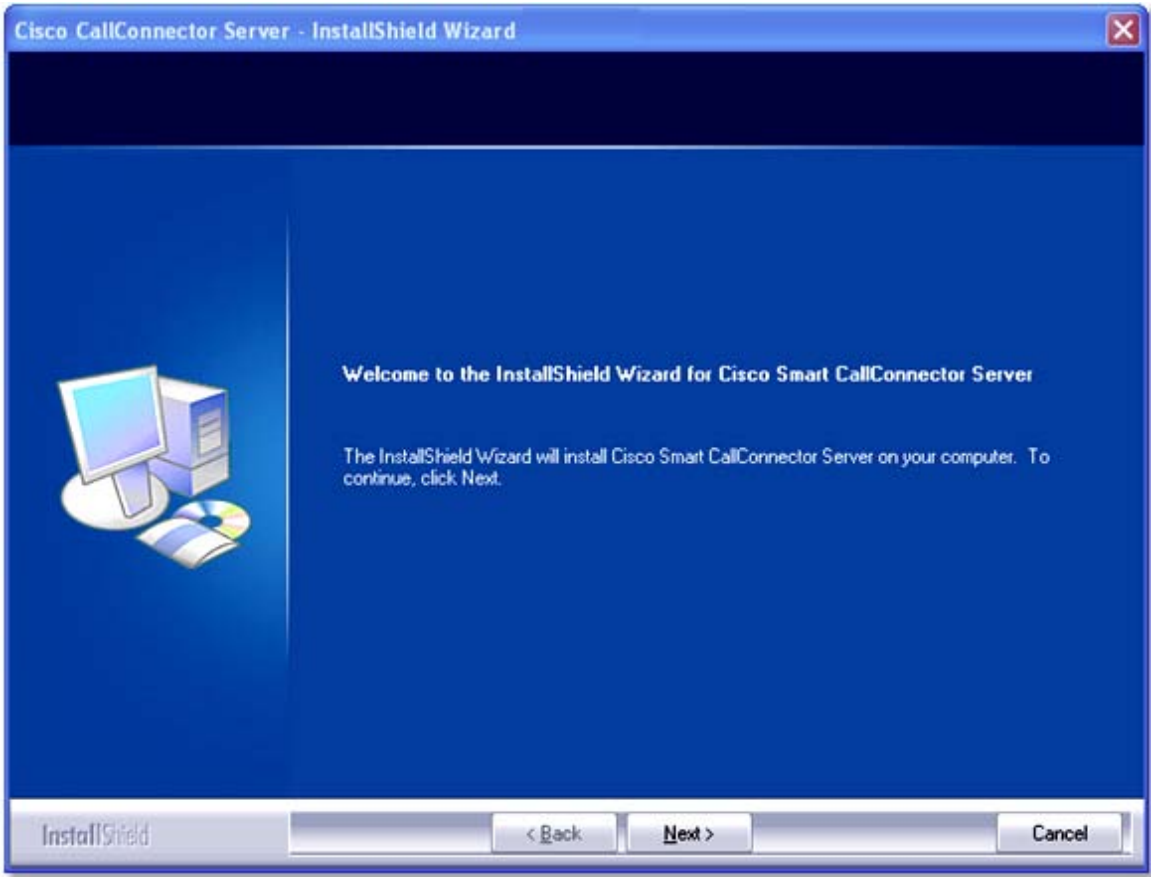


Figure 3-2 Welcome Dialog

Click on **Next** to display the Software License Agreement statement.

3.5.5 Software License Agreement

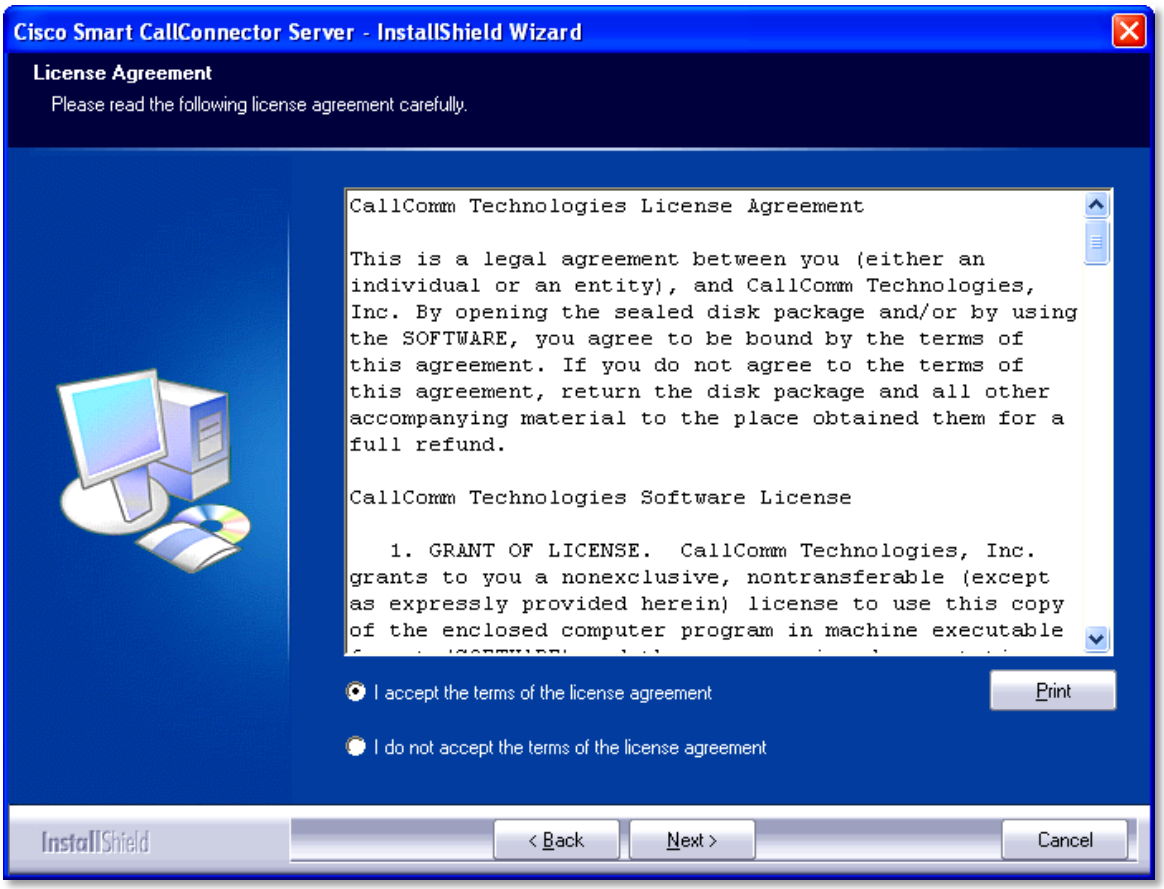


Figure 3-3 Software License Agreement

Please read the Software License Agreement statement and click on **I accept the terms of the license agreement** or press **Alt + A** to accept the license and **Next** button for the Customer Information window.

3.5.6 Customer Information

Enter your contact information in the following fields:

User Name: The name of the person under which the software will be registered.

Company Name: The name of registering company or organization.

Email: The email address of the registering person. The email address and the PAK-ID (or serial number) will be required if you need support related to the license activation.

Display Language: The Configuration Manager interface can be presented in one of several languages. You can select your preferred display language from the pull-down list.

Technical Support Email: If no email address is specified, the report problem email will be sent to the Cisco Support Alias. This alternate email address of this customer's technical support will override the default settings and be used by the Configuration Manager to send problem report emails.

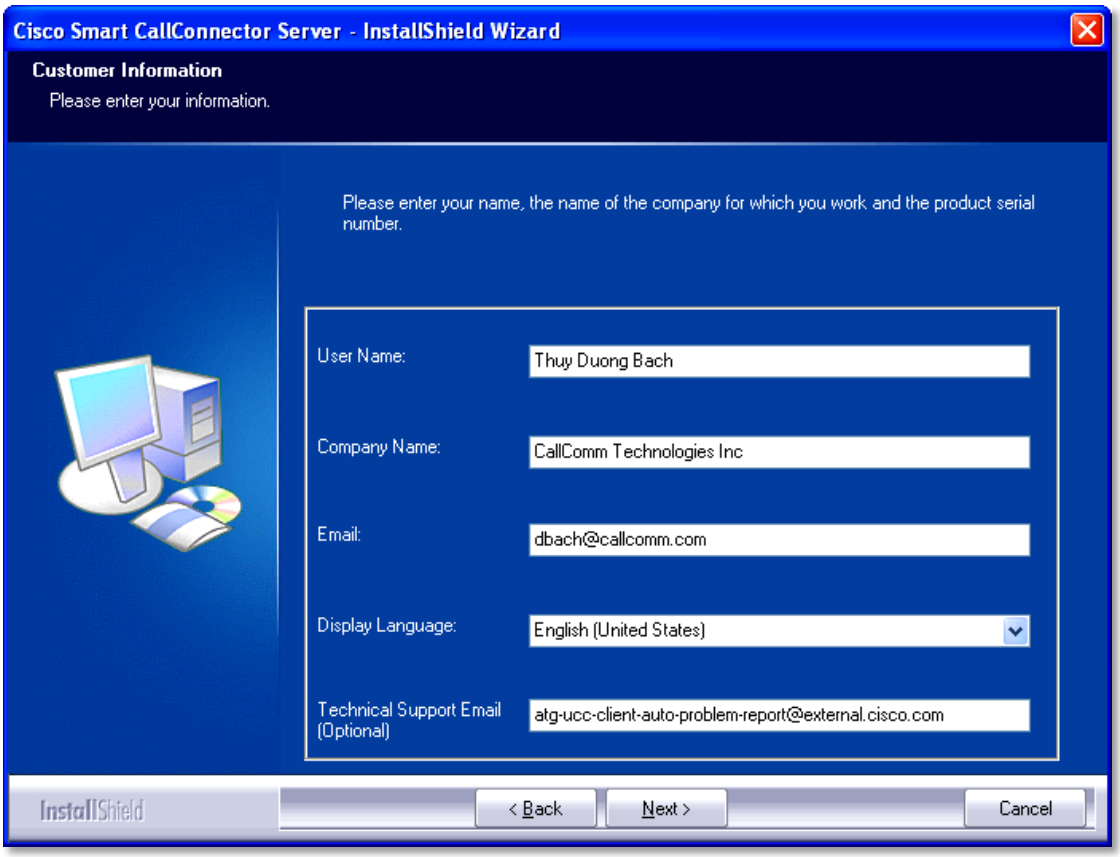


Figure 3-4 Customer Information

3.5.6.1 To proceed:

Enter your name, company and e-mail address and select the display language. Note the email address is a mandatory field and will be required during the license registration process.

The Display Languages include English, French, German, Italian, Danish, Dutch, Finnish, Portuguese, Spanish and Swedish. Please see CallConnector Wiki site for latest language files.

Click **Next** or press the **ENTER** key.

3.5.7 Network Options

The CallConnector Server needs to connect to the Cisco router to retrieve IP phone configuration information. In order to do that, the installer needs to know the IP addresses of the server machine and the Cisco router. The following information is required:

Local PC IP Address: The Server PC may have more than one network adapter card connected to different networks, administrators need to select which network card (by specifying the card IP address) should be used by a CallConnector Server application. The chosen network card must be in the same network with the Cisco router.

UC500/CME-ISR IP Address: The CallConnector Server needs to connect to the Cisco UC500/CME-ISR to get call information. Specify the IP address of the Cisco UC500 (or CME-ISR) to be used with the CallConnector system.

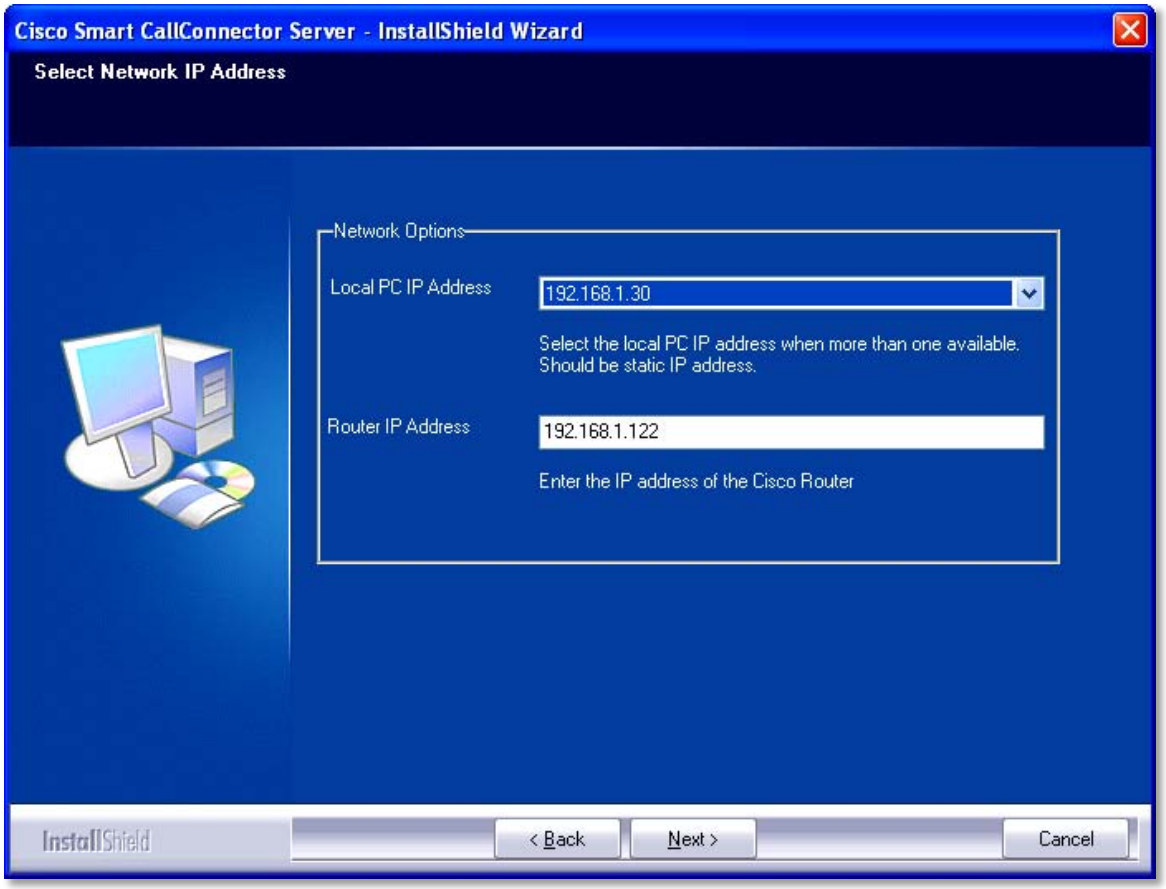


Figure 3-5 Network IP Address Options

3.5.7.1 To proceed:

Select the network adapter IP address and the Cisco Router IP address.

Click **Next** or press the **ENTER** key.

3.5.8 Location and Dialing Information

The CallConnector Server needs the following information to make outgoing calls:

Country: Select the country in which the router is located, more specifically this is the country associated with the PSTN network the router is connected to.

Area Code: The telephone area code of the location. If area code is not required then leave this field blank.

Number Format: This is the canonical format of the PSTN telephone number for the above country and area code. This will generally be populated automatically.

Dial Out Prefix: Digits that have to be appended to the PSTN number, but excluding the long distance code, to make an external call.

Extension Length: Number of digits in the internal extension. If there are several number plans of different extension lengths, then enter all these number lengths separated by commas.

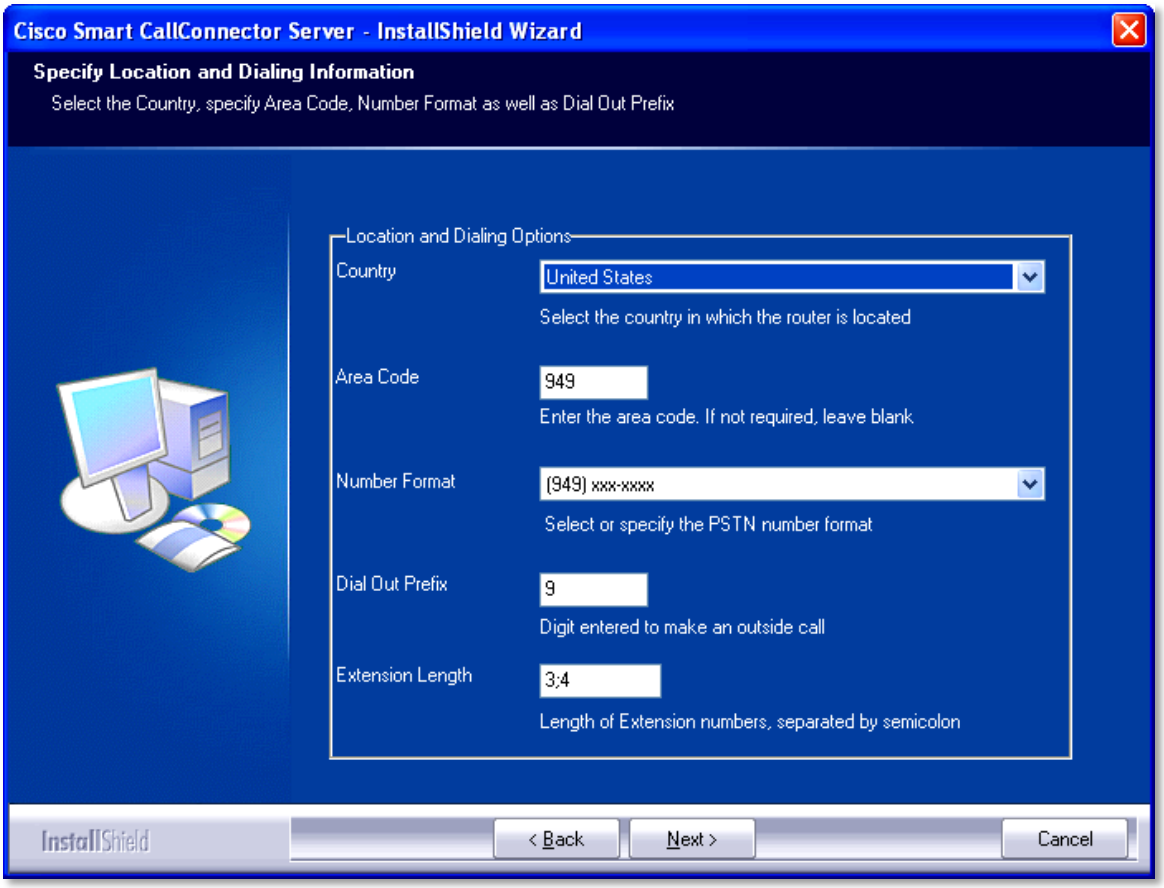


Figure 3-6 CallConnector Operator Options

3.5.8.1 To proceed:

Select the location where the router resides including country, area code and displayable phone number pattern, the dial out prefix and extension length.

Click **Next** or press the **ENTER** key.

3.5.9 Program Files Location

The next window allows you to specify the location to which the CallConnector program files will be copied. Click on the Browse button to select a folder other than the default.

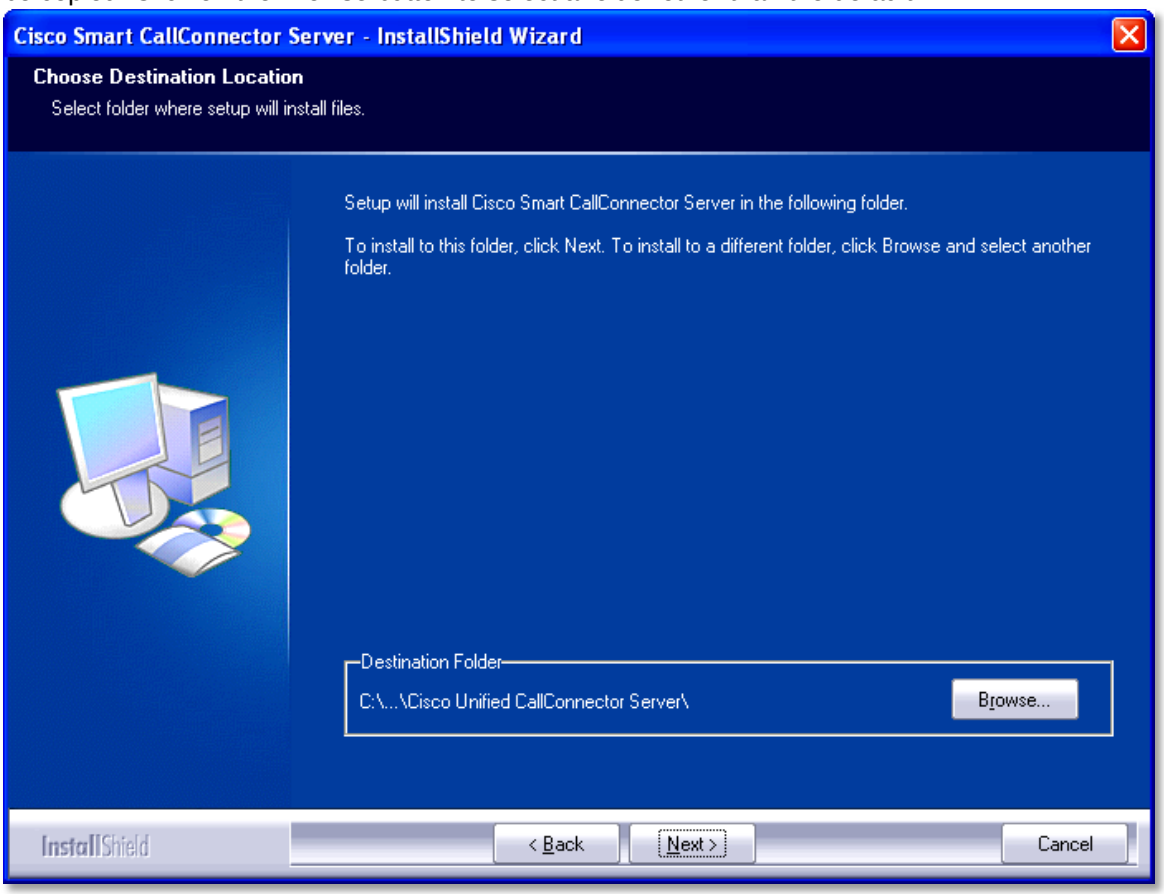


Figure 3-7 CallConnector Program Files Location

3.5.9.1 To proceed with the installation:

Choose the default program path or click on the **Browse** button and specify the desired path.

Click on **Next** to proceed with the installation.

The installation will copy the program and system files and update the registry and XML configuration file settings.

3.6 Activating the CallConnector Server

After the installation program finishes copying files and updating the registry, you will have to activate the CallConnector software in order to access to its features. There are several licensing options:

Use PAK-ID for automatic licensing (online method): When you purchase the CallConnector licenses, you will be provided with the Product Authorization Key (PAK-ID) or a Serial Number. You can use the PAK-ID to activate during the installation or using the Configuration Manager.

Note: If you are installing the CallConnector Server on a Virtual Machine operating system, then the license activation has to be performed from the Configuration Manager application.

Use License File to activate (offline): If you do not have access to the Internet in the server PC, you can request the License File from the Cisco Registration Site. The license file will be mailed to you, and you can then use it to activate either during the installation (applicable to installation on physical server PC only) or using the Configuration Manager. This option is not supported for Windows x64-bit environments.

Evaluate CallConnector Server for a limited time period (45 days): Use this option if you have not purchased the CallConnector Server or do not have the Product Authorization Key (PAK-ID) or a Serial Number. This option will enable the CallConnector Server for a period of 45 days. At the end of this time, you will need to register with a valid PAK-ID.

Notes on the Licensing Options:

1. If you install the CallConnector Server on a physical server PC, you will have an option to activate the CallConnector Server during the installation process. You can skip this step and activate the software when you log into the Configuration Manager. Please refer to Chapter 5: Guides, License and Maintenance for information on how to activate using the Configuration Manager.
2. If you decide the skip the activation during the installation, you still have to indicate if you want to use the trial or the full version when being asked to select the license mode. If you select the PAK-ID option, you will not be able to activate the trial mode after the installation.
3. If you install the CallConnector Server on a virtual machine, you will have to log into Configuration Manager after the installation in order to activate either the trial or the full version of the software. No activation option during the installation is provided. Please refer to Chapter 5: Guides, License and Maintenance for information on how to activate using the Configuration Manager.
4. If you decide to activate the software using the online method (i.e. without using the license file), the following apply:
    a. Both "Use PAK-ID or Serial Number" and "Evaluate the CallConnector Server for 45 days" options require Internet connection from the Server PC in order to validate the registered licenses against the CallConnector License Server.
    b. Internet Explorer needs to be installed on the Server PC.
    c. The registration service uses HTTP methods to send your PAK-ID and machine information to the CallConnector License Server. It supports some

HTTP Proxies and requires the Internet Explorer to be configured for such proxy support. Proxies requiring manual password entry are not supported.

5. Trial mode can only be run once on one machine for the duration of 45 days. If you have tried the CallConnector Server on this PC for previous version of the software, then the trial request will be rejected.
6. During the ‘Trial’ period, Internet connection is required to allow for the daily verification of the license.
7. Enable all network adapters that will be used on the Server PC during normal operation of the CallConnector Server applications. You should disable the network adapters that are not in use.
8. The automatic registration is a two-step process. When the PAK-ID is registered, the CallConnector License Server returns a trial serial number. This can be used to immediately start using the CallConnector Server applications (if the previous trial has not expired). The server applications automatically check for the PAK-ID registration to be authorized. In this case an authorization serial number is returned by the CallConnector License Server. This replaces the trial serial number.
9. When the PAK-ID is authorized and the CallConnector Server applications have a valid authorizing Serial Number, then the daily on-line checking is turned off.
10. In the event the Server PC does not have Internet access, or there are some issues are encountered with the automatic registration process, an alternate registration method can be accessed using the Advanced Options button. This method requires a PAK-ID and will be described below.

3.6.1Select License Mode

After the files have been copied, if you install the CallConnector Server on the physical Server PC, you will be provided with the licensing options for the CallConnector software.

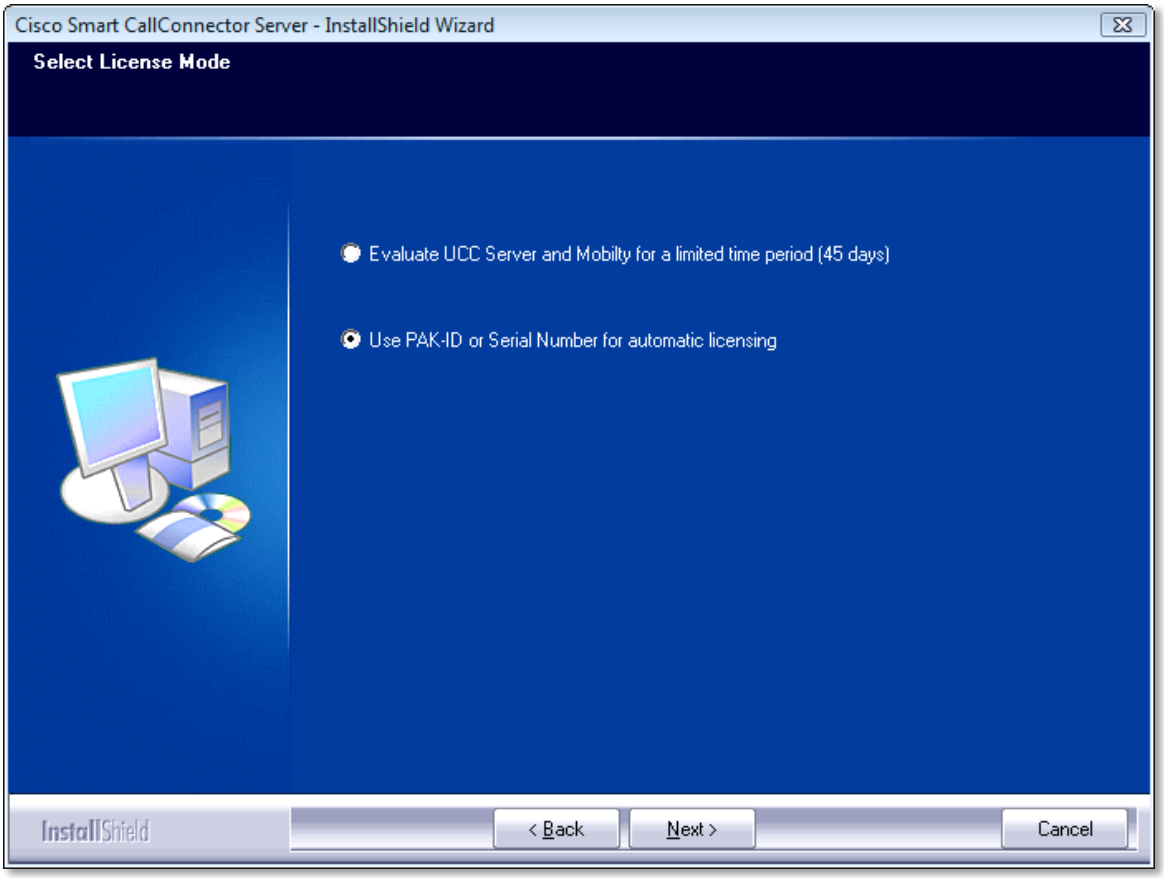


Figure 3-8 CallConnector Licensing Options

3.6.1.1 Select one of the Licensing Options:

Evaluate CallConnector Server for a limited time period (45 days): Use this option if you have not purchased the CallConnector Server or do not have the Product Authorization Key (PAK-ID) or a Serial Number. This option will enable to the CallConnector Server for a period of 45 days. At the end of this time, you will need to register with a valid PAK-ID.

Use PAK-ID or Serial Number for automatic licensing: This option is used to register your CallConnector Server license. If you have a PAK-ID or Serial Number for the software then select this option.

Click on **Next** to proceed with the installation.

3.6.2Register CallConnector Server

If you select "Use PAK-ID or Serial Number for automatic licensing" option in the previous screen, you will have an opportunity to enter the licensing information and activate the full license in the next screen. The following information is required:

1. **PAK-ID or Serial number**: This Product Authorization Key is shipped to you with your purchase of the CallConnector software. In some cases, you may have a Serial Number. This can be of the format UCCS-0100-xxxxxxxxxx. A valid serial number for the CallConnector Server can also be entered as a part of the registration.

2. **Name**: The name of the person who purchased the licenses.

3. **Company**: The registering organization of the software.

4. **Email**: The email address of the registering person. It is used to locate your license record for support purposes.

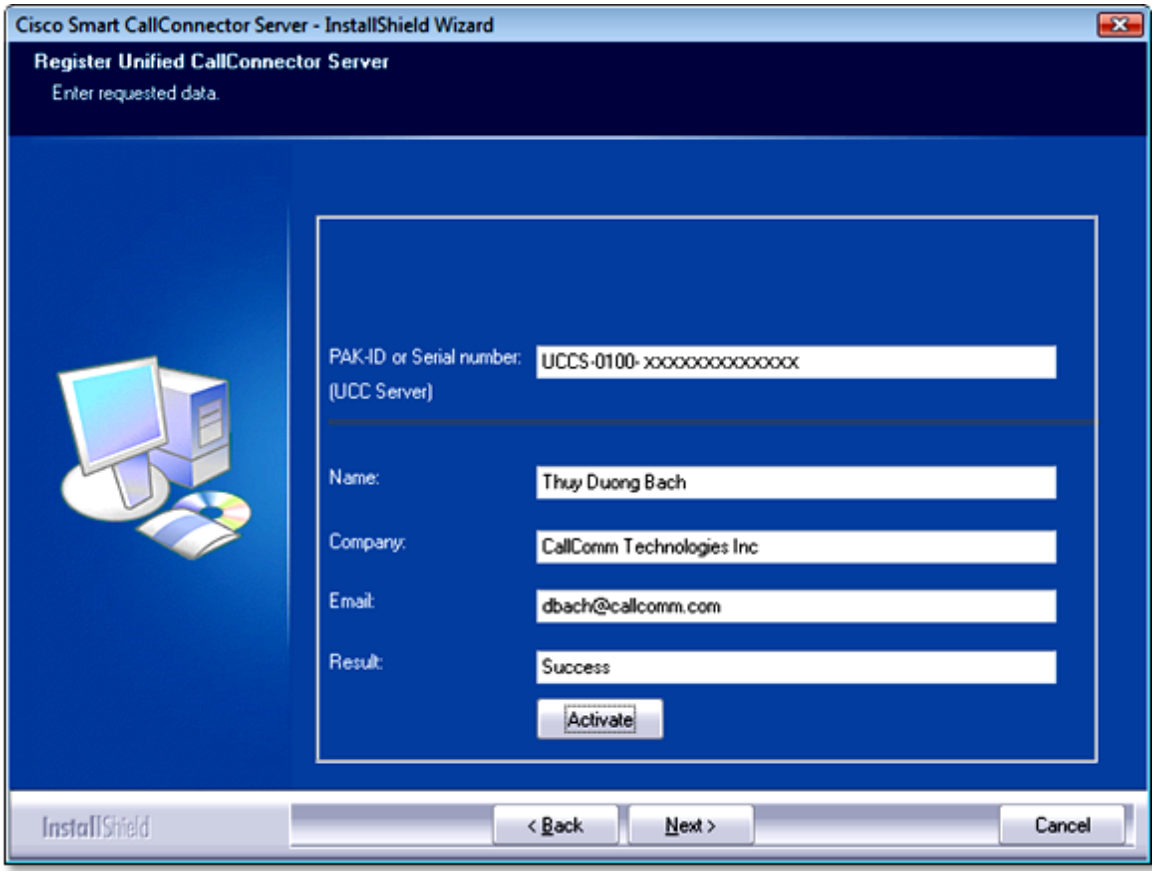


Figure 3-9 Example CallConnector Server License

3.6.2.1 To Proceed with Registering the CallConnector Server

Enter the **PAK-ID**. It should have the format 3xxxxxxxxxx.

Verify your contact information including name, company and email address. They are required for locating and verifying your license record for support purposes.

Click on the **Activate** button to start the registration process. The installation program will connect to the CallConnector License Server over the Internet and submit your PAK-ID, contact information and machine information. If the registration was successful, then the results field will display this information.

Click on **Next** to proceed with the installation.

Note: Please make a note of the registering user name and email address, as you may need to supply this while requesting license registration/activation support.

3.6.3 Advanced Options (Alternative Licensing Options)

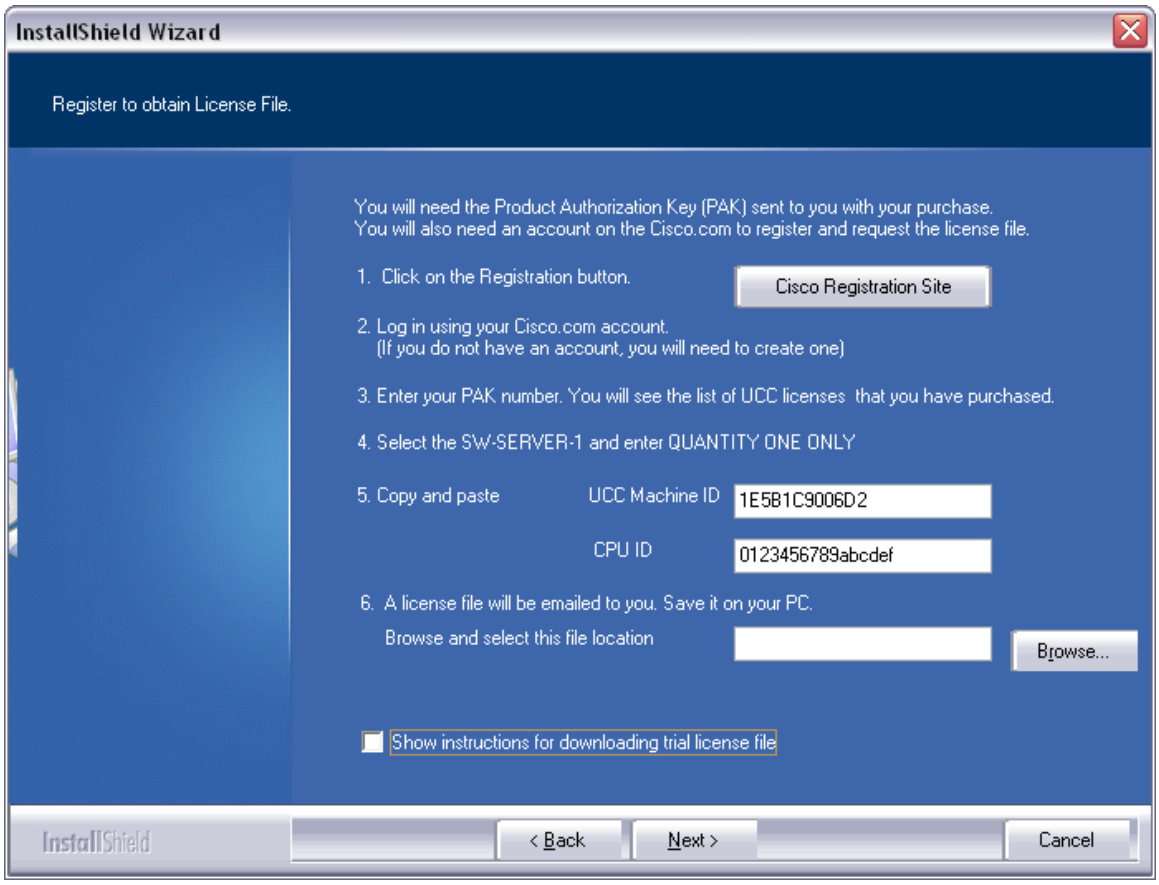


Figure 3-10 CallConnector Off-line Licensing Option

Warning: Off-Line Licensing method does not support Windows x64 bit environments.

You will need the following information to generate a license file for the CallConnector:

PAK ID: This is shipped to you as a part of your purchase from Cisco Systems.

Access to Cisco License Registration Site: http://www.cisco.com/go/license

CCO Account: This is used to log in to the Cisco License site. If you do not have an account, you can create one on-line at http://tools.cisco.com/RPF/register/register.do

CallConnector Machine ID and CPU ID: This information is needed for each client or server upon which CallConnector software will be installed. The CallConnector installation program identifies this information during the installation process. There is also a standalone CallConnector Machine ID utility that specifically identifies this information.

The steps for generating the license file are given below.

Click on the **Cisco Registration Site** button. This will take you to the Cisco System license registration site: http://www.cisco.com/go/license. Login using a valid CCO Account. If you do not have an account, you will need to create one on-line at http://tools.cisco.com/RPF/register/register.do

Enter your **PAK ID** in the field labeled **PAK ID** and click on **Submit** or press Enter.

The License Server will retrieve the license purchase information and will display the ordered, fulfilled and available quantities of CallConnector licenses.

WARNING: You can run only one license on a computer. If you select more than one, then these licenses will not be available for use on other computers.

Copy and paste the CallConnector Machine ID and CPU ID obtained in step one, above, and enter your contact information and email address. Click on **Accept Agreement** and Continue.

Verify the information you have entered. If there is an error or if you have selected more than quantity one, then go back and correct this information.

Once you have completed the online registration, your License file will be emailed to you. Save it on the desktop then proceed with the CallConnector software installation process.

Click on the Browse button and navigate to the folder that contains the saved license file.

WARNING: Off-Line Licensing method does not support Windows x64 bit environments.

Click on **Next** to proceed.

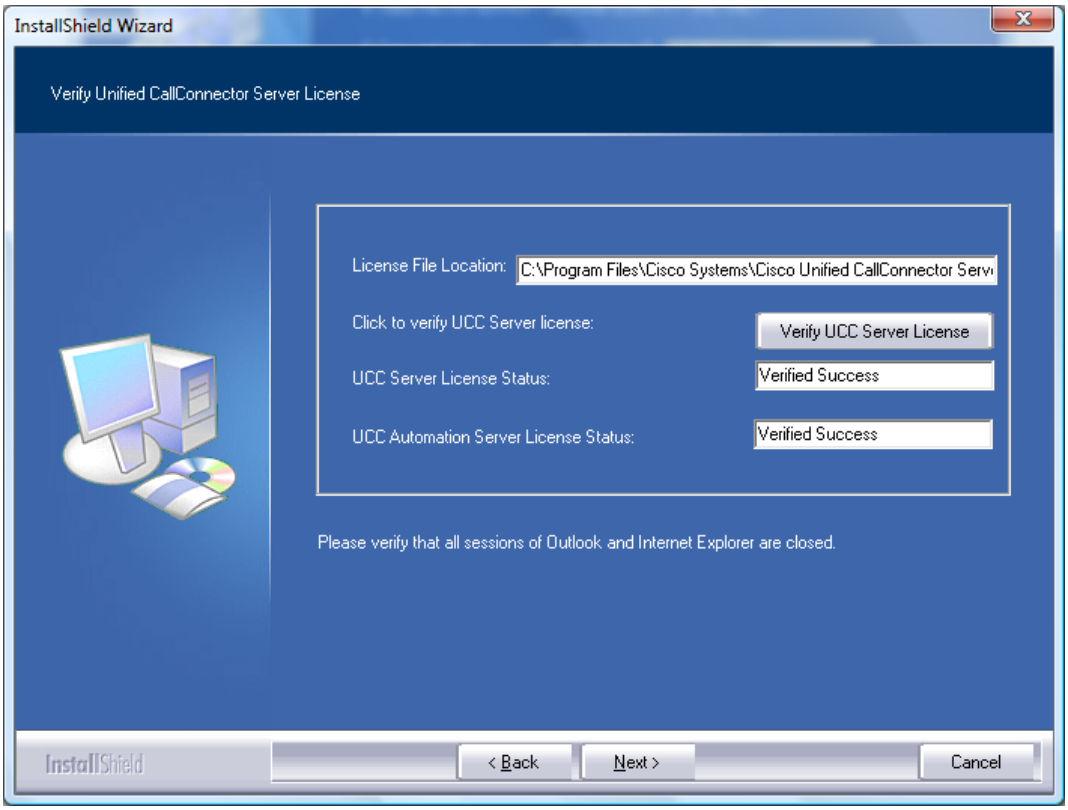


Figure 3-11 CallConnector License File Verification

Click on the Verify CallConnector Server License button.

The licensing status of the CallConnector Server is displayed in the fields below.

Click on Next to complete the installation.

You will need to restart the computer once the activation has been completed to apply the registry updates.

3.6.4Problems with Activation

The license activation process can fail for a number of reasons. Some of these are discussed below.

3.6.4.1 Cannot Access the Internet

The activation process cannot access the Internet. Among other reasons, this can be due to:

Firewall blocking the Configuration Manager from accessing the Internet

If a Proxy Server is being used, verify that the Internet can be accessed from the Internet Explorer. Also verify that it is a supported Proxy server. The activation process supports the Socks and HTTP proxy servers. The proxy parameters are read from the Internet Explorer Proxy server settings.

3.6.4.2 Cannot Access the License Server

This error indicates that the Internet is accessible but the License Server cannot be accessed.

To verify License Server availability you can browse to the License Server site: http://www.callconnecor.com

3.6.4.3 Trial (Evaluation) Period has expired

The trial period for the CallConnector Server on this computer has expired. You will have to purchase a server license and run the Configuration Manager to enter the new license.

When the trial period expires, the CallConnector Server applications will stop operating.

3.6.4.4 License has been Activated on another Machine

The serial number that you have entered is invalid and is being used on another computer. You will need to purchase a valid Server serial number.

3.6.4.5 Serial Number is Invalid

The serial number that you have entered is invalid. Check the number you have entered. You will need to purchase a valid Server serial number for the Server applications to operate.

3.6.4.6 Activation Information has been Modified

Once the serial number has been activated, a set of information is stored in the Windows registry. If this information is deleted or changed, then the activation checking will fail and you will need to re-activate the software.

3.6.4.7 Trial License has been blocked

Please contact Cisco support as the trial license has been blocked.

3.6.5Finish the installation

Once the installation is complete, the installation program will present you with the confirmation. You can then click on Finish and log into the Configuration Manager using the default username/password: admin/admin to get started.

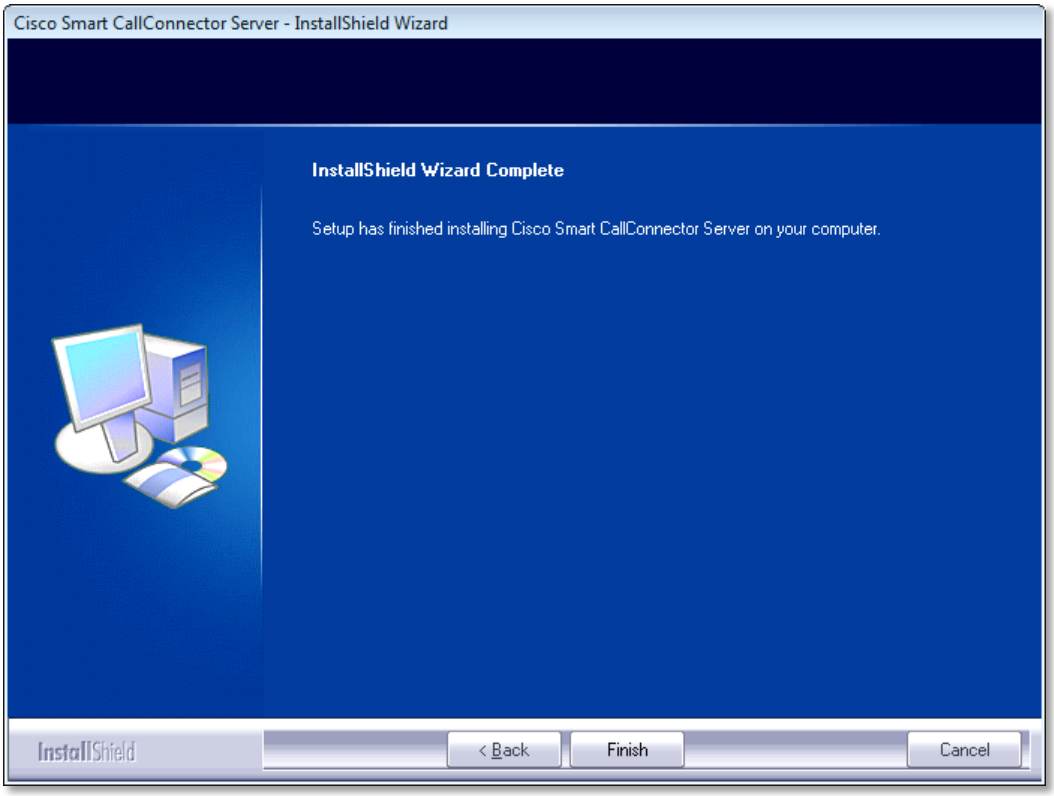


Figure 3-12 Finishing the installation

3.6.5.1 To Finish up the Installation

Click on **Finish** when prompted. You may have to restart the Server PC for changes to take effect.
Run the Cisco Smart CallConnector Configuration Manager by selecting Start menu -> All Programs -> Cisco Systems -> Cisco Smart CallConnector Server -> Cisco Smart CallConnector Configuration Manager.
When the log in screen displays, enter the default username/password: admin/admin.

3.7 Performing an Upgrade

If you want to upgrade your CallConnector Server to a newer version, then you can download and run a later installation program. The installation program will ask you if you want to upgrade the CallConnector files. Click on Yes to continue with the upgrade. Make sure that you have closed all instances of Internet Explorer and Outlook and the CallConnector Server programs. The install program will then copy the newer versions of the files to your computer.

3.8 Removing CallConnector Server

You can remove the CallConnector and all its files from the Windows Add/Remove program.

From the Widows Start menu, select Settings and open the Control Panel.
Double click on Add/Remove Programs
Select Cisco Smart CallConnector Server and click on the Uninstall button.

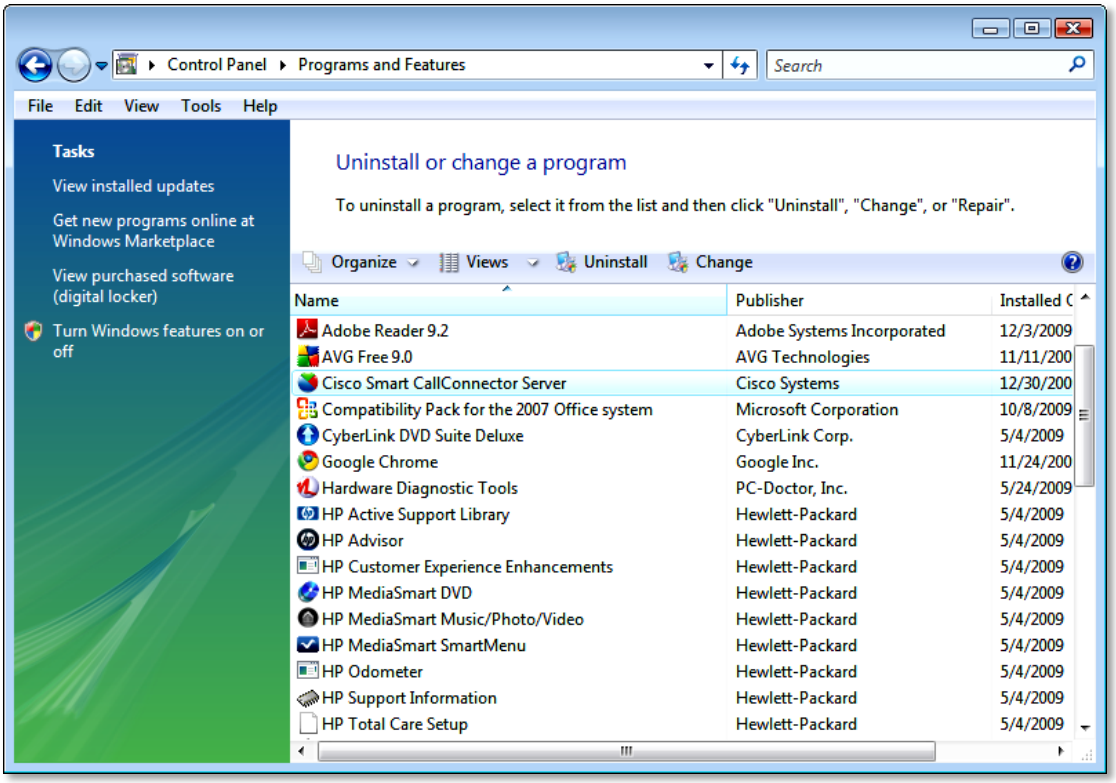


Figure 3-13 Remove the CallConnector Server from the Control Panel

Or you can double-click on the installation program. It will check to see if the software was previously installed. If yes, you will be presented with 3 options:

Modify: Use this option when you need to upgrade the software.

Repair: You could select this option if you had problem with the previous installation.

Remove: Select this option when you want to remove the CallConnector Server software.

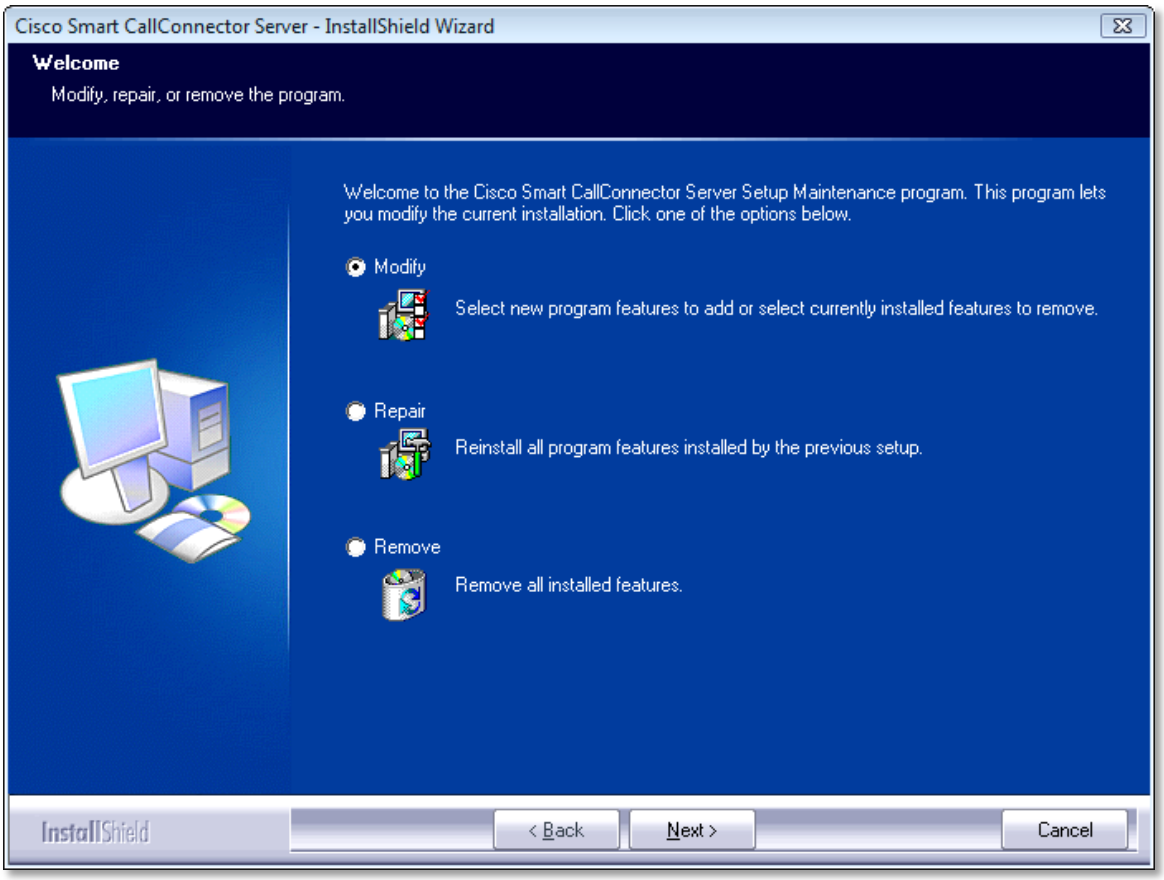


Figure 3-14 Remove the CallConnector Server from the installation program

CHAPTER 4

4 Cisco UC500/CME-ISR Configuration

NOTE: It is strongly recommended to read the Smart CallConnector Server Quick Install Guide for Installation and Configuration, before reading this chapter. It is assumed user understand what parameters can be configured with CCA (when configuring UC500) and the additional configuration required to connect the Smart CallConnector Server.-

The Cisco CallConnector Servers (CallConnector Servers) connect to the Cisco Smart Communications Manager Express on UC500 or ISRs (Cisco routers) a) to download phone configuration data and to write back configuration changes, b) to receive call status information and c) to control the call on the user' IP Phones. Both ends of these connections, the Cisco router and the CallConnector Server, need to be configured to allow the CallConnector Server to operate correctly.

This chapter describes the configuration required on the Cisco routers to allow the CallConnector Server to access and control the IP Phones. The sections include:

CONFIGURATION SUMMARY

Interfaces to Cisco Router -	Describes the interfaces or inter-working between the Cisco router and the CallConnector Servers.
Router Configuration Summary-	Provides an overview of the Cisco router phone configuration required for the CallConnector Server.
Multiple Routers for Server-	Describes the configuration rules and network requirements for multiple Cisco routers to connect to one CallConnector Server.

ROUTER CONFIGURATION FOR DOWNLOAD

Router Telnet/HTTP Setup -	Describes the parameters that have to be configured on the router to allow the Configuration Manager to access and download the router configuration data. These interfaces are also used to write back the configuration changes to the router.

ROUTER CONFIGURATION FOR CALLCONNECTOR SERVER

Ephones Parameters -	Describes the parameters that have to be configured on the ephones to allow the CallController Server to open communication sessions.
Radius Parameters -	Describes how to configure the Radius parameters on the Cisco router to allow the Presence Server to receive accounting packets.

CISCO ROUTER CONFIGURATION FOR OPERATOR CONSOLES

Operator Ephones -	Describes the considerations and examples for the configuration of lines for the operator console phone.
Ephone Template & Telephony Service	Provides examples of Ephone Templates for operator console and Telephony Service settings.
Hunt Group -	Describes the steps to setup a hunt group to route calls to the operator console DNs.
Direct Transfer to Voicemail -	Describes the configuration parameters required to support the transfer a call to a voicemail box using the soft-key feature.

4.1 Cisco Router Connections Overview

The CallConnector Server applications make the following connections to the Cisco routers:

SCCP connection to Cisco Router: The CallController Server application connects to the Cisco ephones using the Skinny Call Control Protocol.

Connection for Radius Messages: For receiving Radius accounting packets for the call events on the Cisco router.

HTTP Connection for Download: This connection used during configuration to download the router phone configuration data to simply the configuration process.

Telnet Connection for Configuration: This connection used to write configuration changes to the Cisco routers.

The table below shows these connections and the information/configuration required on each of the systems.

	Configuration on CallConnector Server	Configuration on Cisco Router
HTTP	Cisco Router IP Address Telnet User name Telnet Password and Exec Password	Setup the HTTP Server and enable local authentication
Telnet	Cisco Router IP Address Telnet User name Telnet Password and Exec Password	Setup a Telnet account for downloading the configuration information.
Call	Cisco Router IP Address Download and Select the ephones for CallConnector	Configure user name and password on all the ephones that are controlled from the CallConnector Server
Radius	Configure Password (Key) Configure Port	Configure the Radius Accounting Parameters on Cisco router Verify that the password and port are the same as the CallConnector Server (Note: These changes can be made from the Configuration Manager)

Table 4-1Summary of connection between the Router and CallConnector Server

4.2 Router Configuration for CallConnector Server

The Smart CallConnector Server requires a number of parameters to be configured on the Cisco Router and Cisco Smart CUE. These features have to be first provisioned on the Cisco router and CUE and then the corresponding parameters have to be configured on the CallConnector system. This section provides an overview of the Cisco router and CUE setup requirements.

4.2.1 *Cisco Router Setup for CallConnector Server*

Function	What needs to be setup
Telnet/HTTP access for configuration data	The Telnet account with executive level privilege and the router HTTP Server with local authentication need to be setup to allow the CallConnector Configuration Manager to download phone configuration and to write Radius configuration.
Ephones username and password	The CallConnector Server connects to the user's ephones to allow the user to control and manage calls from the desktops. It uses the Cisco CME TAPI connection – a SCCP connection that is parallel to the IP phone connection to the Cisco router. The TAPI connections require the ephones to be configured in the Cisco router with user name and password. Each ephone that is to be controlled by the CallConnector Server needs to have a unique username and password configured. Note: In multiple router configurations, ephone user names must be unique across all routers.
Ephone-DN number and names	Configure the number and name fields for all Ephone-DNs to allow import of users/contacts for the directory databases.
Radius Accounting Parameters	RADIUS accounting messages can be generated by Cisco router for calls that originate or terminate on the Cisco router endpoints. The CallConnector system uses these messages to obtain the call state and calling/called numbers. The CallConnector Server includes a RADIUS server functionality and only requires the Cisco router to be setup to send the RADIUS accounting messages of the required format, type and frequency to the CallConnector server. The section on 'Setting Up Radius Accounting' provides details for manually configuring the router using CLI. The Configuration Manager provides GUI interface to setup the required Radius parameters on the Cisco router, corresponding configuration on the CallConnector Server. It also provides tools for verifying that the Radius messages are being received – are described in the next chapter.
Telephony Service Parameters	The following general parameters need to be set in the Telephony Service section of the Cisco router configuration: Keep Alive Timeout for the TAPI messages. This is set as following: "keepalive 30 auxiliary 2". The TAPI timeout value is the number after auxiliary multiplied by three in seconds. Transfer-System should be set to Full Consult as shown below: "transfer-system full-consult".

Table 4-2 Router Setup Requirements for CallConnector Server

4.2.2 *Additional Cisco Router Setup for Operator Consoles*

Function	What needs to be setup
Configure the Operator's IP Phone(s)	The CallConnector Operator application allows the operators to control the calls on their IP phone from the PC. This requires the phone to be configured with directory numbers and features suitable for the operator call handling functions, These include: Personal Directory Number Directory Numbers for the incoming call of each category (call queues) Softkey Features including Transfer-to-Voicemail
Call Routing to the Operator Phones	There can be several categories of calls received by the operators each requiring a distinct call treatment. Examples of such call categories might include the Main Number calls, Customer Support calls, Sales calls or Internal calls. The routing of these calls to the operator phones needs to be configured in the Cisco Router. Generally these calls will be directed to different extension numbers in the operator's phone.
Multiple Operators Deployments	If the organization has multiple operators, the calls need to be distributed to the operators. The recommended method is to use a hunt group for each operator call queue.
Busy and Night Service Routing	When the operators are not available during the work day the incoming calls need to be routed either to an alternate number or to voice mail. For off-hour call routing, the Cisco router night service routing can be enabled.
Park and Page Numbers	Park slots or directory numbers need to be configured on the router to allow the operators to park the calls and make overhead announcements. This requires: Setting up the Park Ephone-DN in the router Setting up the overhead paging circuits and their associated DNs
Telephony Service Parameters	Voicemail number and Fac Standard need to be enabled to allow operators transfer calls directly to CUE. Hunt-group logout HLog is required for operators to perform hunt-group logout operation.

Table 4-3 Router Setup Requirements for CallConnector Operator Consoles

4.3 Multiple Routers for CallConnector Server

A single CallConnector Server can be shared by users on multiple Cisco router systems. Such configurations can be used to support branch offices with their individual Cisco working with a centralized CallConnector Server.

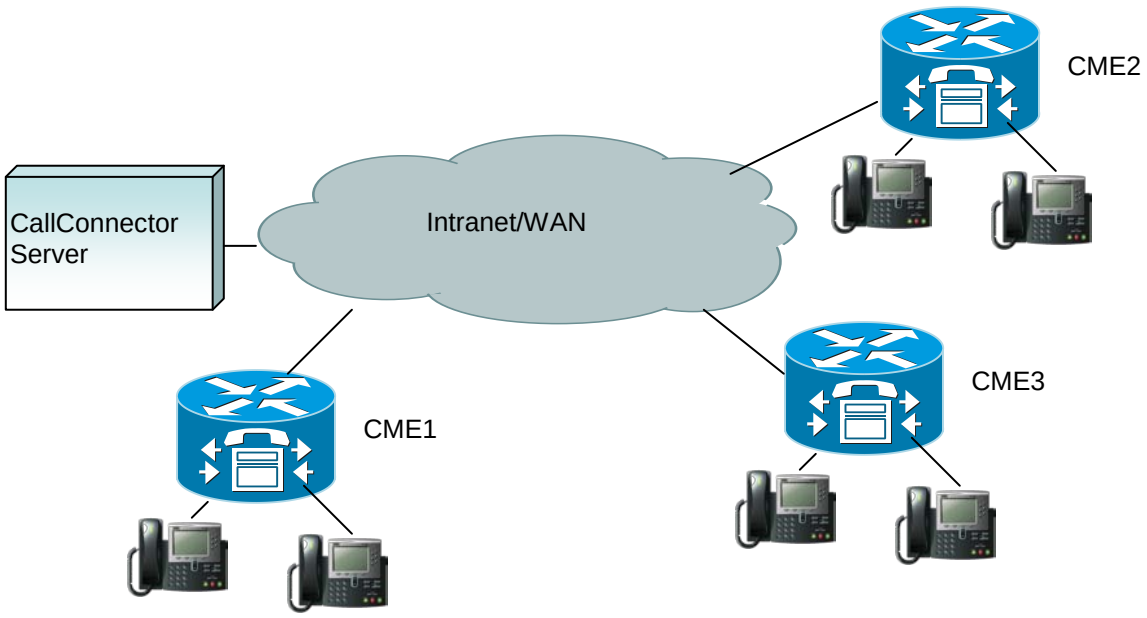


Figure 4-1 CallConnector Server Connected To Multiple Cisco Routers

In multi-site configurations, users at any CallConnector Client will be able to:

1. View the availability and locations settings of their colleagues across the organization.

2. See the current telephone status for all the extension numbers maintained in the CallConnector corporate directory.

3. Share the organizational contact information with an ability for click to dial.

There are a number of configuration rules and network requirements for such multi-router systems.

Configuration	Description
Maximum Number of Routers	It is recommended that no more than 5 ISR/UC500 routers be connected to the CallConnector Server
Maximum number of users per CallConnector Server	The maximum number of users per CallConnector Server is 250 users
TCP/UDP Control Messages	Network must provide bandwidth and minimum latency for the control messages. RADIUS messages are transmitted as UDP messages. TCP sessions are used to transport the SCCP/Skinny messages between the Cisco router and the CallConnector Server
Network Bandwidth Requirement	If the routers are in different locations connected via private network, the network should have sufficient capacity to support: 1. SCCP/Skinny traffic between the CallConnector Server and each of the routers. The traffic to the CallConnector Server will be the number of ephones controlled by the CallConnector Server multiplied by the bandwidth required for one SCCP session. 2. Radius Messages -- UDP traffic from each router to the CallConnector Server. 3. SIP Messages – TCP & UDP traffic between the CallConnector clients and the CallConnector Server. Note: The network should also allow the transport of UDP traffic between the routers and the CallConnector Server.
Location of Routers	Generally the CallConnector Server should hosted with the largest Cisco router in a multiple router configuration. The CallConnector Services are not sensitive to the location of the routers, although it is assumed that the routers are in one country.
Dialing Plans and Dialing Rules	The CallConnector Server allows administrators to setup the location, extension number lengths, outside access codes for each router. The CallConnector Server also provides per router a digit manipulation table for pre-processing the telephone numbers for dialing and lookup.
Unique Extension Numbers	The CallConnector Server matches the extension numbers to the user in the corporate directory and propagate this information as telephone status. This requires that the extension numbers in multiple router configuration be unique and non-overlapping.

Table 4-4 Requirements for Multiple Routers Connecting to CallConnector Server

4.4 Using Cisco Configuration Assistant/Professional

The CallConnector Server downloads the current phone configuration from the router. The Cisco configuration tools – Cisco Configuration Assistant for the UC500 series or Cisco Configuration Professional for CME-ISRs can be used to make all the required configuration changes to the router.

Once these changes have been made, you can run the Configuration Manager to download the changes to the CallConnector Server.

If changes are made to the ephone, ephone-dn, hunt groups, and other phone related configurations in the router either manually or using a configuration tool or by re-loading the configuration file, then these changes have to be loaded to the CallConnector Server by running the Configuration Manager and downloading the phone configuration again.

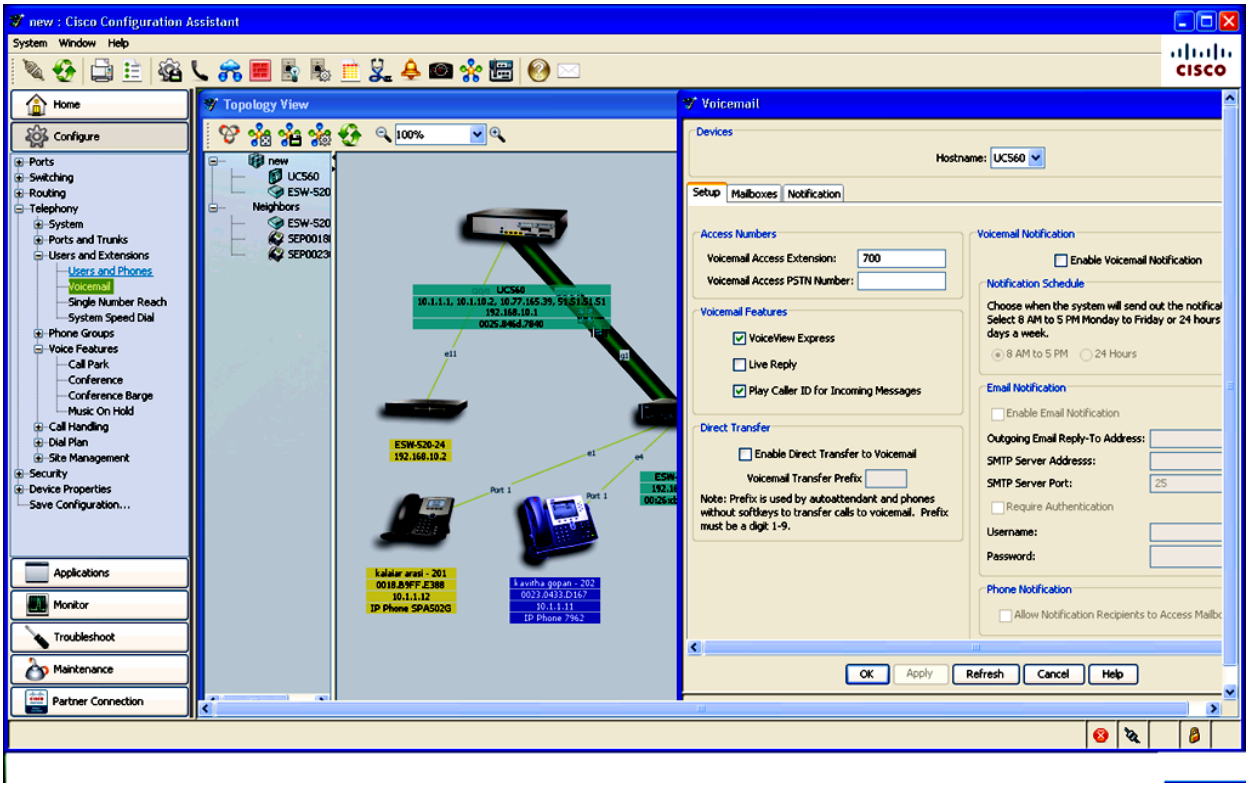


Figure 4-2 Cisco Configuration Assistant GUI Tool

Note

The Cisco Graphical Configuration tools can be used to configure the router. For UC 500 installations it is recommended and assumed through this document, that user is installing the Cisco UC500 using CCA. Please note that some parameters are not required to be configured if the UC500 has been configured using CCA.

The CallConnector Server maintains the router phone configuration in its local databases. This information is loaded in by the Configuration Manager from the Download Router Configuration button.

Any changes to the phones, DNs, hunt groups, dialing plans in the router require these changes to be downloaded to the CallConnector.

Although some interfaces are available in the Configuration Manager, the recommended tools for making configuration changes are CCA and CCP.

The configuration of the Radius accounting parameters is not available from CCA/CCP. This setup can be made from the Configuration Manager.

All routers connected to the CallConnector Server need to be configured to the CallConnector requirements and their configurations downloaded .

4.5 Setup Router for Download Access

To setup the required parameters for CallConnector Configuration Manager, perform the following steps:

4.5.1 Summary Steps:

configure terminal
ip http server
ip http authentication local
ip http timeout-policy idle 60 life 86400 requests 86400
aaa new-model
username *username* privilege 15 password 0 *password*
line vty 0 9
transport interface all
transport preferred none
privilege level 15
end

4.5.2 Detailed Steps:

	Command	Purpose
Step 1	**configure terminal** Example: `Router# configure terminal`	Enters global configuration mode.
Step 2	**(Not required on UC 500 when configured through CCA)** **ip http server** Example: `Router(config)# ip http server`	Enables the Cisco web browser user interface on the local Cisco router.
Step 3	**(Not required on UC 500 when configured through CCA)** **ip http authentication local** Example: `Router(config)# ip http authentication local`	Sets http server authentication method to local user authentication.
Step 4	**(Not required on UC 500 when configured through CCA)** **ip http timeout-policy idle 180 life 180 requests 86400** Example: `Router(config)# ip http timeout-policy idle 180 life 180 requests 86400`	Sets http server time-out policy parameters.
Step 5	**(Not required on UC 500 when configured through CCA)** **aaa new-model** Example: `Router(config)# aaa new-model`	Enables the AAA access control system.
Step 6	**(Not required on UC 500 when configured through CCA)** **username** *username* **privilege 15 password 0** *password* Example: `Router(config)# username cisco privilege 15 password 0 cisco`	Creates a local user account with enough privilege to be used to access Cisco router http service.
Step 7	**(Not required on UC 500 when configured through CCA)** **line vty 0 4** Example: `Router(config)# line vty 0 4`	Required for Telnet session.
Step 8	**(Not required on UC 500 when configured through CCA)** **transport input all** Example: `Router(config-line)# transport input all`	
Step 9	**transport preferred none** Example: `Router(config-line)# transport preferred none`	
Step 10	**(Not required on UC 500 when configured through CCA)** ****privilege level 15**	** This setting is required if the command prompt after logging in to the telnet session shows Router#. However, it's not necessary with User EXEC mode which shows Router>
Step 11	end Example: `Router(config)# end`	Returns to privileged EXEC mode.

Table 4-5 Detailed Steps for configuring Telnet/HTTP access for CallConnector Server

4.6 Setting up Ephone Parameters (UC500 and CME-ISRs only)

The CallConnector Server connects to the Cisco IP Phones to allow the user to control their phones from the CallConnector clients such as the toolbars. These connections are made over the TAPI port of the Cisco router.

The CallConnector server application – CallController Server registers and establishes a connection over the Cisco CME TAPI port to each of the ephones that have been configured for use by the CallConnector. To establish this connection each ephone much have the username and password field provisioned on the Cisco router.

4.6.1.1 Steps to Configure Username/Password for a Ephone

Below are the steps for configuring a typical ephone. The specific requirement for the CallConnector Server is highlighted in bold and includes the username and password. In this case the username is “john” and the password is “Cisco”.

Click Start -> Run
Type *telnet xxx.xxx.xxx.xxx* (xxx.xxx.xxx.xxx would be your Cisco router IP address)
Enter the username and password
Enter config t
Type *ephone x* (x would be the ephone id)
Type mac-address 0013.C307.E9C0 (MAC address of the ephone)
Type type 7960
Enter username john password cisco
Type button 1:a 2:b 3:c 4:d
a, b and c are the ephone DN IDs for the user extensions.
Type *exit* when finished

4.6.1.2 Example of Ephone Configuration

```
!
ephone  2
 mac-address 0013.C307.E9C0
 type 7960
 username john password Cisco
 button 1:4  2:5  3:6  4:43
!
```

In this example, the ephone-2 has been configured with username john and password cisco.

Note

Username and password are required to allow a TAPI connection to the IP Phone.

Username and password have to be less than 15 characters in length. (This is a Cisco router restriction.)

The IP-Phone has to be in service and registered for the 'TAPI' to be successful. If the phone is disconnected, after a timeout the TAPI connection will fail.

The Cisco router supports only one 'TAPI' connection to an ephone. Any additional connection requests get rejected.

When a TAPI session is established, the TAPI client information can be viewed using the 'Show Ephone TAPI' command. The TAPI client information displays the status 'REGISTERED' and the Client IP address.

The Cisco router enforces unique usernames for the ephones; however in multiple router environments, the system administrator will need to ensure that the usernames are unique across the routers. The CallConnector Server will change duplicate username to DUP-ip-address-username.

Ephone soft-key templates do not affect the CallConnector Client as the soft-keys are available to the TAPI session even if they are not configured for the ephone.

4.6.1.3 Pre-Requisites for Connecting to Ephones:

- Ephone must be configured with user name and password
- There must be a phone device registered to that ephone
- There must be network access for the TCP connections between the Cisco router and the CallConnector Server
- There must be no existing TAPI connections to that ephone. (The Cisco router supports only one TAPI connection per ephone.)
- The ephones must be selected using the Server Administration Wizard for it to be controlled and must be associated with a user for the user to manage call using the client.

4.6.1.4 Connection Recovery and Timeouts

The CallConnector Server tries to establish connections to all the ephones configured for the CallConnector Server. Normally these ephones will be a sub-set of all the ephones in the Cisco router. In the event these connections fail either at startup or during operation, the CallConnector CallController Sever will try to re-establish these connections. The recoveries of these ephone connections follow these rules:

- The CallConnector Server will try to establish connection to the ephone multiple times up to the Max-Retry count – an internal configurable parameter.
- When the Max-Retry count is exceeded, the CallConnector Server will stop trying to connect to the Cisco router for a period of time. This interval between the retries is a configurable period and is set to 6 minutes by default.
- If the connection cannot be re-established within the maximum retries, then CallConnector Server will wait for a configurable time period and then return to trying to re-establish the ephone connection.

4.6.1.5 To Verify TAPI Connection to Ephone

Complete the Cisco router and the CallConnector server configuration and start up the server applications from the CallConnector Services Manager application.

4.6.1.5.1 From the Cisco router:

From the command line interface, use the 'show ephone tapi' command to list the ephones with TAPI connections.

```
cc2800#show ephone tapi

ephone-2 Mac:0013.C307.E9C0 TCP socket:[11] activeLine:0 REGISTERED in SCCP ver
6 and Server in ver 5
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:7
IP:192.168.1.5 50179 Telecaster 7960  keepalive 132940 max_line 6
button 1: dn 4  number 5014 CH1   IDLE
button 2: dn 5  number 3 CH1   IDLE
button 3: dn 6  number 5015 CH1   IDLE
button 4: dn 43 number 5043 CH1   IDLE         CH2   IDLE
Username: john Password: cisco
Tapi client information

Username:john  status: REGISTERED Socket : [46]
 Tapi Client IP address:  192.168.1.17  Port: 3426
```

From the command line interface, use the 'debug ephone register' command to monitor the registration of the TAPI connections to the ephones.

4.6.1.5.2 From the Smart CallConnector Server

Open the CallConnector Diagnostic Tool. See Chapter 9 for more details.
Make a few calls from on the IP Phones.
From the CallController Server tests, run the Display All Phone Statistics test.
This will display the registered ephones and some basic call statistics.

4.6.1.6 To Reset the TAPI Connection to Ephone

Cisco version 7.0 and greater allow the TAPI session to be reset from the command line.

4.6.1.6.1 From the Cisco router:

Click Start -> Run
Type *telnet xxx.xxx.xxx.xxx* (xxx.xxx.xxx.xxx would be your Cisco router IP address)
Enter the username and password
Enter config t
Type *ephone x* (x would be the ephone id)
Type reset tapi (This is drop the current TAPI connection)

4.7 Setting Up the Radius Accounting

The Cisco router and its underlying IOS platform can be setup to generate accounting packets for the calls being handled within the system. These accounting messages can provide information on the start-time and end-time of the calls as well as the caller/called numbers. The accounting messages are sent to RADIUS servers using a standard protocol that is extended with Cisco specific parameters.

The CallConnector Presence Server has an integrated RADIUS server interface to connect with and receive these Radius accounting messages from the Cisco router systems.

Note

The Cisco Router has to be configured to enable the voice Radius accounting packets to be sent to the CallConnector Server.

The Smart CallConnector Server acts as the Radius Server and the Cisco router is the Radius client that generates and transmits the radius packets.

Cisco RADIUS VSA Voice Implementation Guide provides more details on the Radius setup options. The configuration of the Radius parameters on the router is to provide telephone status information to the Presence Server.

In multiple router configurations, each router must be configured to send the RADIUS accounting packets to the CallConnector Server. Note – the authentication password and the account port are required to be the same on each router.

4.7.1 Radius Parameter Setup Summary

- Enabling AAA accounting
- Enabling Connection-based Accounting
- Setting up the Radius Server IP address and port
- Entering the Authentication Key or password
- Enabling the Cisco Accounting Attributes – Vendor Specific Attributes
- Enable accounting for the gateways
- Setup source address for the Radius packets

4.7.2 Radius Configuration Notes

Item	Description
Accounting Port 1646	This is the port on the CallConnector Server to which the RADIUS messages are sent by the Cisco router. The port value is set in the Cisco router and must be the same on the CallConnector Presence Server – Radius Server Parameters page. In multiple router configurations, all accounting ports to the CallConnector Server must be the same. Note: Verify that the port is available on the CallConnector Server.
Authentication Key (Password)	The value of the Authentication Key is set in the Cisco router router. This same value must be configured on the CallConnector Presence Server. In multiple router configurations, the Authentication Key must be the same on all routers.
Radius Server IP address and port	This parameter specifies the IP Address of the Radius Server – in this case this will be the IP Address of the CallConnector Server. Note: The port value setting must be the same on the router and on the CallConnector Server.
Cisco Accounting Attributes	The Radius messages can contain Cisco specific attributes. The CallConnector Server requires these attributes and the VSA setting must be enabled on the router.
Source address for the Radius packets	The Cisco routers can have multiple network adapter cards and the Radius messages can be sent over any of these adapters. The CallConnector Server requires that the Radius messages must be sent over the same network adapter i.e. have the same source IP Address as the Cisco router IP Address used by the IP Phones.

Table 4-6 Notes on the Configuration of Radius Accounting for CallConnector Server

4.7.3To Setup Radius Parameters on Cisco Router

The table below displays the commands for setting up the Radius parameters on the Cisco router using the Command Line Interface.

Command	Description
enable Router> enable	Enter Exec mode
Configure terminal Router # configure term	Enter global configuration mode
aaa new-model Router (config)# aaa new-model	Enables AAA
aaa accounting connection h323 Router (config)# aaa accounting connection h323	Enables connection based accounting
action-type start-stop Router (config)# action-type start-stop	Record start and stop without waiting on accounting records
broadcast Router (config)# broadcast	Use broadcast for accounting
group Router (config)# group uccserver	Server-group name
aaa group server radius uccserver server 192.168.1.18 auth-port 1645 acct-port 1646 Router (config)# aaa group server radius uccserver	Specifies the IP address and ports for the servers that are in the group uccserver above
aaa accounting update newinfo Router (config)# aaa accounting update newinfo	Enables sending update packets for new information for the interim call states
radius-server host Router (config)# radius-server host 192.168.1.18 auth-port 1645 acct-port 1646	Specifies the Radius Server IP-Address and accounting port. The IP Address and Port should match the setting on the Presence Server Radius configuration.
radius-server key Router (config)# radius-server key cisco	Sets the password for authenticating the Radius server. This password should also be entered in the Radius configuration on the Server Wizard Radius Window,

radius-server vsa send accounting Router (config)# radius-server vsa send accounting	Sends vendor specific attributes. The CallConnector Server uses the Cisco specific attributes in the accounting messages.
aaa session-id common Router (config)# aaa session-id common	Set common session id
gw-accounting syslog gw-accounting aaa Router (config)# gw-accounting aaa	Enable accounting for gateway endpoints to send Radius messages for the PSTN ports
ip radius source-interface Router (config)# ip radius source-interface GigabitEthernet 0/0	Set the source ip address of the Radius messages to be the same as the Cisco router IP Address for skinny messages.

Table 4-7 Detailed Steps for configuring Radius for CallConnector Server

Below is an example of the router configuration file showing the Radius parameter settings:

```
aaa new-model
aaa group server radius uccserver
 server 192.168.1.116 auth-port 1645 acct-port 1646
aaa accounting update newinfo
aaa accounting connection h323
 start-stop
broadcast
group uccserver
aaa session-id common
gw-accounting syslog
gw-accounting aaa
radius-server host 192.168.1.116 auth-port 1645 acct-port 1646
radius-server key cisco
radius-server vsa send accounting
radius-server vsa send authentication
ip radius source-interface GigabitEthernet 0/0
```

4.7.4Sending Radius Messages to Multiple Addresses

If your environment has multiple Radius servers and you need to configure the router to send to the CallConnector Server and the other Radius servers then the following settings can be used:

Group parameter in the aaa accounting connection setup can be used to send messages to a list of Radius servers.

The Radius Server IP Addresses is specified in aaa group server radius group-name as shown below.

aaa accounting connection h323 start-stop radius Router (config)# aaa accounting connection h323 start-stop broadcast **group uccserver group syslogserver**	Enables connection based accounting and send stop and start packets
aaa group server radius uccserver server 1.1.1.1 auth-port 1645 acct-port 1646 aaa group server radius **syslogserver** server 1.1.1.2 auth-port 1645 acct-port 1646 Router (config)# aaa group server radius uccserver	Specifies the IP address and ports for the servers that are in the group uccserver above
radius-server host Router (config)# radius-server host 1.1.1.1 auth-port 1645 acct-port 1646 key uccserver Router (config)# radius-server host 1.1.1.2 auth-port 1645 acct-port 1646 key cisco	Specifies the Radius Server IP-Address and accounting port. The IP Address and Port should match the setting on the Presence Server Radius configuration. This key (password) will apply only to this radius server. Note: Remove the Key setting from Router (config)# radius-server **key uccserver**

Table 4-8 Detailed Steps for configuring Telnet/HTTP access for CallConnector Server

Below is an example of the router configuration file showing the Radius parameter settings for sending Radius messages to multiple Radius servers.

```
aaa new-model
!
aaa group server radius uccserver
 server 192.168.1.2 auth-port 1645 acct-port 1646
!
aaa group server radius syslogserver
 server 192.168.1.3 auth-port 1645 acct-port 1646
!
aaa accounting update newinfo
aaa accounting connection h323 start-stop broadcast group uccserver group syslogserver
!
aaa session-id common
!
!
gw-accounting syslog
gw-accounting aaa
!
radius-server host 192.168.1.2 auth-port 1645 acct-port 1646
radius-server host 192.168.1.3 auth-port 1645 acct-port 1646
radius-server key uccserver
radius-server vsa send accounting
radius-server vsa send authentication
!
```

4.7.5Verifying Radius Settings

- Use the ‘Show Running-Config’ from the CLI to verify your router settings.
- Verify that each router is sending the accounting messages to the correct CallConnector Server IP Address and port. Use the Debug Radius Accounting and see example below.
- Verify in the debug messages that you are getting Radius messages for Off-hook, Ring, Connect and Hang-up.
- Verify that the source IP address in the Radius messages is the same as the Cisco router IP Address being used by the IP Phones.
- Once the CallConnector Server has been setup, you can verify using the ‘View Radius Message’ utility to view the messages being received from the routers.
- Verify that the Radius parameters have been setup correctly on all the routers.

4.7.5.1 Example of Radius Accounting Debug Messages

Note: The Send Accounting Request to IP-Address and the corresponding response indicating receipt and acknowledgement from CallConnector Server.

```
26 20:19:56.442: RADIUS(000549E7): Send Accounting-Request to 192.168.1.99:1646 id
1646/138, len 867
26 20:19:56.442: RADIUS:  authenticator 58 A6 38 48 9F 73 B4 92 - 44 05 5E 12 37 B5 8F A1
26 20:19:56.442: RADIUS:  Acct-Session-Id     [44]  10  "000A92A9"
26 20:19:56.442: RADIUS:  Calling-Station-Id  [31]  6   "4002"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  61
26 20:19:56.442: RADIUS:   h323-setup-time    [25]  55  "h323-setup-time=*12:19:54.786 central
Wed Dec 26 2007"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  40
26 20:19:56.442: RADIUS:   h323-gw-id         [33]  34  "h323-gw-id=cc3845.yourdomain.com"
```

```
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  56
26 20:19:56.442: RADIUS:   Conf-Id            [24]  50  "h323-conf-id=C1535895 B32611DC
B4D0D9D2 5FE6F9B4"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  31
26 20:19:56.442: RADIUS:   h323-call-origin   [26]  25  "h323-call-origin=answer"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  32
26 20:19:56.442: RADIUS:   h323-call-type     [27]  26  "h323-call-type=Telephony"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  65
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   59  "h323-incoming-conf-id=C1535895
B32611DC B4D0D9D2 5FE6F9B4"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  30
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   24  "subscriber=RegularLine"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  134
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   128 "feature-vsa=fn:TWC,ft:12/26/2007
12:19:54.786,cgn:4002,cdn
frs:0,fid:471652,fcid:C1535895B32611DCB4D0D9D25FE6F9B4,legID:58BBB"
26 20:19:56.442: RADIUS:  Acct-Input-Octets   [42]  6   0
26 20:19:56.442: RADIUS:  Acct-Output-Octets  [43]  6   0
26 20:19:56.442: RADIUS:  Acct-Input-Packets  [47]  6   0
26 20:19:56.442: RADIUS:  Acct-Output-Packets [48]  6   0
26 20:19:56.442: RADIUS:  Acct-Session-Time   [46]  6   0
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  63
26 20:19:56.442: RADIUS:   h323-connect-time  [28]  57  "h323-connect-time=*12:19:56.434
central Wed Dec 26 2007"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  66
26 20:19:56.442: RADIUS:   h323-disconnect-tim[29]  60  "h323-disconnect-time=*12:19:56.434
central Wed Dec 26 2007
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  32
26 20:19:56.442: RADIUS:   h323-disconnect-cau[30]  26  "h323-disconnect-cause=10"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  35
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   29  "h323-ivr-out=Tariff:Unknown"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  24
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   18  "release-source=1"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  28
26 20:19:56.442: RADIUS:   h323-voice-quality [31]  22  "h323-voice-quality=0"
26 20:19:56.442: RADIUS:  Vendor, Cisco       [26]  47
26 20:19:56.442: RADIUS:   Cisco AVpair       [1]   41  "gw-rxd-cgn=ton:0,npi:0,pi:0,si:0,#:4002"
26 20:19:56.442: RADIUS:  User-Name           [1]   6   "4002"
26 20:19:56.442: RADIUS:  Acct-Status-Type    [40]  6   Stop                    [2]
26 20:19:56.442: RADIUS:  NAS-Port-Type       [61]  6   Virtual                 [5]
26 20:19:56.442: RADIUS:  NAS-Port            [5]   6   60000
26 20:19:56.442: RADIUS:  NAS-Port-Id         [87]  15  "EFXS 50/0/358"
26 20:19:56.442: RADIUS:  Service-Type        [6]   6   Login                   [1]
26 20:19:56.442: RADIUS:  NAS-IP-Address      [4]   6   192.168.1.122
26 20:19:56.442: RADIUS:  Acct-Delay-Time     [41]  6   0
26 20:19:56.442: RADIUS: Received from id 1646/135 192.168.1.99:1646, Accounting-
response, len 20
26 20:19:56.442: RADIUS:  authenticator B5 42 1C 4B 5B 29 6E CB - 79 F5 3E 83 56 D1 94 2C
26 20:19:56.442: RADIUS: Received from id 1646/136 192.168.1.14:1646, Accounting-
response, len 20
26 20:19:56.442: RADIUS:  authenticator BE 4D 8E 20 BB ED A2 E9 - 91 6A 0C FE 9B 74 34
02
3845#
```

4.7.5.2 Example 2:

On the Cisco router :
From the command line interface, use the debug command to view the radius accounting messages being sent:

The debug message below was generated on an off-hook and sent to Radius-Server at IP Address 192.168.1.17 from IP Address `192.168.1.121`

Note: Use of debug commands, especially verbose debug command, can place a heavy load on the router and can impact other functions on the router.

```
cc2800#debug radius verbose
cc2800#term mon
cc2800#
*May 13 13:27:00.648: RADIUS/ENCODE(0007DEA8):Orig. component type = VOICE
*May 13 13:27:00.648: RADIUS/ENCODE: Skip encoding 0 length AAA attribute dnis
*May 13 13:27:00.648: RADIUS(0007DEA8): Config NAS IP: 0.0.0.0
*May 13 13:27:00.648: RADIUS/ENCODE(0007DEA8):Orig. component type = VOICE
*May 13 13:27:00.648: RADIUS/ENCODE: Skip encoding 0 length AAA attribute dnis
*May 13 13:27:00.648: RADIUS(0007DEA8): Config NAS IP: 0.0.0.0
*May 13 13:27:00.648: RADIUS/ENCODE(0007DEA8):Orig. component type = VOICE
*May 13 13:27:00.648: RADIUS/ENCODE: Skip encoding 0 length AAA attribute dnis
*May 13 13:27:00.648: RADIUS(0007DEA8): Config NAS IP: 0.0.0.0
*May 13 13:27:00.648: RADIUS/ENCODE(0007DEA8):Orig. component type = VOICE
*May 13 13:27:00.648: RADIUS/ENCODE: Skip encoding 0 length AAA attribute dnis
*May 13 13:27:00.648: RADIUS(0007DEA8): Config NAS IP: 0.0.0.0
*May 13 13:27:00.652: RADIUS/ENCODE: Best Local IP-Address 192.168.1.121 for
Radius-Server 192.168.1.17
*May 13 13:27:00.652: RADIUS(0007DEA8): Send Accounting-Request to
192.168.1.17:1646 id 1646/149, len 565
```

4.8 Configuring Operator Consoles

Configuring operator consoles on the router involves setting up a number of configurations, including:

- Operator's IP Phone Configuration with the required DNs and features
- Setting up the parameters to direct the incoming calls to the correct operator(s) DNs.
- Configuring the Busy and Night routing options in the router
- Provisioning the Park Numbers (Park ephone-DNs) in the router
- If there is overhead page, then setting up the paging circuits

Once the router configuration has been completed, then this information can be downloaded to the CallConnector Server and the Operator Console Parameters selected.

4.8.1Configuration of the Operator's Phone

The operator's IP phone is required to be a multi-line Cisco IP Phone with sufficient capacity to handle the operator calls. The considerations for configuring the operator's phone include:

4.8.1.1 Number of Call Queues:

An operator can be configured with multiple call queues. Each call queue is comprised of one or more directory numbers on the operator phone. The number of directory numbers required depends on the maximum number of calls that are expected concurrently at that operator's phone and the number of channels for directory numbers. We recommend that the operator's directory numbers be configured to have eight channels i.e. are octal-line DNs.

As an example, let us configure an operator with two incoming call queues – Main Number, Sales and Support. The Main Number queue could have up to six call waiting, and the Sales and support queue would have a similar number of calls.

4.8.1.2 Number and type of Directory Numbers or DNs:

For the two queues above, we can use four octal-line DNs to receive all the operator calls. Two DNs for the Main Number queue(providing a total of sixteen channels for calls), and another two octal DNs for the Sales/Support calls (with sixteen channels).

In addition, the operator phone should have a personal DN for receiving and making calls.

4.8.1.3 Multiple Operator Positions

When there are more than one operator positions, then for each call queue, a hunt group should be configured in the router. The hunt group is required to have the DNs for that call queue on each of the operator phones in the hunt group number list.

So in the example above, a hunt group for the Main Number queue would need to have the two DNs from each of the operator phone in the hunt list.

4.8.1.4 Softkey features for the operators' phone

The CallConnector Operator utilizes several softkey features that need to be configured and enabled in the operator's phone. These features need to be enabled in the default ephone-DN templates. The required softkeys include:

1. Standard softkey options for the basic telephony features – hold, transfer, conference, pickup etc.

2. Transfer-to-Voicemail. This softkey should be enabled for the connected state to the called to be transferred to the requested contact's voicemail.

3. HLog → Hunt group login/logout for the configurations with hunt groups.

4. Record. To allow emergency or problem calls to be recorded and saved to voicemail.

4.8.1.5 Example of Single Operator Console phone configuration

Button 1: 4300 (dual) ← Attendant Personal Number

Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)
Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ← Customer Service Calls
Button 8: 4308 (octal)

Figure 4-3 Example Queue Configuration for Single Attendant

The example configuration shown above shows an operator IP phone directory numbers and the call queue configurations for a single operator position. One directory number is assigned as the attendant primary or personal number. Three octal channel directory numbers with a total capacity of twenty four calls are configured to receive the organization's main number calls. These three directory numbers have to be specified in the Main Number call queue. Button 6, 7 and 8 receive the customer service calls. As octal-channel directory numbers, each of them can receive eight calls.

Ephone example

```
ephone-2 Mac:0013.C307.E9C0 TCP socket:[11] activeLine:0 REGISTERED in SCCP ver
6 and Server in ver 5
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0 caps:7
IP:192.168.1.5 50179 Telecaster 7960  keepalive 132940 max_line 6
button 1: dn 4  number 4300 CH1   IDLE        CH2   IDLE
button 2: dn 5  number 4301 CH1   IDLE
button 3: dn 6  number 4302 CH1   IDLE    CH2   IDLE   CH3   IDLE   CH4   IDLE CH5   IDLE
CH6   IDLE   CH7   IDLE   CH8   IDLE
button 4: dn 43 number 4304 CH1   IDLE    CH2   IDLE   CH3   IDLE   CH4   IDLE CH5   IDLE
CH6   IDLE   CH7   IDLE   CH8   IDLE
button 5:
button 6: dn 44  number 4306 CH1   IDLE    CH2   IDLE   CH3   IDLE   CH4   IDLE CH5   IDLE
CH6   IDLE   CH7   IDLE   CH8   IDLE
button 7: dn 45 number 4307 CH1   IDLE    CH2   IDLE   CH3   IDLE   CH4   IDLE CH5   IDLE
CH6   IDLE   CH7   IDLE   CH8   IDLE
button 8: dn 46 number 4308 CH1   IDLE    CH2   IDLE   CH3   IDLE   CH4   IDLE CH5   IDLE
CH6   IDLE   CH7   IDLE   CH8   IDLE
```

Username: john Password: cisco
Tapi client information

4.8.1.6 Example of Operator Console Plus Backup Position

Primary Operator

Button 1: 4300 (dual) ← Attendant Personal Number

Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)

Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ← Customer Service Calls
Button 8: 4308 (octal)

Backup operator

Button 1: 4310 (dual) ← Attendant Personal Number
Button 2: 4311 (dual)

Button 3: 4312 (octal)
Button 4: 4313 (octal)← Main Number Calls
Button 5: 4314 (octal)

Button 6: 4315 (octal)
Button 7: 4316 (octal) ← Customer Service Calls
Button 8: 4317 (octal)

Figure 4-4 Example Queue Configuration for Attendant and Backup

The example queue configuration above shows the IP phone directory numbers for two attendants: the primary attendant and the backup attendant. The first directory number from the primary attendant phone and the first two directory numbers from the backup attendant phone serve as the attendants' personal numbers. Each attendant assigns three octal directory numbers to receive main number calls. These six directory numbers should be added to the Main Number call queue and have the capacity of receiving forty eight calls in total. The example configuration routes the Customer Service calls to the last three directory numbers of each attendant IP phone. Therefore, six lines with the total of forty eight calls are configured to receive Customer Service calls.

4.8.2Distribution of Calls to Operators

Incoming calls need to be routed to the appropriate extension numbers on the operator's phone. When there are multiple operators, the router hunt groups can be used to route these calls based on operator availability (available to take calls and not busy on a call)

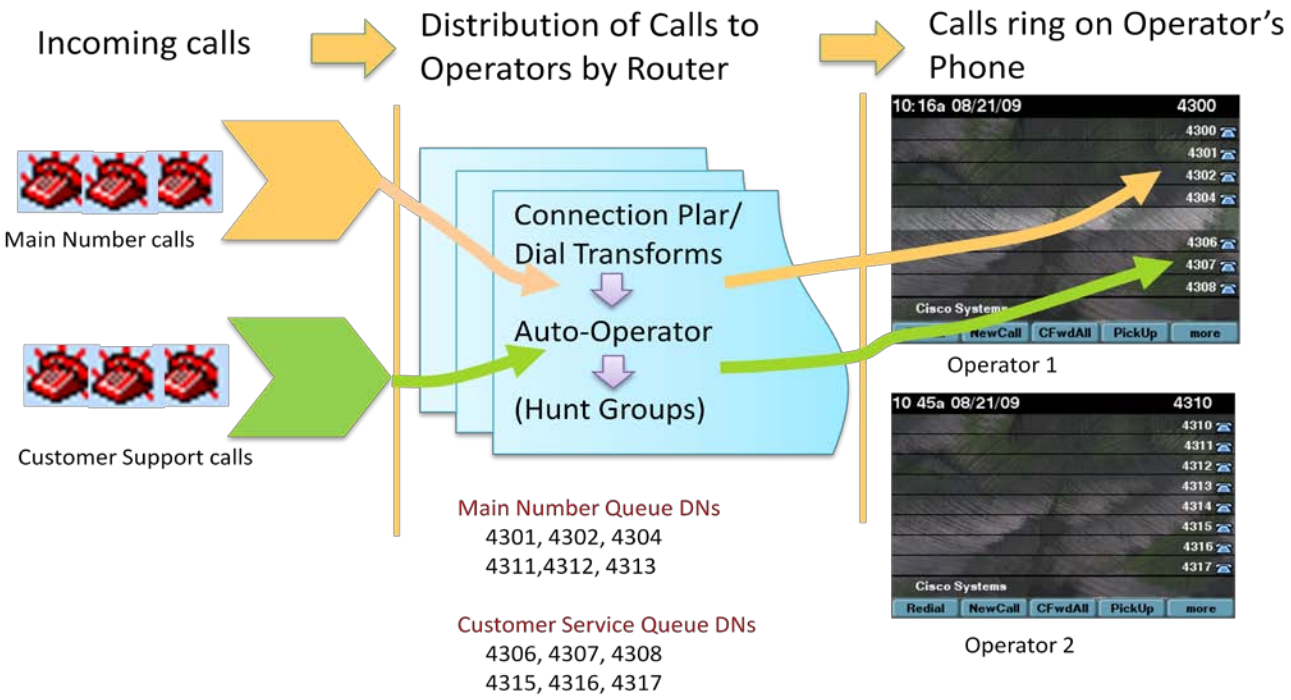


Figure 4-5 Distribution of Calls to the Operator Positions

4.8.3Operator Incoming Call Queue

An Incoming Call Queue is a grouping of some of the directory numbers in the attendant's IP phone so that they can be given uniform call handling treatment. A Call Queue is comprised of a list of directory numbers that are on the attendant's phone. The directory number can be octal, dual or single channel numbers.

An Incoming Call Queue has the following attributes:

Each queue has:

1. Name: A descriptive label for the calls directed to that queue.

2. Priority level: The priority level (1-5 with one being the highest) determines the order in which the calls are answered.

3. Greeting text: Provides attendants with the text for how the call should be answered.

4. Timeout value: This value provides visual feedback to the attendants for how long the calls have been waiting.

5. Busy and night routing numbers: When the attendant is busy or unavailable, the attendant directory numbers can be forwarded to these numbers.

Calls requiring similar attendant call treatment should be routed to one call queue. For example, the organization's main number calls should be routed to the directory numbers in the Main Number queue and the Customer Service calls to the Customer Service queue directory numbers.

The incoming call queue displays only the unanswered ringing calls. For each call, it can display the calling number, name (if available) and duration of the call.

If the call is in the queue for longer than the timeout period, the icon turns red to indicate this condition.

4.8.4Hunt-group based Call Queues

The directory numbers in an attendant call queue can belong to a hunt group. This is typically the configuration where there are multiple attendant positions. The hunt group distributes the calls to the different attendants. When the attendant is in the 'Available' state, the attendant is automatically logged into the hunt groups. When they are busy or unavailable, the attendants are logged out of the hunt groups.

The Cisco CME hunt group should be configured with the following options to support the routing of the calls to the attendants.

Cisco CME hunt-group properties for attendant call routing:

1. One or more directory numbers from each attendant's phone should be added to the hunt group list.

2. The hunt group should be setup to route the calls to support the following requirements:

    a) Allow all logged-in attendants to uniformly share the calls. The hunt group should be setup for 'Peer' or round-ribbon call routing.

    b) Support a primary and backup attendant position. For this, the hunt group should be configured with 'sequential' routing with the primary attendant's directory numbers first in the list followed by the backup attendants' directory number.

    c) Multiple hunt groups can be configured one for each attendant call queue.

    d) The hunt groups can be preceded by an auto-attendant to route the calls to the selected call queue.

4.8.5Queues for Multiple Operators

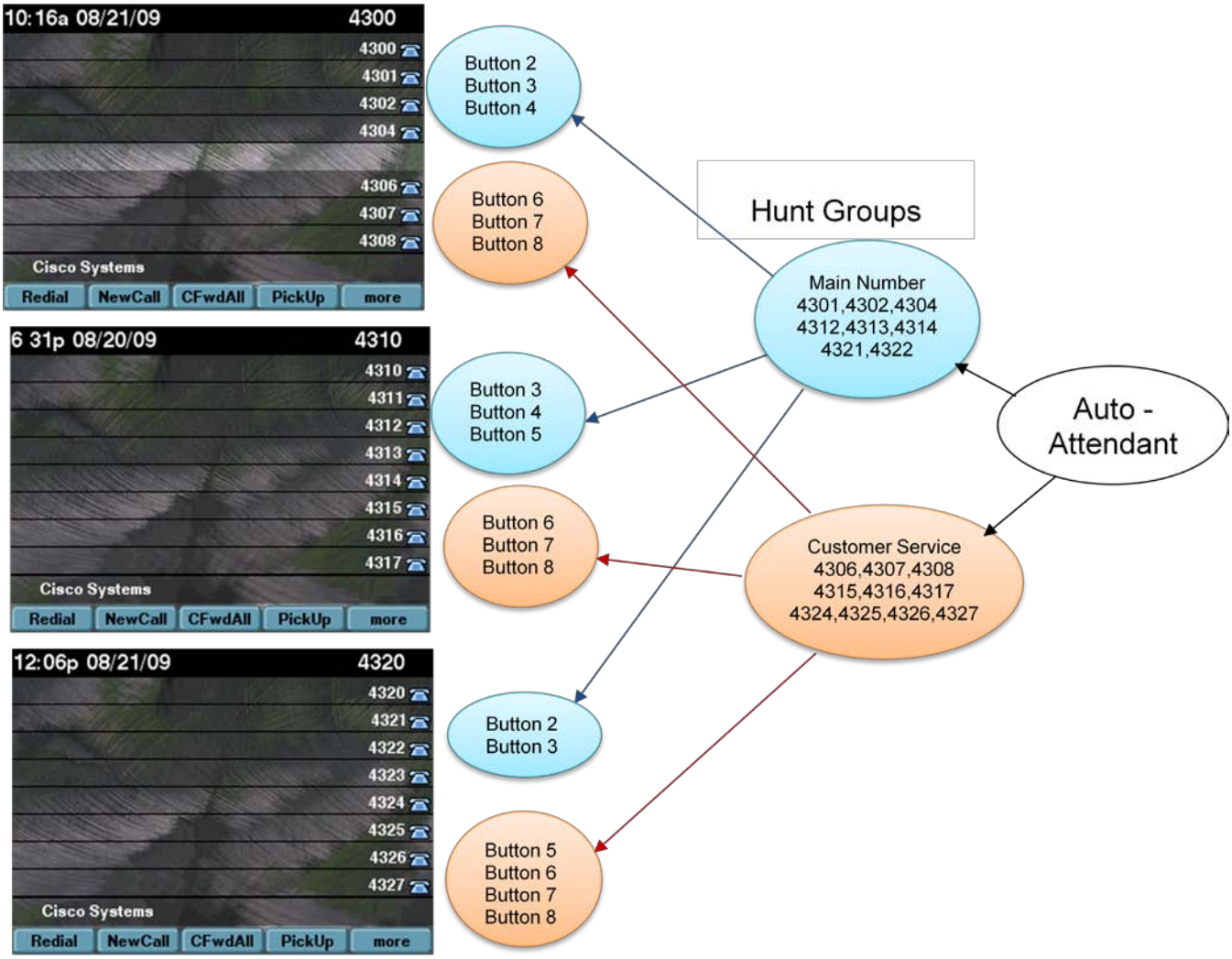


Figure 4-6 Example Queue Configuration for Multiple Operators

In the example above, incoming calls to the organization are routed through an auto-attendant to the Main Number and Customer Service queues. Those queues are served by three attendants. The Main Number hunt group has eight directory numbers from the three attendant positions. The Customer Service hunt group has ten directory numbers from the attendant IP Phones.

The queues for the Main Number and Customer Service have to be configured with the respective directory numbers as a part of the attendant queue configuration. Calls are only delivered to the attendants that are logged in.

4.8.5.1 Hunt Group Design Consideration

The router ephone-hunt group can be used to direct the incoming calls to the operators. The factors should be considered when configuring the hunt groups:

4.8.5.1.1 Type of Hunt Algorithm

The ephone-hunt support three types of hunt algorithms – Peer, Sequential and Longest-Idle.

Sequential: The search for the idle hunt number always starts from the first number in the list of hunt numbers

Peer: The search for an idle hunt number is started from the last number in the list to which the call was delivered

Longest-Idle: The search starts with the number that has been idle the longest -time.

Deployments that are primary and back operator positions, where the back operator is there to handle the overflow and when the primary operator is not available to take calls, the Sequential Hunting Algorithm should be specified.

Deployments with multiple operators, or where both operators share the incoming call load equally, the Peer or Longest-Idle Hunt Algorithms can be specified.

4.8.5.1.2 Order of the Hunt List Numbers

The order of the numbers in the list is significant together with the algorithm. Numbers from each operator should be alternately listed for the Peer Algorithm, but for Primary and Backup you may want to list all the primary numbers first and then the backup operators numbers.

4.8.5.1.3 Timeouts

Max-Timeout: If the call rings longer than this timeout it is sent to the final number specified in the hunt group configuration. The ‘timeout’ value is used to pullback a call from a hunt number if the call is not answered within that time.

4.8.5.1.4 Final Number

If no operator is logged in to the hunt group or if all hunt numbers are busy or in the event of final timeout, the call is sent to the Final Number. The Final Number is the Busy/Night routing number for the hunt group-based queues.

4.8.5.2 Example of Main Number Hunt Group Configuration

```
!
ephone-hunt 24 peer
 pilot 4200
 list 4301, 4311, 4321, 4302, 4312, 4322, 4304, 4313
 final 4250
 preference 1
 max-timeout 30
 timeout 10, 10, 10, 10, 10, 10, 10, 10, 10
 description "Main Number Call Queue group"
!
```

4.8.6 Busy and Night Service Routing

The routing for the incoming calls when the operator is busy or unavailable/off hours needs to be configured. The configuration options are different for deployments using hunt groups versus where calls terminate directly at the operator's phone.

When the operators make themselves available, busy or unavailable, the CallConnector software will log out of the operator hunt groups and set call forwards for the non-hunt-group (local) queues.

Note This automatic setting can be disabled from the Call Queue toolbar.

When the hunt groups are used to distribute the calls to the operators, the busy and unavailable numbers have to be configured for the hunt group.

For other call queues, the busy and unavailable forward numbers can be configured when the queues are setup.

The Cisco Router night service feature should be setup to route calls during off-hours.

4.8.7 Park Numbers

The Call Park feature requires the park numbers (DN) to be configured. These 'park slots' need to be configured on the router. During the operator configuration, all or some these park numbers can be allocated for operator use.

4.8.7.1 Example of Park Ephone-DN

```
!
ephone-dn  372
 number 4999
 park-slot timeout 15 limit 5
 name Operator Park1
!
!
```

4.8.8 Page Numbers

If overhead/zone paging is in use, these directory numbers need to be configured in the router and selected as page numbers during the Operator setup.

4.9 Setting up Cisco Router Hardware Conferencing

This section provides the summary steps for setting up hardware conferencing on the Cisco router. Please refer to the document Cisco Smart Communications Manager Express System Administrator Guide for more details.

4.9.1.1 Prerequisites

- Cisco 4.1 or a later version
- You must have a PVDM2-8, PVDM2-16, PVDM2-32, or PVDM2-64 high-density packet voice digital signal processor module hosted on the motherboard or on a module such as the NM-HDV2 or NM-HD-2VE.
- For Cisco Smart IP Phone 7985, firmware version 4-1-2-0 or a later version

4.9.1.2 Restrictions

- The maximum number of meet-me conference parties is 32 for one DSP using the G.711 codec and 16 for the G.729 codec.
- A participant cannot join more than one conference at the same time.
- Ad hoc conferencing for more than three parties (hardware-based) is not supported on the Cisco Smart IP Phone 7906 and 7910 and Cisco Smart IP Phone 7914 Expansion Module.
- Ad hoc conferencing for more than three parties is not supported on Cisco Smart IP phones running SIP.
- Hardware-based ad hoc conferencing does not support the local-consult transfer method (transfer-system local-consult command).

4.9.2 Enabling DSP Farm Services for a Voice Card

To enable DSP farm services for a voice card to support multi-party ad hoc and meet-me conferences, perform the following steps.

4.9.2.1 Summary Steps

enable
configure terminal
voice-card *slot*
dsp services dspfarm
exit

4.9.3 Configuring Join and Leave Tones

To configure tones to be played when parties join and leave ad hoc and meet-me conferences, perform the following steps for each tone to be configured.

4.9.3.1 Summary Steps

enable
configure terminal
voice class custom-cptone *cptone-name*
dualtone conference
frequency frequency-1 [frequency-2]

cadence {cycle-1-on-time cycle-1-off-time [cycle-2-on-time cycle-2-off-time] [cycle-3-on-time cycle-3-off-time] [cycle-4-on-time cycle-4-off-time]} | continuous
end

4.9.4 Configuring SCCP for Cisco

To enable Skinny Client Control Protocol (SCCP) on Cisco , perform the following steps:

4.9.4.1 Summary Steps

enable
configure terminal
sccp local interface-type interface-number [port port-number]
sccp ccm {ip-address | *dns*} identifier *identifier-number* [priority *priority*] [port *port-number*] [version *version-number*]
sccp ccm group *group-number*
bind interface interface-type interface-number
exit
sccp
exit

4.9.5 Configuring the DSP Farm

To configure the DSP farm profile for multi-party ad hoc and meet-me conferencing, perform the following steps.
Note: The DSP farm can be on the same router as the Cisco or on a different router.

4.9.5.1 Summary Steps

enable
configure terminal
dspfarm profile *profile-identifier* conference
codec {*codec-type* | pass-through}
conference-join custom-cptone *cptone-name*
conference-leave custom-cptone *cptone-name*
maximum conference-party *max-parties*
maximum sessions *number*
associate application sccp
end

4.9.6 Associating Cisco with a DSP Farm Profile

To associate a DSP farm profile with a group of Cisco routers that control DSP services, perform the following steps.

4.9.6.1 Summary Steps

enable
configure terminal
sccp ccm group *group-number*
associate ccm identifier-number priority priority-number
associate profile *profile-identifier* register *device-name*
end

4.9.7 Enabling Multi-Party Ad Hoc Conferencing

To allow multi-party ad hoc conferences with more than three parties and meet-me conferences, perform the following steps.

Note: Configuring multi-party ad hoc conferencing in Cisco disables three-party ad hoc conferencing.

4.9.7.1 Summary Steps

enable
configure terminal
telephony-service
conference hardware
sdspfarm units *number*
sdspfarm tag number device-name
sdspfarm conference mute-on *mute-on-digits* mute-off *mute-off-digits*
end

4.9.8 Configuring Ad Hoc Conferencing Numbers

To configure numbers for multi-party ad hoc and meet-me ad hoc conferencing, based on the maximum number of conference participants you configure, perform the following steps. Ad hoc conferences require four extensions per conference, regardless of how many extensions are actually used by the conference parties.

Note: Ensure that you configure enough directory numbers to accommodate the anticipated number of conferences. The maximum number of parties in a multi-party ad hoc conference on an IP phone is eight; the maximum on an analog phone is three.

4.9.8.1 Summary Steps

enable
configure terminal
ephone-dn *dn-tag* [dual-line]
number *number* [secondary *number*] [no-reg [both | primary]]
conference {ad-hoc | meetme}
preference preference-order [secondary secondary-order]
no huntstop [channel]
end

4.9.9 Configuring Conferencing Options for a Phone

To configure a template of conferencing features such as the add party mode, drop party mode, and soft keys, for multi-party ad hoc, and meet-me conferences and apply the template to a phone, perform the following steps.

Note: The following commands can also be configured in ephone configuration mode. Commands configured in ephone configuration mode have priority over commands in ephone-template configuration mode.

4.9.9.1 Restrictions

The ConfList (including the Remove, Update, and Exit soft keys within the ConfList function) and RmLstC soft keys do not work on a Cisco Smart IP Phone 7902, 7935, and 7936.

4.9.9.2 Summary Steps

enable
configure terminal
ephone-template *template-tag*
conference add-mode [creator]
onference drop-mode [creator | local]
conference admin
softkeys connected [Acct] [ConfList] [Confrn] [Endcall] [Flash] [HLog] [Hold] [Join] [Park] [RmLstC] [Select] [Trnsfer]
softkeys hold [Join] [Newcall] [Resume] [Select]
softkeys idle [Cfwdall] [ConfList] [Dnd] [Gpickup] [HLog] [Join] [Login] [Newcall] [Pickup] [Redial] [RmLstC]
softkeys seized [CallBack] [Cfwdall] [Endcall] [Gpickup] [HLog] [MeetMe] [Pickup] [Redial]
exit
ephone phone-tag
ephone-template *template-tag*
end

4.10 Setup Direct Transfer to Voicemail

This section provides a sample configuration for enabling direct transfer to CUE/Voicemail of a user by dialing a speed-dial code. It details how a dial-peer can be created to setup a call to a CUE AA and then send digits for identifying a voicemail mailbox.

4.10.1.1 Dial plan

Before configuring Cisco router and CUE, you should plan your dial plan for Cisco router IP phones, CUE and bulk speed-dial on Cisco router. The following is a sample of numbers that need to be defined before configuring the system.

Name	Number	Description
IP Phones (with Voicemail)	1001, 1002, 1003	Ephone-dn numbers of IP phones that have a voicemail mailbox.
Bulk speed-dial file for direct access to VM	0	This is the reference to a file that contains entries for bulk speed-dial codes. This is used in conjunction with bulk speed-dial prefix and list entry to address a particular number
CUE AA pilot for direct transfer to VM script	6500	Trigger on CUE for direct transfer to VM script.

Table 4-9 Example of numbers that need to be defined for CUE-AA

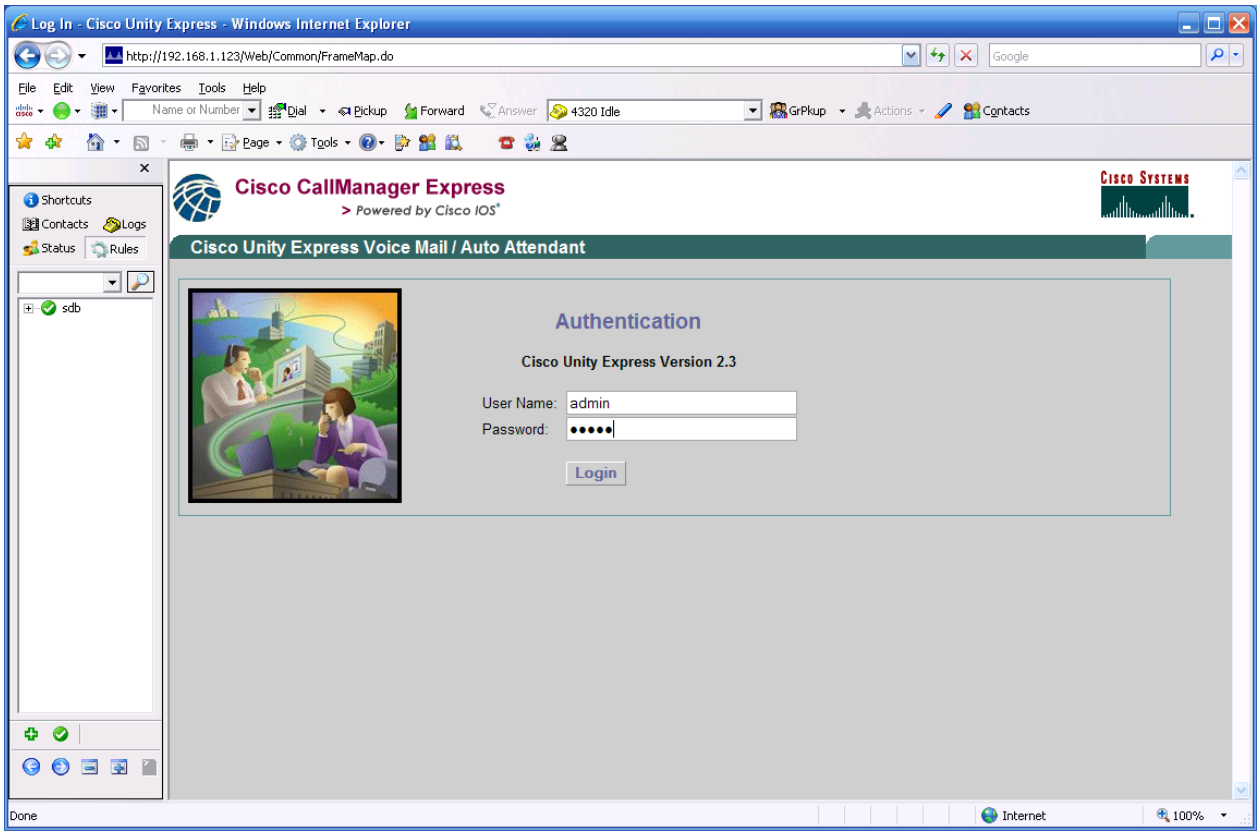
4.10.1.2

4.10.2 To Setup the Transfer-to-Voicemail Script

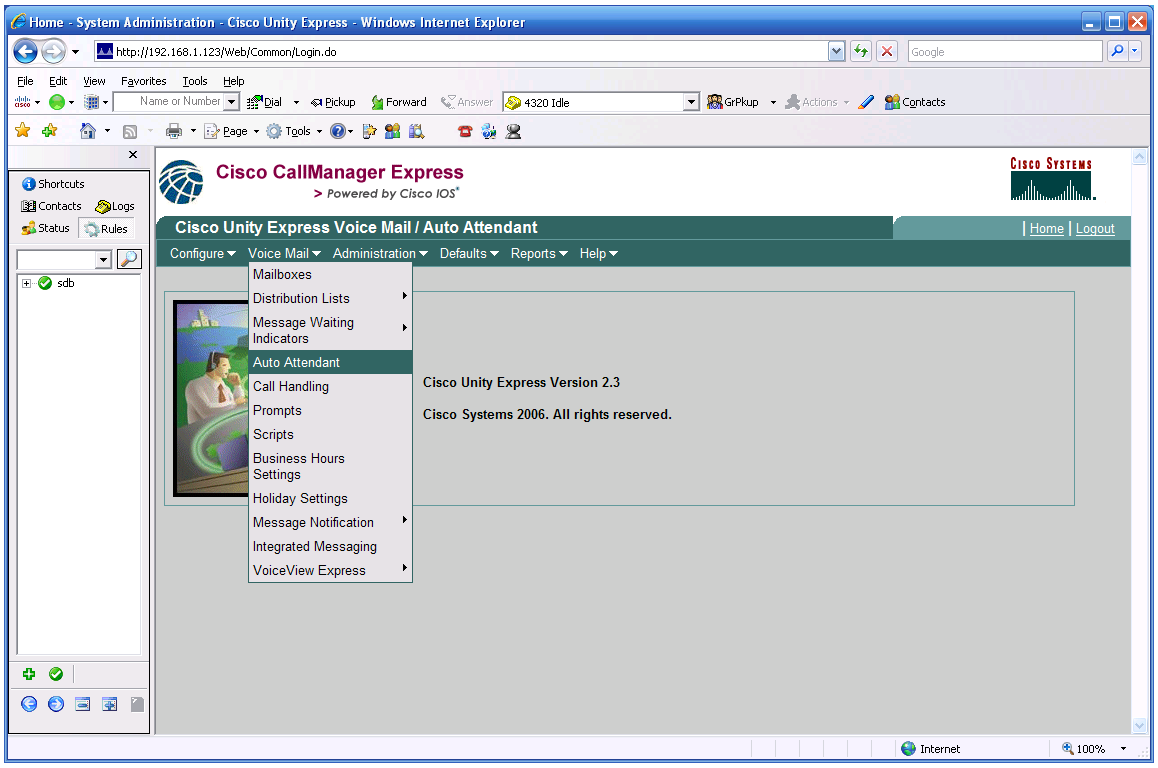
Open the Cisco Unity Express (CUE) administration page. In this example go to the web page: http://192.168.1.123\

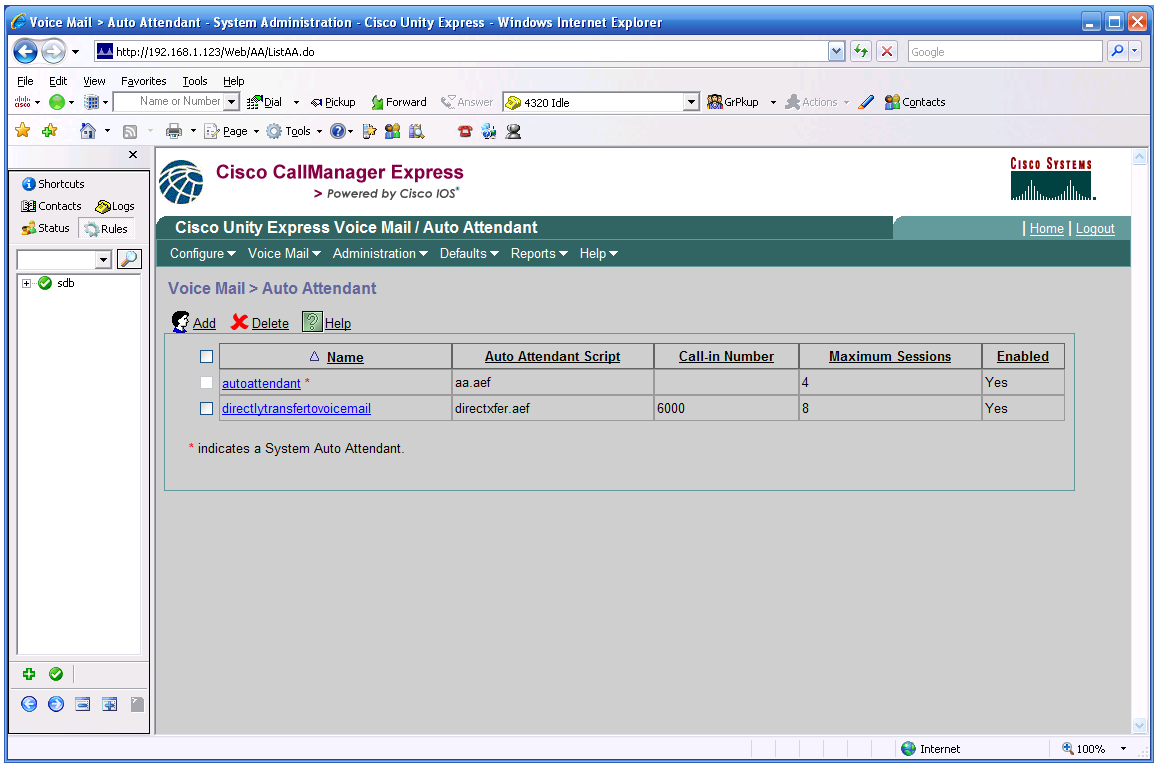
Login as the administrator:

Username: admin
Password: admin

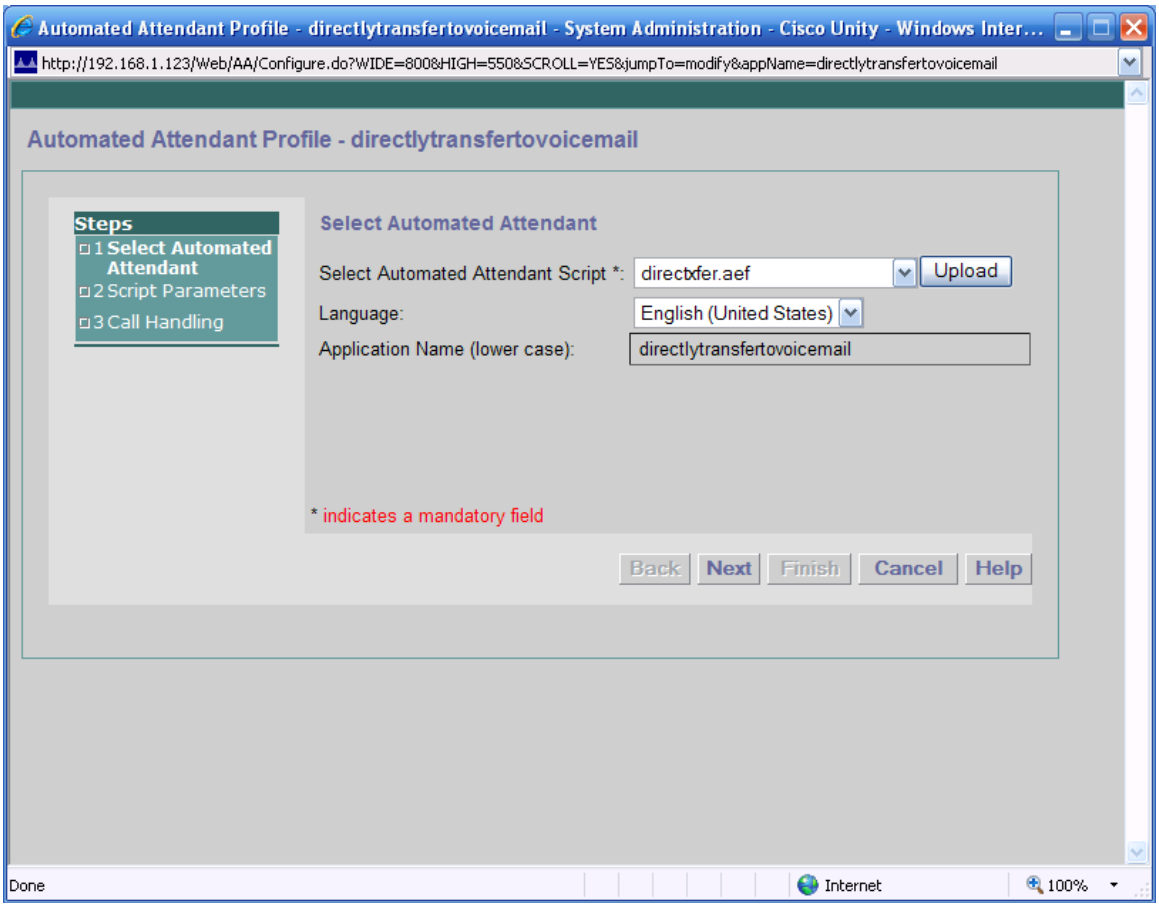


From the Voice Mail menu, select Auto Attendant. The Auto-Attendant pages will display. Click on the Add button to add the DirectTransfertoVoiceMail script. To update or make changes, you can click on the script name.

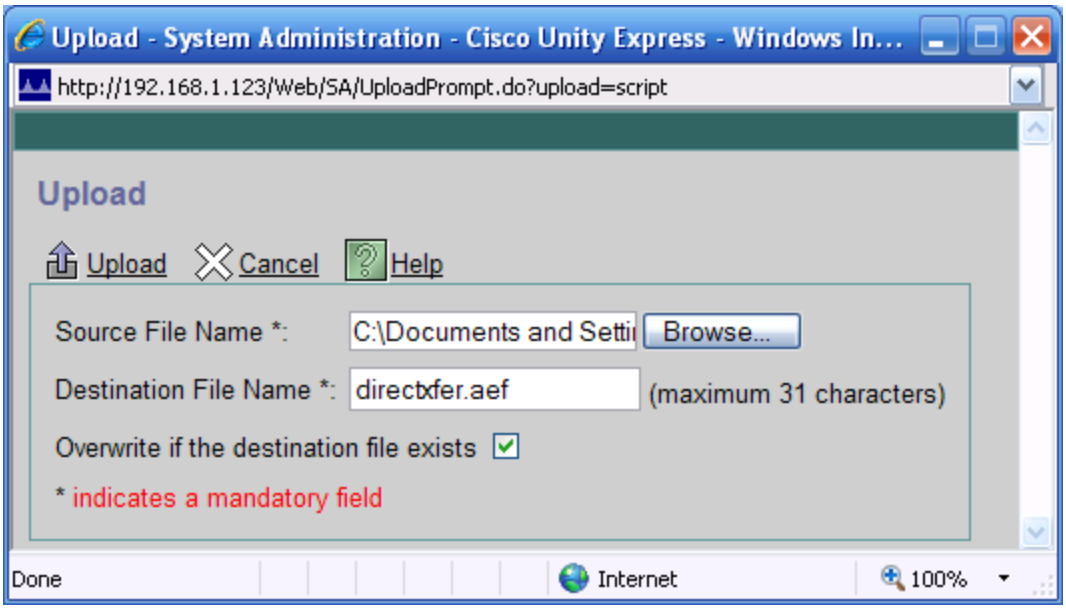


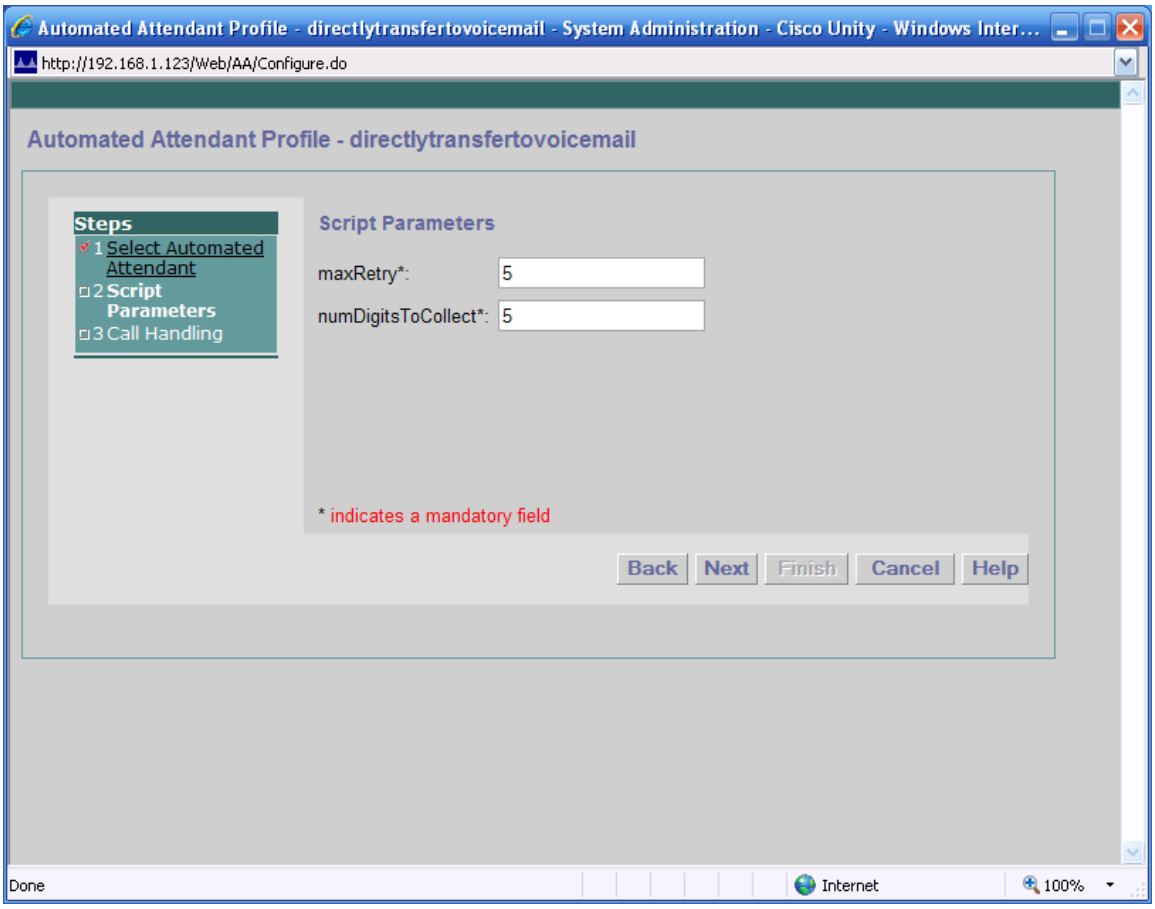


Click on the directlytransfertovoicemail



Click Upload the new script, browse to select the script file and click on upload.





Set the number of digits in the extension. Note CUE will timeout and drop the call after the max re-tries.
Note: Call-in number must be the same as the directory number (DN) on the route point in this case, 6000

4.10.3 Example of Dial-Peer for VM Transfer

```
dial-peer voice 10 voip
 destination-pattern 6...
 session protocol sipv2
 session target ipv4:192.168.1.123
 dtmf-relay sip-notify
 codec g711ulaw
 no vad
```

4.10.4 Verifying Hunt Groups

Use the **show running-config** command to verify your configuration. Ephone hunt group parameters are listed in the ephone-hunt portion of the output.

```
Router# show running-config
!
ephone-hunt 2 sequential
 pilot 4085551212
 list 621, *, 623
!
```

Use the **show ephone-hunt** command for detailed information about hunt groups, including dial-peer tag numbers, hunt-group agent status, and on-hook time stamps. This command also displays the dial-peer tag numbers of all ephone-dns that have joined dynamically and are members of the group at the time that the command is run.

```
Router# show ephone-hunt

Group 2
type: sequential
pilot number: 4085551212, peer-tag 20098
list of numbers:
123, aux-number A601A0200, # peers 1, logout 0, down 0
peer-tag dn-tag rna login/logout up/down
[20097 56 0 login up ]
622, aux-number A601A0201, # peers 3, logout 0, down 0
peer-tag dn-tag rna login/logout up/down
[20101 112 0 login up ]
[20100 111 0 login up ]
[20099 110 0 login up ]
623, aux-number A601A0202, # peers 3, logout 0, down 0
peer-tag dn-tag rna login/logout up/down
[20104 122 0 login up ]
[20103 121 0 login up ]
[20102 120 0 login up ]
*, aux-number A601A0203, # peers 1, logout 0, down 1
peer-tag dn-tag rna login/logout up/down
[20105 0 0 - down]
*, aux-number A601A0204, # peers 1, logout 0, down 1
peer-tag dn-tag rna login/logout up/down
[20106 0 0 - down]
```

CHAPTER

5

5 Guides, License & Maintenance

The Configuration Manager Guides, License & Maintenance section provides the Navigation Guides for different configuration tasks including configuring the CallConnector Server and Standalone Operator, managing the CallConnector Users, configuring a new operator position and the operator call queues. It also allows the administrator to activate and manage the licenses for the CallConnector server and client applications, perform CallConnector database maintenance, send configuration data to the CallConnector Users, report problems, and view server information.

This chapter provides instructions on how to perform these tasks. The following topics are discussed.

Navigating the Guides, License & Maintenance Windows -	Provides an overview of the Guides, License & Maintenance graphical interface including the toolbar, folders and configuration pages.
License Management -	Describes how to activate and manage the licenses for the CallConnector Server and Advanced Services, CallConnector Operator and Standalone Operator, and User Access License.
Maintenance -	Describes how to perform database maintenance, configure SMTP connection parameters, send configuration information to the CallConnector Users, and report technical issues to the Cisco TAC team.
System Status -	Displays the version of the host OS and the components of the installed CallConnector product as well as the installation folder.

5.1 Navigating the Guides, License & Maintenance Window

This section describes the methods for opening the pages associated with the navigation guides, registering the CallConnector software, and maintaining the CallConnector Server. These pages provide support for browsing through the configuration guides for the CallConnector Server and Standalone Operator, activating the licenses for the CallConnector Server, Client and Operator, maintaining the CallConnector databases, setting up the connection to the email server to report problems and communicate with the CallConnector users, and checking the CallConnector system status.

The toolbar buttons can be used to jump to a particular page. Alternatively, you can also select a folder and an item within the folder to go to that page. The figure below shows the Guides, License and Maintenance section of the Configuration Manager – including 1) menu bar to select the Guides, License and Maintenance, 2) toolbar shortcuts to jump to a folder 3) folders and item list and 4) the buttons and links to access the features of the page such as jumping to a particular configuration step or running the navigation wizard.

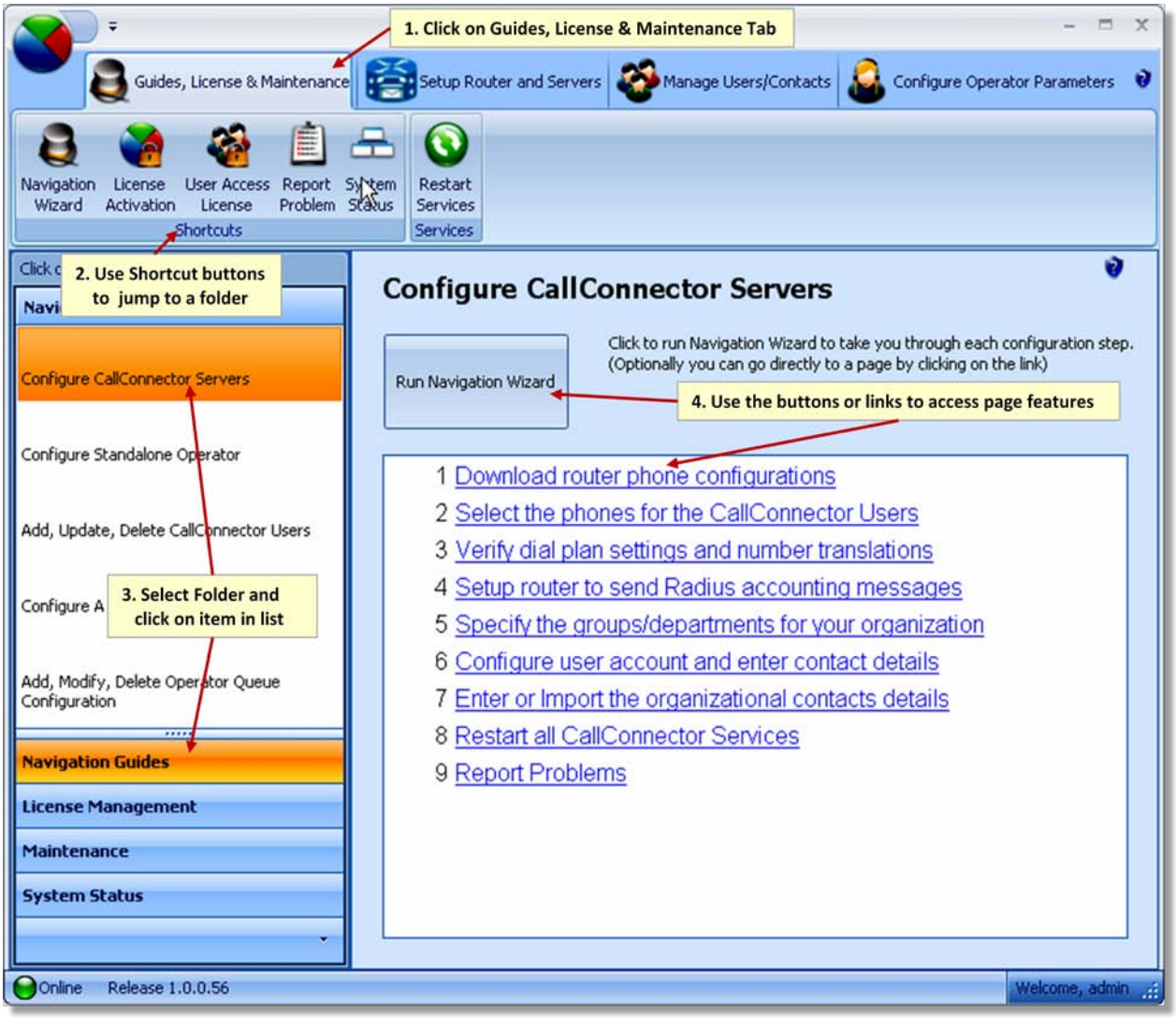


Figure 5-1 Guides, License & Maintenance Window

5.1.1Guides, License & Maintenance Toolbar

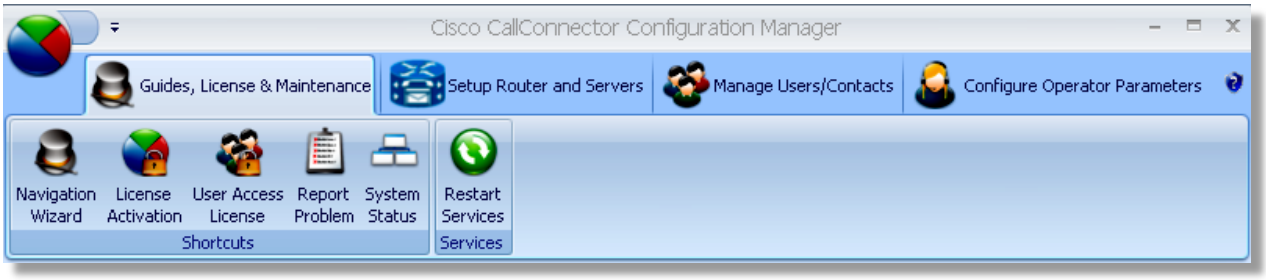


Figure 5-2 Guides, License and Maintenance Toolbar

Toolbar Button	What does the button do
Navigation Wizard	Displays the navigation wizard for configuring the CallConnector Server.
License Activation	Allows the administrator to activate the licenses of installed CallConnector products.
User Access License	Displays the User Access License page. From this page, the administrator can view available user access licenses, reserve, grant or deny the licenses to a particular client machine.
Report Problem	Provides the email template to report technical problems to Cisco CallConnector email alias.
System Status	Displays the versions of the CallConnector servers.
Restart Services	First this will stop all the CallConnector server applications then it will restart them all.

Table 5-1 Guides, License & Maintenance Toolbar Buttons

Note

The display of the toolbar can be toggled by double-clicking on the Guides, License & Maintenance tab.

5.1.2Guides, License & Maintenance Folders

The Guides, License & Maintenance section is comprised of a number of configuration and maintenance pages organized in four folders. These folders and their pages can be accessed from the folder list window. The selected folder is highlighted in orange. Click on a folder to view the list of items, then an item in the folder list to view and make changes to those parameters.

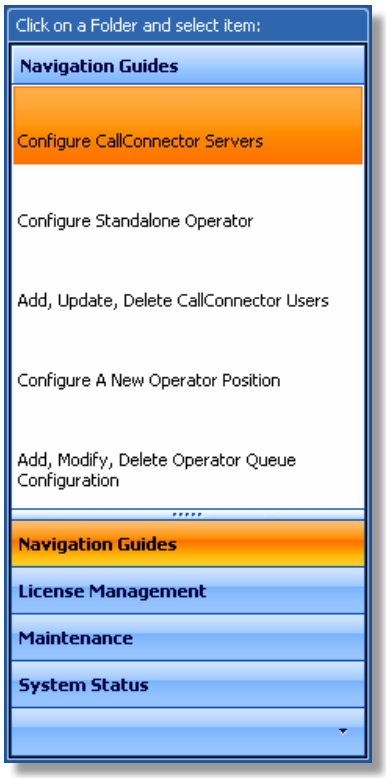


Figure 5-3 Guides, License and Maintenance Folders

Navigation Guides: The Navigation Guides provides the administrator a list of navigation guides for different configuration tasks. Clicking on a task will display the list of configuration steps and the navigation wizard for the selected task.

License Management: Displays licenses of the CallConnector products that are being used in the organization. The administrator can activate and manage the licenses for different CallConnector server and client applications. Both trial and full version can be activated for the CallConnector Server. The administrator can also manage the list of user access licenses, reserve, grant or deny a user access license to a particular CallConnector user.

If the CallConnector Standalone Operator is installed, only CallConnector Server Standalone license is required for both the server and client side. Other licenses are not needed and therefore, will not be supported.

Maintenance: Allows the administrator to maintain the CallConnector databases, set up the parameters to connect to the SMTP server that can be used to send emails to CallConnector users and report problems.

System Status: Displays the versions of the CallConnector servers installed in the Server PC.

Folder	Folder Item	Configuration Page
Navigation Guides	Configure CallConnector Servers	Displays the steps to configure the CallConnector Servers. This page is not available if the CallConnector Standalone Operator version is installed.
Navigation Guides	Configure Standalone Operator	Displays the steps to configure the CallConnector Standalone Operator.
Navigation Guides	Add, Update, Delete CallConnector Users	Displays the steps to add, delete or update the CallConnector Users. The CallConnector Users are the employees that have a CallConnector account and can log in using their CallConnector application.
Navigation Guides	Configure A New Operator Position	Displays the configuration steps for a new operator.
Navigation Guides	Add, Modify, Delete Operator Queue Configuration	Shows the steps to configure queues for the operators. Queues are usually used to monitor and direct calls.
License Management	License Activation	Allows the administrator to keep track of and activate the licenses of the installed CallConnector products.
License Management	User Access License	Maintain user access licenses for the CallConnector clients. This feature is only available if you install the CallConnector Server.
Maintenance	Database Maintenance	Performs maintenance tasks on the CallConnector databases including compact, backup and restore. The administrator can also dump call logs that are older than a period of time.
Maintenance	Setup Send Email Parameters	Specifies the connection parameters of the SMTP server that can be used to send emails.
Maintenance	Send Email To Users	Selects and sends the configuration data to the CallConnector Users.
Maintenance	Send A Problem Report	Provides a template to report problems to the Cisco CallConnector email alias.
System Status	Server Information	Displays the version of the Windows operating system along with the installed CallConnector Servers. The path to the installation folder is also provided.

Table 5-2 Guides, License & Maintenance Folders and Folder items

5.2 Navigation Guides

To facilitate the administrator with the configuration of the CallConnector Servers and Standalone Operator, the Cisco CallConnector Configuration Manager provides the Navigation Guides that guide the administrator through the essential configuration steps.

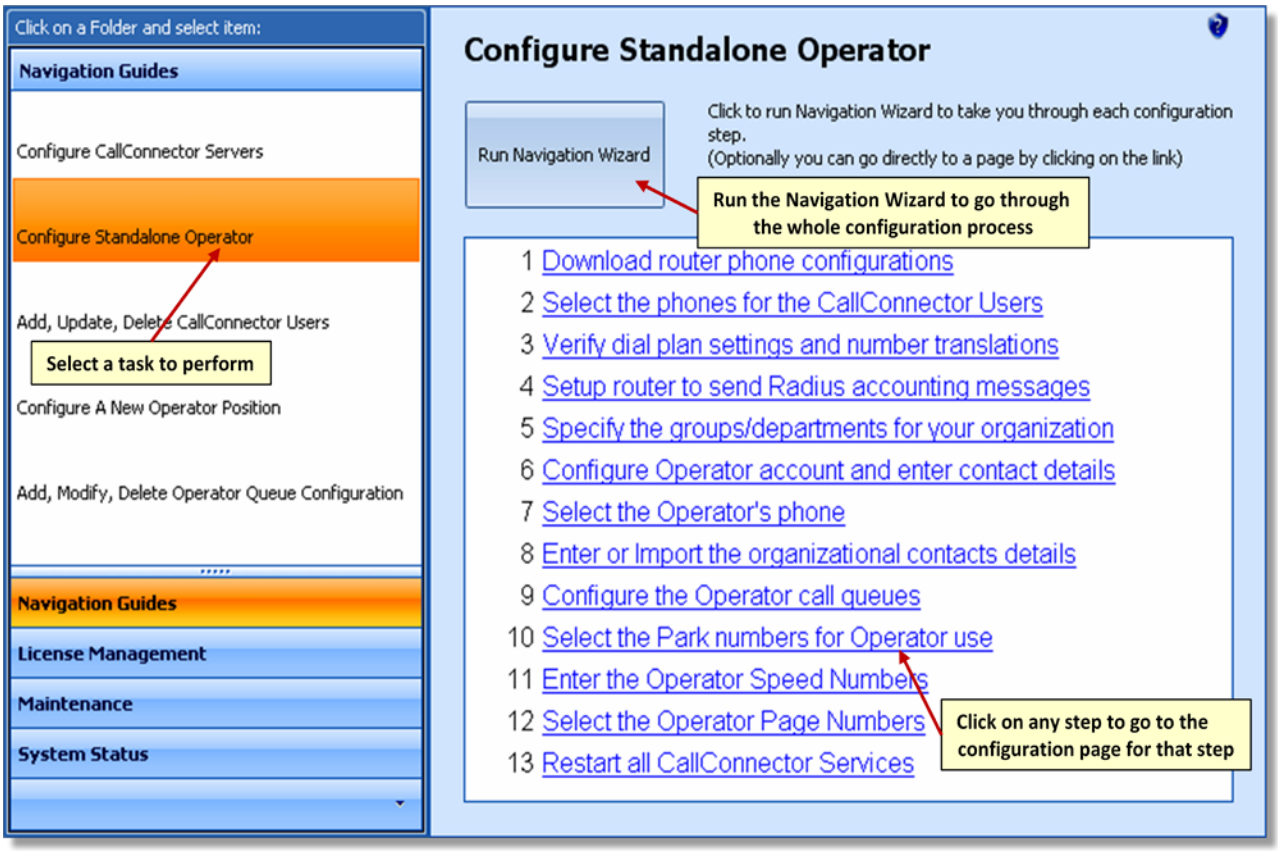


Figure 5-4 **5-6**Navigation Guides

The Navigation Guides provide two different ways to approach the configuration steps:

Navigation Wizard: The Navigation Guides contains the Navigation Wizard that walks the administrator through the whole configuration process. When you go from one step to another, the wizard takes you to the corresponding configuration page and explains what you should do on that page.

Quick Access to the Steps: The Navigation Guides provides quick access to any step in the configuration process without having to run through the whole configuration process by displaying the list of steps and the links to the configuration page of each step. Therefore, the administrator can come back to the configuration process anytime and make the changes accordingly.

5.2.1Using the Navigation Wizard

After you install the CallConnector Server or Standalone Operator and run the Configuration Manager for the first time, the Navigation Wizard will pop up and guide you through the whole configuration process for the installed version. You can also click on the Run Navigation Wizard button of the Navigation Guides page after selecting the task to perform. The Navigation Guides for the selected task will be displayed.

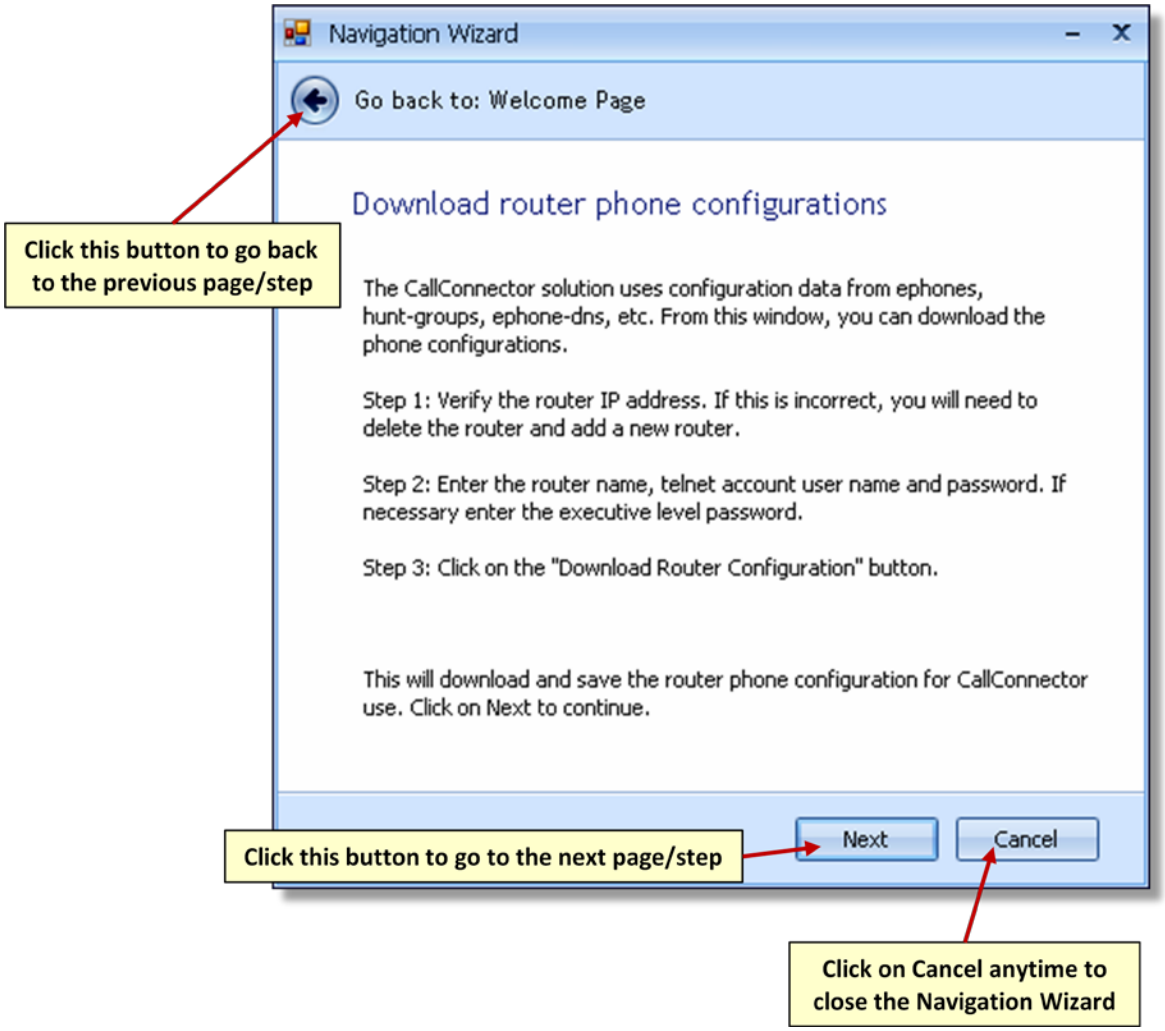


Figure 5-5 Navigation Wizard

When the Navigation Wizard is launched, it will first list all the configuration steps. You can click on Next to go to the first step. The Navigation Wizard will display the instructions and the page where you can perform the configuration of the shown step. At each step, you have the following options:

Option	Description
Go back to the previous page/step	Display the instructions for the previous page/step and the page to perform the configuration of that step.
Next	Display the instructions for the next page/step and the page to perform the configuration of that step.
Cancel	Close the Navigation Wizard. You can also click on the Close button on the top-right corner of the screen to close the wizard. If you want to launch the wizard again, you have to go back to the Guides, License & Maintenance tab, select the task to perform and click on the Run Navigation Wizard button again.
Minimize the Navigation Wizard	Since the Navigation Wizard leads you to the configuration page, you may want to minimize the wizard so that you can have the full view of the configuration and still have access to the Navigation Wizard. Click on the Minimize button at the top-right corner of the screen to minimize the wizard. The Navigation Wizard will be displayed on the bottom-left corner of your Windows. Click on the Restore button to resume the Navigation Wizard, or the Close button to close it.

Table 5-3 Navigation Wizard Options

5.2.2To Use the Navigation Wizard

Step 1 On the Guides, License & Maintenance tab, select the Navigation Guides folder.

Step 2 Select a task to perform.

Step 3 Click on Navigation Wizard. The list of steps will appear.

Step 4 Click on Next to go the next step and follow what is instructed on the screen.

Step 5 After you complete all the steps, click on Finish to close the wizard. You can also click on Go Home to see the list of steps and start over the process.

Step 6 During the configuration process, you can close the wizard anytime by clicking on Cancel.

5.2.3Accessing a Configuration Step

The Cisco CallConnector Configuration Manager allows the administrator to come back to the Navigation Guides at any point of time and perform a specific task. When you select a task under the Navigation Guides folder, the Configuration Manager displays the list of steps and the links to the configuration pages of all the steps. You can simply click on a step in order to go the configuration page of that step. See Figure 5.3 Navigation Guides.

5.2.4To Quickly Jump to a Specific Step

Step 1 On the Guides, License & Maintenance tab, select the Navigation Guides folder.

Step 2 Select the task to perform. The list of steps will display.

Step 3 Click on the step you want to do. The Configuration Manager will take you to the configuration page associated with that step.

Step 4 After the configuration, you have to go back to the Navigation Guides to continue with other steps.

5.2.5Configuring the CallConnector Server

The following steps should be performed in order to configure the CallConnector Servers:

Step 1 Download router phone configurations
Step 2 Select the phones for the CallConnector Users and Operators
Step 3 Verify dial plan settings and number translation rules
Step 4 Setup router to send Radius accounting messages
Step 5 Add Advanced Client Licenses (Required for than eight clients)
Step 6 Specify the groups/departments for your organization
Step 7 Configure user account and enter contact details
Step 8 Enter or Import contacts details for the directories
Step 9 Restart all CallConnector Services
Step 10 Report Problems

The table below summarizes the steps associated with the corresponding configuration pages and the chapter you can refer to for more information:

Step	Where to setup	Reference
Download router phone configurations	Setup Router & Servers → Manage Cisco Routers → Download Router Info	Chapter 6: Configuring CallConnector Servers
Select the phones for the CallConnector Users and Operators	Setup Router & Servers → Manage Cisco Routers → Download Router Info	Chapter 6: Configuring CallConnector Servers
Verify dial plan settings and number translation rules	Setup Router & Servers → Manage Cisco Routers → Dial Plans Settings	Chapter 6: Configuring CallConnector Servers
Setup Router to send Radius accounting messages	Setup Router & Servers → Setup Radius	Chapter 6: Configuring CallConnector Servers
Add Advanced Client Licenses	Guides, License & Maintenance →License Management	Chapter 5: Guides, License and Maintenance
Specify the groups/departments for your organization	Manage Users/Contacts → Group Management → Groups	Chapter 7: Manage Users & Contacts
Configure user account and enter their contact details	Manage Users/Contacts → Users and Contacts → CallConnector Users	Chapter 7: Manage Users & Contacts
Enter or Import contacts details for the directories	Manage Users/Contacts → Users and Contacts → Corporate Directory Contacts	Chapter 7: Manage Users & Contacts
Restart all CallConnector Services	Setup Router & Servers → Service Actions	Chapter 6: Configuring CallConnector Servers
Report Problems	Guides, License & Maintenance → Maintenance → Send A Problem Report	Chapter 5: Guides, License & Maintenance

Table 5-4 Configuration Steps for the CallConnector Servers

5.2.5.1 To Access the Navigation Guides for Configuring the CallConnector Server

Step 1 On the Guides, License & Maintenance tab, click on the Navigation Guides folder.

Step 2 Select Configure CallConnector Servers task. The Navigation Guides will display the steps for performing this task.

Step 3 Click on the Navigation Wizard to browse through the whole configuration process. Or click on a specific step to go to the configuration page for that step.

Note

This task is available only when you install the Cisco CallConnector Server.

5.2.5.2 Download router phone configurations

The CallConnector solution uses configuration data for ephones, hunt-groups, ephone-dns, etc on the router. From this window, you can download this information.

Step 1 Verify the router IP address. If this is incorrect, you will need to delete the router and add a new router.

Step 2 Enter the router name, telnet account user name and password. If necessary enter the executive level password (requires privilege level 15 access). Enter the CUE IP Address and CUE Port (default is 5060) for Visual Voice Mail access.

Step 3 Click on the **Download Router Configuration** button.

This will download and save the phone configuration for CallConnector use. To continue, click Next.

5.2.5.3 Select the phones for the CallConnector Users and Operators

The phones configured on the router are displayed in the list. Select the phones that will be used by the CallConnector Users and Operators.

Step 1 Click on the **checkbox** (in the first column) beside the phone to select that phone. (Click again to de-select)

Step 2 Select all the phones that will be connected to CallConnector. Phones should be selected for all Users and Operators.

Step 3 Click on the **Save Selected Phones** button to save your selection. (You can review and remove the selected phones from the **Selected Phones** tab)

To continue, click Next.

5.2.5.4 Verify dial plan settings and number translation rules

These parameters determine how a number is dialed or looked up in the directory by the CallConnector.

Step 1 Verify the Country and the Location and change if necessary (If the location is not defined, add or update from the **Location Management** section).

Step 2 Enter the number of digits in the Extension Length. If they are of different lengths, then add all the extension lengths separated by semi-colon (without spaces).

Step 3 Specify the digit that has to be dialed for outside numbers in the Dial-Out Prefix field. Click on **Save Router** button.

Step 4 Verify all commonly dialed numbers by entering them in the **Input** column of the **Click to add an input number** of the Verify Number Dialing table.

Step 5 If the numbers are processed incorrectly, then add Optional Number Translation Rules to pre-process the number before lookup or dialing.

To continue, click Next.

5.2.5.5 Setup router to send Radius accounting messages

The router needs to be setup to send the Radius accounting messages.

Step 1 For each router in the Radius Setup Status table, a check mark indicates that Radius parameters are setup correctly.

Step 2 Select the router that shows error and enter the Authentication Key and port (default port is 1646) and click on the **Update Radius** button.

Step 3 To verify that the CallConnector is able to receive Radius messages, click on **Start Monitor** button and make some calls. Received messages will be displayed in the window. Click on **Stop Monitor** button to stop. If prompted, click Yes to stop the Presence Server.

Step 4 You can check if the router is sending the Radius messages. Click on **Start Capture**, make some calls and then click on **Stop Capture**. The radius debug messages are displayed.

To continue, click Next.

5.2.5.6 Add Additional Advanced Client Licenses (Beyond the included eight)

The Server includes eight Advanced Client Licenses. You will need to purchase and activate the Advanced Client licenses for additional client seats. The Advanced Client licenses are available as sets of eight. You will receive a PAKID for each set of eight Advanced Client licenses you purchase.

Step 1 Enter the PAKID in the PAKID/Serial No: field in the Additional Client Licenses form on the right side of the License Activation page. (PLEASE NOT IN THE SERVER ACTIVATION FIELDS ON THE LEFT)

Step 2 Click on the Activate Client License button. (If you used the Off-Line or Advanced Licensing method for the CallConnector, then you must use the same method for the Advanced Client licenses by clicking on Advanced Client licensing Option button)

Step 3 The Results field will indicate “Success” or the failure reason if there is a problem.

Step 4 Click on the User Access License item in the License Management folder to view and verify the additional licenses you have just activated.

To continue, click Next.

5.2.5.7 Specify the groups/departments for your organization

The department/groups in your organization need to be created. You can add new groups, modify the default groups and remove groups that are not required.

Step 1 To create a new group, click on the **Add New Group** button in the toolbar. Enter the group name, publishing options, and click **Save**.

Step 2 To modify an existing group, select the group, change the group name and click on the **Save** button.

Step 3 To delete a group, select the group and click on the **Delete** button.

Step 4 If you do not want members from another group to view the presence information of the selected group, then click on that group's checkbox in the **Groups Not Allowed to View** table.

NOTE: Do not remove the Default group.

To continue, click Next

5.2.5.8 Configure user account and enter contact details

You'll need to add users. You can either manually add users or import users from CSV file, routers and Outlook contact folders.

To import users, click **Import->Users** button from the toolbar. To add a new User manually:

Step 1 Click the **Add New User** button in the toolbar.

Step 2 Enter the mandatory information fields first and last name, login name and password.

Step 3 Select the User's Group/Department from the list and the user type. Type can be Administrator, Manager, Operator and User.

Step 4 Fill in the contact information including the phone numbers, email/SMS addresses and the voice mail information.

Step 5 Click on the **Phone** tab and select the user's phone by clicking on the checkbox beside the ephone.

Step 6 From the **Co-Workers** tab, select their Manager, Assistant and Backup user names.

Step 7 Click on the **Save** button at the bottom of the page to apply the changes and add the user.

The user account will be created and the user will be added to the Available Users list. Note you will need to restart the CallConnector Services to make the changes available. To continue, click Next.

5.2.5.9 Enter or Import contacts details for the directories

Organizational and external contact can be added or imported.

Step 1 To add organizational contacts, click on the blank row with text **"Click to add new contact"**. Enter the information in each field. Click on **More** to add/edit the additional fields. Click on **Save** to write the information to the database.

Step 2 To modify, select an existing contact and click on **More** button, make the changes and click **Save**.

Step 3 To delete contacts, click on the checkboxes on the left column and click **Delete** button.

Step 4 To import the contact information, click on the **Import->Contacts** button in the toolbar or on the button below.

Step 5 Repeat these steps to add external directory contacts.

To continue, click Next

5.2.5.10 Restart all CallConnector Services

You need to restart the CallConnector Services for these changes to become available.

Step 1 Click on the Restart Services button below or click on the **Restart All Services** button in the toolbar.

To continue, click Next

5.2.5.11 Report Problems

If you encounter problems while using the CallConnector product, you can use the **Problem Report** in the **Maintenance** folder in **Guides, License, & Maintenance** section.

To continue, click Next

5.2.6 Configuring the CallConnector Standalone Operator

The following steps should be performed in order to configure the CallConnector Standalone Operator:

Step 1 Download router phone configurations
Step 2 Select the phones for the CallConnector Operators
Step 3 Verify dial plan settings and number translation rules
Step 4 Setup router to send Radius accounting messages
Step 5 Specify the groups/departments for your organization
Step 6 Configure Operator account and enter contact details
Step 7 Select the Operator's phone
Step 8 Enter or Import contacts details for the directories
Step 9 Configure the Operator call queues
Step 10 Select the Park numbers for Operator use
Step 11 Enter the Operator Speed Dial Numbers
Step 12 Select the Operator Page Numbers
Step 13 Restart all CallConnector Services

The table below summarizes the steps associated with the corresponding configuration pages and the chapter you can refer to for more information:

Step	Where to setup	Reference
Download router phone configurations	Setup Router & Servers → Manage Cisco Routers → Download Router Info	Chapter 6: Configuring CallConnector Servers
Select the phones for the CallConnector Operators	Setup Router & Servers → Manage Cisco Routers → Download Router Info	Chapter 6: Configuring CallConnector Servers
Verify dial plan settings and number translation rules	Setup Router & Servers → Manage Cisco Routers → Dial Plans Settings	Chapter 6: Configuring CallConnector Servers
Setup router to send Radius accounting messages	Setup Router & Servers → Setup Radius	Chapter 6: Configuring CallConnector Servers
Specify the groups/departments for your organization	Manage Users/Contacts → Group Management → Groups	Chapter 7: Manage Users & Contacts
Configure Operator account and enter their contact details	Manage Users/Contacts → Users and Contacts → CallConnector Users → Profiles	Chapter 7: Manage Users & Contacts
Select the Operator's phone	Manage Users/Contacts → Users and Contacts → CallConnector Users → Phones	Chapter 7: Manage Users & Contacts
Enter or Import the organizational contacts details	Manage Users/Contacts → Users and Contacts → Corporate Directory Contacts	Chapter 7: Manage Users & Contacts
Configure the Operator call queues	Configure Operator Parameters → Manage Call Queues	Chapter 8: Configuring Operator Parameters

Select the Park numbers for Operator use	Configure Operator Parameters → Predefined Queue Settings →Predefined Queues	Chapter 8: Configuring Operator Parameters
Enter the Operator Speed Dial Numbers	Configure Operator Parameters →Manage Speed Dials and Pages →Manage System Speed Dials	Chapter 8: Configuring Operator Parameters
Select the Operator Page Numbers	Configure Operator Parameters →Manage Speed Dials and Pages →Manage Pages	Chapter 8: Configuring Operator Parameters
Restart all CallConnector Services	Setup Router & Servers → Service Actions	Chapter 6: Configuring CallConnector Servers

Table 5-5 Configuration Steps for the CallConnector Standalone Operator

5.2.6.1 To Access the Navigation Guides for Configuring the Standalone Operator

Step 1 On the Guides, License & Maintenance tab, click on the Navigation Guides folder.

Step 2 Select Configure Standalone Operator task. The Navigation Guides will display the steps for performing this task.

Step 3 Click on the Navigation Wizard to browse through the whole configuration process. Or click on a specific step to go to the configuration page for that step.

5.2.6.2 Download router phone configurations

The CallConnector solution uses configuration data for ephones, hunt-groups, ephone-dns, etc on the router. From this window, you can download this information.

Step 1 Verify the router IP address. If this is incorrect, you will need to delete the router and add a new router.

Step 2 Enter the router name, telnet account user name and password. If necessary enter the executive level password (requires privilege level 15 access).

Step 3 Click on the **Download Router Configuration** button.

This will download and save the router phone configuration for CallConnector use. Click on Next to continue.

5.2.6.3 Select the phones for the CallConnector Operators

The phones configured on the router are displayed in the list. Select the phones that will be used by the CallConnector Users and Operators.

Step 1 Click on the **checkbox** (in the first column) beside the phone to select that phone. (Click again to de-select)

Step 2 Select all the phones that will be connected to CallConnector. Phones should be selected for all Users and Operators.

Step 3 Click on the **Save Selected Phones** button to save your selection. (You can review and remove the selected phones from the **Selected Phones** tab)

To continue, click Next.

5.2.6.4 Verify dial plan settings and number translation rules

These parameters determine how a number is dialed or looked up in the directory by the CallConnector.

Step 1 Verify the Country and the Location and change if necessary (If the location is not defined, add or update from the **Location Management** section).

Step 2 Enter the number of digits in the Extension Length. If they are of different lengths, then add all the extension lengths separated by semi-colon (without spaces).

Step 3 Specify the digit that has to be dialed for outside numbers in the Dial Out Prefix field. Click on **Save Router** button.

Step 4 Verify all commonly dialed numbers by entering them in the **Input** column of the **Click to add an input number** of the Verify Number Dialing table.

Step 5 If the numbers are processed incorrectly, then add Optional Number Translation Rules to pre-process the number before lookup or dialing.

To continue, click Next.

5.2.6.5 Setup router to send Radius accounting messages

The router needs to be setup to send the Radius accounting messages.

Step 1 For each router in the Radius Setup Status table, a check mark indicates that Radius parameters are setup correctly.

Step 2 Select the router that shows error and enter the Authentication Key and port (default port is 1646) and click on the Update Radius Settings button.

Step 3 To verify that the CallConnector is able to receive Radius messages, click on Start Monitor button and make some calls. Received messages will be displayed in the window. Click on Stop Monitor button to stop.

Step 4 You can check if the router is sending the Radius messages. Click on Start Capture, make some calls and then click on Stop Capture. The Radius Debug messages are displayed.

5.2.6.6 Specify the groups/departments for your organization

The department/groups in your organization need to be created. You can add new groups, modify the default groups and remove groups that are not required.

Step 1 To create a new group, click on the Add New Group button in the toolbar. Enter the group name and publishing options.

Step 2 To modify an existing group, select the group, change the group name and click on the Save button.

Step 3 To delete a group, select the group and click on the Delete button.

Step 4 If you do not want members from another group to view the presence information of the selected group, then click on that group's checkbox in the Groups Not Allowed to View table.

5.2.6.7 Configure Operator account and enter their contact details

The CallConnector Operator account needs to be created.

Step 1 Click on the **Add New User** button in the toolbar.

Step 2 Enter the Operator name and login account/password.

Step 3 Select the group/department and select the user type as **Operator**.

Step 4 Fill in the additional Operator contact information.

Step 5 You can also import user information from the router or CSV file. Click on the

Import Users button in the guide to run the wizard.

Note: Only one Administrator and two Operator accounts are allowed for Standalone version.

To continue, click Next

5.2.6.8 Select the Operator's phone

The CallConnector Operator needs to have a phone configured.

Step 1 Click on the **Phone** tab to view the list of the selected phones.

Step 2 Find the Operator's phone and click on the check box to select it.

Step 3 Click on the **Profile** tab, to verify that the primary phone number has been updated.

Step 4 Click on the **Save** button to save the Operator information.

To continue, click Next

5.2.6.9 Enter or Import contacts details for the directories

Organizational and external contact can be added or imported.

Step 1 To add organizational contacts, click on the blank row with text **"Click to add new contact"**. Enter the information in each field. Click on **More** to add/edit the additional fields. Click on **Save** to write the information to the database.

Step 2 To modify, select an existing contact and click on **More** button, make the changes and click **Save**.

Step 3 To delete contacts, click on the checkboxes on the left column and click **Delete** button.

Step 4 To import the contact information, click on the **Import->Contacts** button in the toolbar or on the button below.

Step 5 Repeat these steps to add external directory contacts.

To continue, click Next

5.2.6.10 Configure the Operator call queues

A call queue assigns the numbers from the Operator's phone to the queue and sets priority and alternate routing numbers.

To configure a queue: a)setup queue paramters, b)select the Operators and c) the phone numbers.

Step 1 Click on **Add New Queue** button in the toolbar. Enter the following in the configuration parameters:

1) Descriptive name for the queue
2) Select queue type, Local or Hunt.
3) Select priority and timeout.
4) Enter the Busy and Night number for local queue only.
5) Enter the Greeting Text

NOTE: If you have multiple Operators, the recommended queue type is "Hunt Group". This allows you to select a hunt group that has been configured in the router. The hunt group is required to have at least one Operator extension number.

Step 2 Select the Operators that will belong to this queue. The available directory numbers will be displayed in the table on the right.

Step 3 If the queue type is Local, then select the Operator extension numbers that will belong to this queue. If the queue is hunt-group type, then the available numbers will be automatically selected.

Step 4 Click on **Save** button to save the queue configuration.

To continue, click Next

5.2.6.11 Select the Park numbers for Operator use

You can select the park numbers for use by the Operator.

Step 1 The table lists all the park numbers configured in the router. Click on checkbox beside each park number that you want the Operator to use.

Step 2 Click on the **Save** button to save the park number configuration.

Step 3 Set the Predefined Queue priority (1 being the highest priority) and timeout values.

To continue, click Next

5.2.6.12 Enter the Operator Speed Dial Numbers

You can setup the Speed Dial numbers for use by the Operator.

Step 1 To add a number, click on **Add New Speed Dial** button in the toolbar. Enter the information in each field. Click on **Save** button to save the Speed Dial number.

Step 2 To update a number, select an existing number, edit the information in each field and click on the **Save** button at the bottom.

Step 3 To delete a number, select the number and click on the **Delete** button at the bottom.

To continue, click Next.

5.2.6.13 Select the Operator Page Numbers

You can select the Page numbers for use by the Operator.

Step 1 To add a Page number, click on **Add New Page** button in the toolbar. Enter the information in each field. Click on **Save** button to save the Page number.

Step 2 To update a Page number, select an existing Page. Enter the information in each field. Click on **Save** button to save the Page number.

Step 3 To delete a number, select the number and click on the **Delete** button at the bottom.

To continue, click Next.

5.2.6.14 Restart all CallConnector Services

You need to restart the CallConnector Services for these changes to become available.

Step 1 Click on the Restart Services button below or click on the **Restart All Services** button in the toolbar.

To continue, click Next.

5.2.7 Add, Update, Delete CallConnector Users

This Navigation Guides will walk you through the steps for managing CallConnector User accounts – including adding, updating and deleting user information.

A CallConnector User is different from a contact in the directory in the following ways -- a) User has a phone associated with the account, b) a User account is required for every CallConnector to allow them to login c) a User can make changes to their own contact information and availability.

Step 1 View the CallConnector Users in the Manage Users/Contacts window.

Step 2 Add a CallConnector User

Step 3 Delete a CallConnector User

Step 4 Update a CallConnector User information

Step 5 Restart all CallConnector Services

The table below summarizes the steps associated with the corresponding configuration pages and the chapter you can refer to for more information:

Step	Where to setup	Reference
View the CallConnector Users in the Manage Users/Contacts window	Manage Users/Contacts → Users and Contacts → CallConnector Users	Chapter 7: Manage Users & Contacts
Add a CallConnector User	Manage Users/Contacts → Add New → Add New User	Chapter 7: Manage Users & Contacts
Delete a CallConnector User	Manage Users/Contacts → Users and Contacts → CallConnector Users	Chapter 7: Manage Users & Contacts
Update a CallConnector User information	Manage Users/Contacts → Users and Contacts → CallConnector Users	Chapter 7: Manage Users & Contacts
Restart all CallConnector Services	Setup Router & Servers → Service Actions	Chapter 6: Configuring CallConnector Servers

Table 5-6 Configuration Steps for the CallConnector Users

5.2.7.1 To Access the Navigation Guides for Managing the CallConnector Users

Step 1 On the Guides, License & Maintenance tab, click on the Navigation Guides folder.

Step 2 Select Add, Update, Delete CallConnector Users task. The Navigation Guides will display the steps for performing this task.

Step 3 Click on the Navigation Wizard to browse through the whole configuration process. Or click on a specific step to go to the configuration page for that step.

5.2.7.2 View the CallConnector Users in the Manage Users/Contacts Window

CallConnector Users can be added, updated or deleted from the CallConnector Users window.

Step 1 Click on **Manage Users/Contacts** tab in the Menu bar.

Step 2 Click on the **Users and Contacts** folder in the folder list.

Step 3 Click on the **CallConnector Users** in the list under **Users and Contacts**.

This will display a list of all the configured users in the first table and the details of each selected user in the tabbed section to the right.

Click on the Next button to proceed.

5.2.7.3 To Add a CallConnector User

You will need the following information to add in a CallConnector User. The user's contact information – first and last name, department/group they belong to, their telephone numbers, voice mailbox, email and SMS addresses and their IP Phone.

Step 1 Click on the **Add New User** button in the toolbar.

Step 2 Enter the mandatory information fields – first and last name, login name and password.

Step 3 Select the User's Department/Group from the list and the user type. Type can be Administrator, Manager, Operator and User.

Step 4 Fill in the contact information including the phone numbers, email/SMS addresses and the voice mail information.

Step 5 Click on the **Phone** tab of the contact detail and select the user's phone by clicking on the checkbox beside the ephone.

Step 6 From the **Co-Workers** tab, select their manager, assistant and back contact names.

Step 7 Click on **Save** at the bottom of the page to apply the changes and add the user.

The user account will be created and the user will be added to the Available Users list. Note you will need to Restart the CallConnector Services to make the changes available.

Click on the Next button to proceed.

5.2.7.4 To Delete a CallConnector User

You will need to locate the user in the Available User's list and then delete the account.

Step 1 Click on the filter fields below First and Last names and enter in the name of the user that you want to delete.

Step 2 The Available Users list will display the matching contacts. You can also scroll down to locate the user contact.

Step 3 Click on the **checkbox(es)** in the leftmost column of the user(s) in the Available Users list. Verify the user(s) that you want to delete.

Step 4 Click on the **Delete** button at the bottom of the window. You will be asked to confirm the removal of the user account. Click on Yes to delete the user account.

All the user related information will be deleted from the CallConnector databases. Note you will need to Restart the CallConnector Services to make the changes available. Click on the Next button to proceed.

5.2.7.5 Update a CallConnector User Information

You will need to locate the user in the Available Users list and then update the required information.

Step 1 Click on the filter fields below first and last names and locate in the name of the user that you want to update.

Step 2 The Available Users list will display the matching contacts. You can also scroll down to locate the user contact.

Step 3 Select and highlight the user in the Available User list. Verify that this is the user that you want to update.

Step 4 Click on the fields that you want to change and delete or update the information. Note you cannot change the login name. If you need to change the login name first delete the user account and add in as a new user. Yes to delete the user account.

Step 5 To add or modify the user's phone, click on the **Phone** tab and select another phone.

Step 6 Click on **Save** at the bottom of the page to apply these changes

Note you will need to Restart the CallConnector Services to make the changes available.

Click on the Next button to proceed.

5.2.7.6 Restart all CallConnector Services

You need to restart the CallConnector Services for these changes to become available.

Step 1 Click on the Restart Services button below or click on the **Restart All Services** button in the toolbar.

To continue, click Next.

5.2.8 Configure A New Operator Position

The Navigation Guides will walk you through the steps for adding a new operator console position. A new operator position can be added to a CallConnector Server or as a backup position to an existing primary operator position.

Step 1 Open the CallConnector Users window in the Manage Users and Contacts

Step 2 Click on New User to create a new Operator account

Step 3 Select the Operator's phone

Step 4 Add the Operator to the call queues

Step 5 Restart all CallConnector Services

The table below summarizes the steps associated with the corresponding configuration pages and the chapter you can refer to for more information:

Step	Where to setup	Reference
Open the CallConnector Users Window in the Manage Users and Contacts	Manage Users/Contacts → Users and Contacts → CallConnector Users	Chapter 7: Manage Users & Contacts
Click on New User to create a new Operator account	Manage Users/Contacts → Add New → Add New User	Chapter 7: Manage Users & Contacts
Select the phone for the Operator	Manage Users/Contacts → Users and Contacts → CallConnector Users → Phones	Chapter 7: Manage Users & Contacts
Add this operator's directory numbers to the call queues	Configure Operator Parameters → Manage Call Queues	Chapter 8: Configuring Operator Parameters
Restart all CallConnector Services	Setup Router & Servers → Service Actions	Chapter 6: Configuring CallConnector Servers

Table 5-7 Configuration Steps for A New Operator Position

5.2.8.1 Open the CallConnector Users Window in the Manage Users and Contacts

CallConnector Operator can be added from the CallConnector Users window. The operator is added in as a CallConnector User of user type Operator.

Step 1 Click on **Manage Users and Contacts** tab in the Menu bar.

Step 2 Click on the **Users and Contacts** folder at the bottom of the folder list.

Step 3 Click on the **CallConnector Users** in the list under **Users and Contacts.**

This will display a list of all the configured users in the first table and the details of each selected user in the tabbed section to the right.

Click on the Next button to proceed.

5.2.8.2 To Add a CallConnector Operator

You will need the following information to add in a CallConnector Operator. The Operator's contact information – first and last name, department/group they belong to, their telephone numbers, voice mailbox, email and SMS addresses and their IP Phone.

Step 1 Click on the **Add New User** button in the toolbar. Or you can click on the button below.

Step 2 Enter the mandatory information fields – first and last name, login name and password.

Step 3 Select the User's Department/Group from the list.

Step 4 **You MUST select the user-type as Operator.**

Step 5 Fill in the contact information including the phone numbers, email/SMS addresses and well as the voice mail information.

Step 6 Click on **Save** at the bottom of the page to apply the changes and add the user.

The Operator account will be created and the Operator will be added to the Available Users list. Note you will need to Restart the CallConnector Services to make the changes available.

Click on the Next button to proceed.

5.2.8.3 Select the phone for the Operator

You MUST associate the operator account with their IP Phone.

Step 1 Click on the **Phone** tab to view the list of selected phones.

Step 2 Find the Operator's phone and click on the check box to select it. If the Operator's phone is not in the list then you will need to download the information from the router and select this phone.

Step 3 Click on the **Profile** button to verify that the primary phone number has been updated and the selected phone is displayed at the bottom (next to **Assigned Phone**).

Step 4 Click on **Save** at the bottom of the page to apply the changes and add the Operator.

Click on the Next button to proceed.

5.2.8.4 Add this operator's directory numbers to the call queues

If you have Operator call queues defined, then add this new Operator's directory numbers to the queues. Otherwise create New Call Queues.

Step 1 Click on the **Configure Operator Parameters** tab in the menu.

Step 2 Click on the **Manage Call Queues** folder. This will open the Operator Call Queues window.

Step 3 Click on the call queue for this new Operator. The details of the selected queue will be displayed

Step 4 Click on the checkbox beside the name of the new Operator. If the Operator name does not display, check the user type for the Operator account that you have just added.

Step 5 The directory numbers for the selected Operator will be displayed along with the other Operator directory numbers. Click on the new Operator's directory numbers that you want to add in this queue. For hunt group queues, the Operator's

directory number need to be first added to the router hunt group.

Step 6 Repeat steps 3 to 5 for all the queues for this Operator.

Click on the Next button to proceed.

5.2.8.5 Restart all CallConnector Services

You need to restart the CallConnector Services for these changes to become available.

Step 1 Click on the Restart Services button below or click on the **Restart All Services** button in the toolbar.

To continue, click Next.

5.2.9 Add, Modify, Delete Operator Queue Configuration

The Navigation Guides will walk you through the steps for updating the queue configurations for the CallConnector Operator.

Operator Queues are a collection or grouping of the directory numbers on the Operator's phone that receive the same type of calls and require the same call treatment. Two types of call queues are supported in the CallConnector – Local Call Queues and Hunt Group Queues. In both cases, the queue consists of a list of the directory numbers on the Operator's phone. In the Hunt Group queue, these numbers are also configured in a router hunt group to allow distribution of call among multiple operator positions.

Step 1 Open the Operator Managed Call Queues window

Step 2 To add a new queue, click on the Add New button and follow the configuration steps

Step 3 To delete an existing queue, select the queue and click on Delete

Step 4 To update a queue, select the queue and follow the configuration steps in the Wizard

Step 5 Click in Save to write the configuration changes to the database. Note – you will need to restart the CallConnector Services.

The table below summarizes the steps associated with the corresponding configuration pages and the chapter you can refer to for more information:

Step	Where to setup	Reference
Open the Manage Call Queues Window	Configure Operator Parameters → Manage Call Queues	Chapter 8: Configuring Operator Parameters
Add a New Call Queue	Configure Operator Parameters →Add New →Add New Queue	Chapter 8: Configuring Operator Parameters
To Delete a Call Queue	Configure Operator Parameters → Manage Call Queues	Chapter 8: Configuring Operator Parameters
Update Call Queue Parameters	Configure Operator Parameters → Manage Call Queues	Chapter 8: Configuring Operator Parameters
Restart all CallConnector Services	Setup Router & Servers → Service Actions	Chapter 6: Configuring CallConnector Servers

Table 5-8 Configuration Steps for Managing Operator Queue Configuration

5.2.9.1 Open the Manage Call Queues Window

The operator queue configuration is setup from the Call Queue window.

Step 1 Click on **Configure Operator Parameters** in the Menu bar to open the operator configuration windows.

Step 2 Click on the **Manage Call Queues** folder to view the list of configured queues

Step 3 Click on the queue name in the queue list displayed in the left.

Step 4 Information for the selected call queue will be displayed in the window to the right.

Click on Next to continue.

5.2.9.2 Add a New Call Queue

Create a new queue instance, enter the queue parameters and save.

Step 1 Click on the **Add New Queue** button in the toolbar

Step 2 Enter a descriptive queue name.

Step 3 Select the queue type – Local or Hunt Group. If you select Hunt Group, then select the router hunt group from the displayed list. Note the operator's extension numbers must be first configured in the hunt group.

Step 4 Select the queue priority – this is the order in which the calls will be answered, if there are multiple queues.

Step 5 Select the Alert timeout – this provides visual indication to the operator when this time expires.

Step 6 Set the Busy/Night Routing numbers to which the calls will be diverted to if the Operator makes themselves Busy or Unavailable (for local queues only).

Step 7 Enter the Greeting Text that will be displayed to the Operators.

Step 8 Select the Operators from the Operator's list. Their numbers will be displayed in the right window.

Step 9 Select the Directory Numbers for this Call Queue.

Step 10 Click on Save to write the configuration to the database. Note you will need to re-start the CallConnector Services for the changes to apply.

Click on Next to continue.

5.2.9.3 To Delete a Call Queue

The Operator queue configuration is setup from the expanded **Managed Call Queue** window.

Step 1 Click on the Queue name from the queue list displayed in the left.

Step 2 Verify that this is the queue you want to delete.

Step 3 Click on the **Delete** button at the bottom of the window.

Step 4 Confirm the selection. Note you will need to restart the Services for the changes to apply.

Click on Next to continue.

5.2.9.4 Update Call Queue Parameters

You can update the parameter setting of an existing call queue.

Step 1 Click on the Queue name from the queue list displayed in the left.

Step 2 Verify that this is the queue you want to update.

Step 3 To change the queue name – update the descriptive queue name.

Step 4 To modify the queue type – select from the pull-down list Local or Hunt Group. To change the Hunt Group, select a different hunt group from the displayed list. Note the operator's extension numbers must be first configured in the hunt group.

Step 5 You can change the other queue parameters including a) queue priority – this is the order in which the calls will be answered, if there are multiple queues; b) the Alert timeout – this provides visual indication to the operator when this time expires c) Busy/Night Routing - the number to which calls will be diverted to if the Operator makes themselves Busy or Unavailable (for local queues only); d) the greeting text.

Step 6 To change the operators that will receive calls from this queue, select from the list of operators. **Note only users of type Operator will be displayed here.**

Step 7 Update the Directory Numbers for this Call Queue by clicking on the checkboxes for all the required phone numbers.

Step 8 Click on **Save** to write the configuration to the database. Note you will need to re-start the CallConnector Services for the changes to apply.

To continue, click Next.

5.2.9.5 Restart all CallConnector Services

You need to restart the CallConnector Services for these changes to become available.

Step 1 Click on the Restart Services button below or click on the **Restart All Services** button in the toolbar.

To continue, click Next.

5.3 License Management

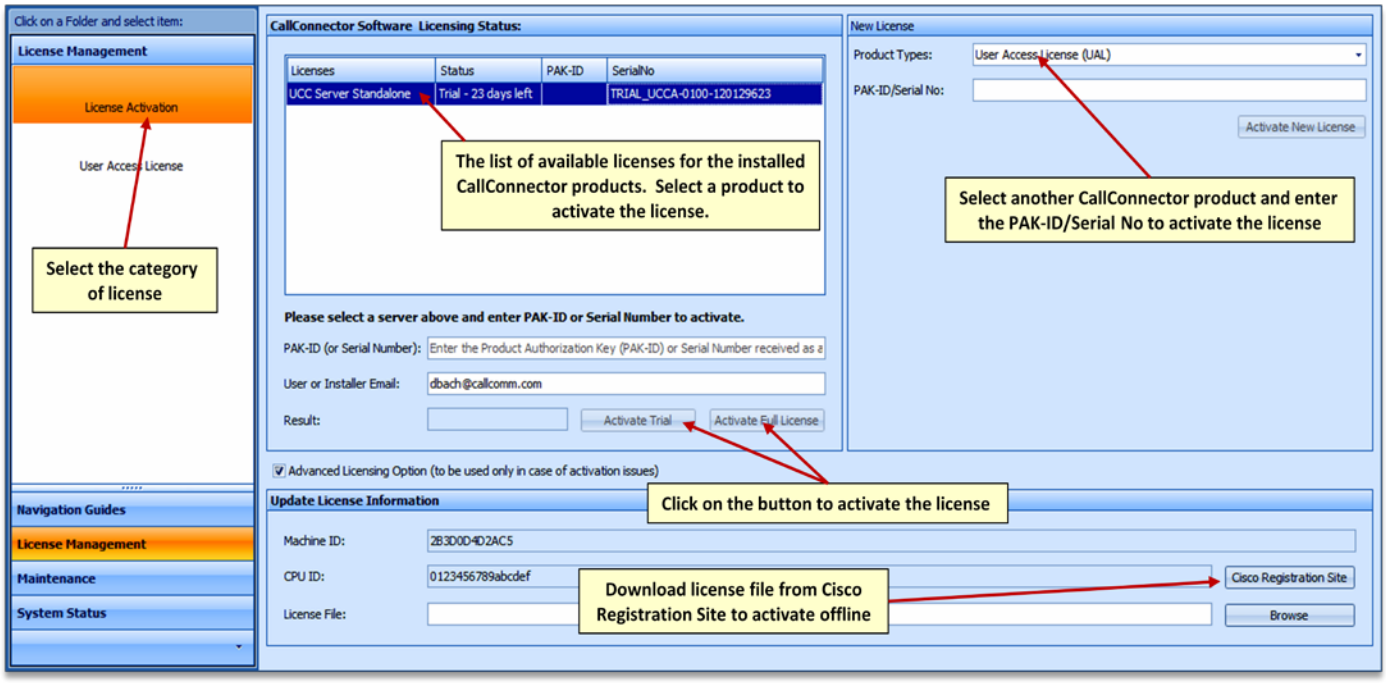


Figure 5-6 License Management

The Cisco CallConnector Configuration Manager allows the system administrator to activate and manage the licenses for CallConnector server and client applications. This functionality is provided in the License Management section of the page. This section comprises of two pages:

License Activation: This page displays the status of each CallConnector license and allows the administrator to activate these licenses using PAK-ID, Serial Number or License File. The supported licenses include CallConnector Server and CallConnector Advanced Client.

User Access License:This page manages the user access licenses for the CallConnector Client. The client licenses are purchased in packs of eight (8). The number of user access licenses in this page depends on the total number of client licenses purchased and activated. The administrator can check which licenses are assigned to which client machines, how many licenses are available, and can reserve or deny a user access to a specific license.

Together these two pages provide the following features:

Multiple License Management: Allows the administrator to manage multiple CallConnector server and client licenses including the CallConnector Server, CallConnector Standalone Operator and CallConnector Advanced Client Licenses. The details of each license are discussed in the following section.

View License Status: Displays the status of the CallConnector licenses. A license can be in the Trial, Pending Authorization, Full License or Not Activated mode.

Multiple Activation Methods: The administrator can activate the CallConnector license using Product Authorization Key (PAK-ID), Serial Number, or License File.

Activate the Client License Packs:

Reserve/Deny UALs: The administrator can reserve or deny the User Access Licenses to specific CallConnector users.

Customization: The list of licenses and UALs can be easily customized with the following options: sorting, grouping, searching and filtering data. See Chapter 2: Overview for more details.

Help files: Instructions on how to work on a section available on the right hand side of that section.

5.3.1Different Types of Licenses

5.3.1.1 CallConnector Standalone Operator License

The CallConnector Standalone Operator has the CallConnector Operator server and client components installed on the attendant's PC. This server will use the attendant's serial number for activation. The standalone attendant license supports only three user accounts – the administrative account (required for logging in to the Configuration Manager), the primary operator on the local machine and an optional user account for a backup operator on the another machine. Note on a CallConnector Standalone Operator the number of ephones that can be selected in limited to two.

5.3.1.2 CallConnector Server License

The CallConnector Server license grants access to the CallConnector server applications and the included Advanced Clients. The Server license includes eight (8) Advanced Client licenses. These licenses are displayed in the User Access License page. Additional client licenses can be purchased and activated in the Server to make available to the users.

5.3.1.3 User Access License

The User Access Licenses become available to the CallConnector Client once the Advanced Client PAKID has been activated in the server.

Client License Allocation: when installing the CallConnector Advanced client, the CallConnector client can request and receive an available license from the CallConnector server at the first login after installation. When the CallConnector user logs in, the CallConnector client will send in their machine information, application type and their login credentials to the CallConnector server. If the client is new and their machine information is not bound to a license and there is an available user access license for the application type, the CallConnector Server will bind the client machine information to that available license.

5.3.2License Activation

By default the License Activation page displays the status of the installed CallConnector Server. During the installation process, the administrator can activate the product to obtain full license or evaluate the product for 45 days. If the administrator had selected the evaluation option, the installation would have automatically obtained a trial license from the CallConnector License Server. The administrator can then use the PAK-ID or Serial Number to activate the CallConnector Server at any point of time.

The administrator can also add new licenses to the list of CallConnector Licenses. Currently, these licenses include the CallConnector Advanced Client License Packs. Each license pack has its own PAK-ID/Serial Number. Each Advanced Client License Pack contains eight (8) client licenses. The details of these user licenses can be viewed in the User Access License page.

The CallConnector Server also supports an-off-line, email delivered license file for customer situations that do not have access to the Internet or when there is an issue encountered by the automated registration method. This license file is generated on-line by Cisco Systems and is keyed to physical information for that specific computer. The administrator uses the Machine ID and CPU ID provided by

the License Activation page to generate the License File from the Cisco website and use it to activate the product once it has been emailed to them. The Off-line licensing method does not work for virtual machines and 64-bit Windows platforms.

5.3.2.1 CallConnector License Status

For each CallConnector license in the License Activation page, the following information is displayed:

Field	Description
Licenses	The name of the CallConnector server or client application. The following product is supported: CallConnector Server Standalone CallConnector Server Advanced Client License Packs
Status	The status of the CallConnector products can be: **Trial**: This license is valid for 45 days. It requires access to the Internet and is verified daily. For the duration of the trial period, this license is verified every day by connecting to the CallConnector License Server over the Internet. When the Configuration Manager is run during this evaluation period, it will display the number of evaluation days that are remaining. If the status of the license becomes Trial – Expired, you have to register to continue using the product. You can convert from Trial to Full License by activating the product using PAK-ID/Serial Number or License File. **Pending Authorization**: The status of the CallConnector product will be changed to Pending Authorization after the administrator activates the product. The input licensing information including PAK-ID/Serial Number will be verified on the CallConnector License Server. If the information is accurate, the status will be changed to Full License. **Full License**: The product has been activated and the license has been approved on the CallConnector License Server. The administrator and the CallConnector users have full access to all the features of the purchased product. **Not Activated**: The product has not been activated and cannot be accessed by the CallConnector users.
PAK-ID	As a part of your purchase documentation you will receive a Product Authorization Key or PAK-ID. This PAK-ID needs to be registered or activated with the Cisco CallConnector Licensing Server to receive a 'Serial Number License'. When the PAK-ID has been registered, the CallConnector Server operates in the fully-licensed mode. PAK-ID has the format 30xxxxxxxxx.
Serial Number	The Serial Number is generated when the administrator activate the CallConnector product using PAK-ID and when the product is in the trial mode. It has the format UCxx-0100-xxxxxxxxxx. If the company is using the trial version, the format of the serial number will be TRIAL_UCxx-0100-xxxxxxxxxx.The Serial Number can be found in the Windows Registry.

Table 5-9 CallConnector License Information

5.3.2.2 Activating CallConnector Products

The License Activation page displays the license status of the CallConnector products. From this page, you can activate the trial or the full version of the CallConnector Server and Standalone Operator as follows:

Activation in Virtual Machine environment: Each CallConnector Server installed in a virtual machine operating system is locked to the primary Cisco CME router. The administrator needs to make sure that the Cisco CME router is operating and connecting to the CallConnector Server before activating the license. The administrator enters the router IP address and telnet account information. The Configuration Manager verifies the router information and registers this with the CallConnector License Server.

Automated Online registration method: The system administrator enters the PAK-ID/Serial Number that they receive when ordering the product. The Configuration Manager will register the PAK-ID with the CallConnector License Server. The registration is a two-step process: the license is immediately placed in a “Pending Authorization” state. The CallConnector Server checks every day with the License Server until this is authorized. At this point the license status changes to “Full License”. This method requires Internet connection at the time of activation.

Offline activation: The CallConnector Server supports an alternate licensing method. This method also requires registration with the Cisco License site; however a license file is emailed as a part of the process. This licensing method can be used for situation where there is no Internet access or when the administrator has problem with the automated online registration method. Note this not available for Windows x64.

To Activate the CallConnector Server or Standalone Operator on a virtual machine

Step 1 In the CallConnector License list, select the CallConnector product to activate.

Step 1 Enter the Cisco Router IP Address.

Step 2 Enter the username and password of the telnet executive account that can be used to log into the Cisco CME router and configure the IP phone accounts.

Step 3 Click on Activate. The license status of the product will be changed to Pending.

To Activate CallConnector Products Using PAK-ID or Serial Number

Step 1 In the CallConnector License list, select the CallConnector product to activate.

Step 2 Enter the PAK-ID or the Serial Number. The PAK-ID has the format 30xxxxxxxxx while the Serial Number has the format UCxx-0100-xxxxxxxxxx.

Step 3 Enter the User's or Installer's Email address. This field is mandatory.

Step 4 Click on Activate Full License. The license status of the product will be changed to Pending Authorization.

To Activate CallConnector Products Using License File

Step 1 In the CallConnector License list, select the CallConnector product to activate.

Step 2 Click on Advanced Licensing Options. The Update License Information section will be displayed.

Step 3 Click on the Cisco Registration Site button to open the browser to www.cisco.com/go/license.

Step 4 Login using your CCO account. A valid account is required to access the License Server site.

Step 5 Enter the PAK-ID in the Product Authorization Key field and press Enter or click on Submit.

Step 6 You will see a list of purchased CallConnector products. Select the CallConnector product to activate.

Step 7 Enter the Machine ID and CPU ID from the Update License Information section to the Cisco license web page.

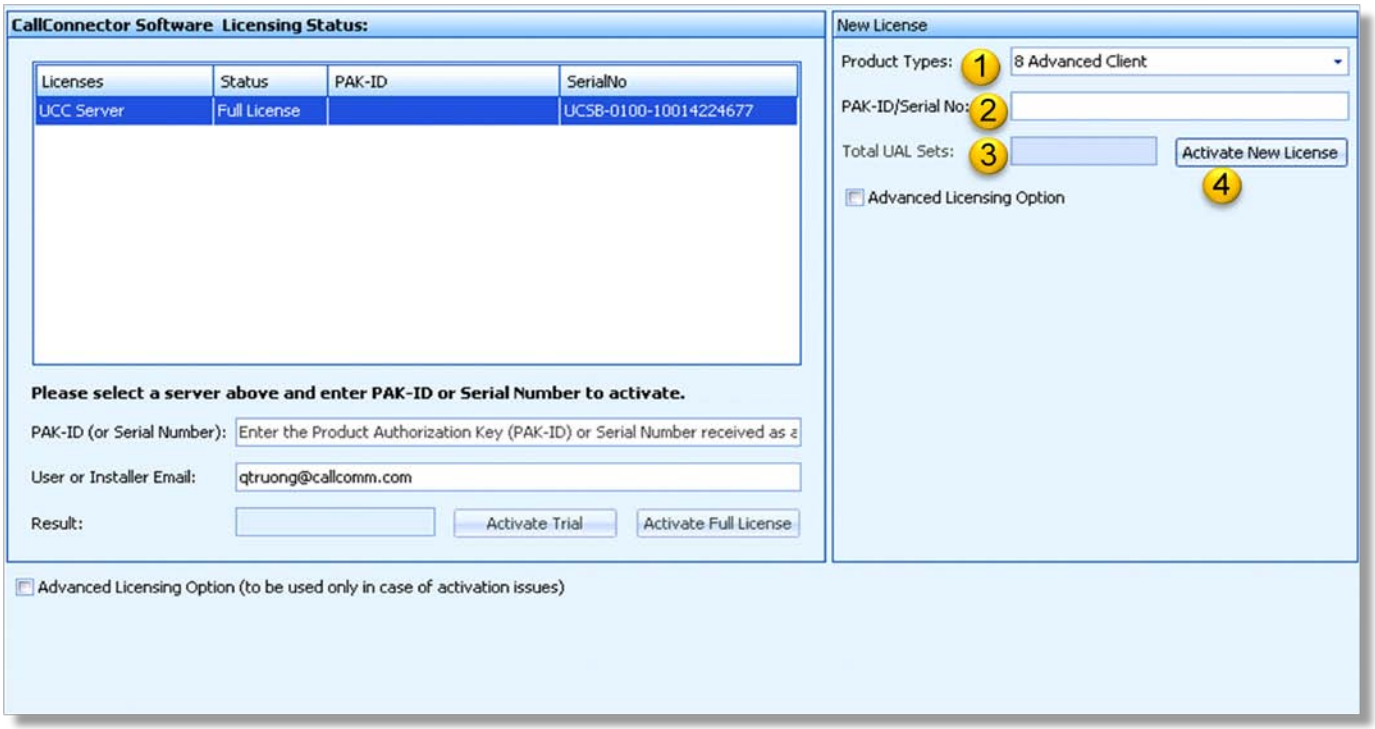
Step 8 Enter the email address where you would like to receive the license file.

Step 9 The license file will be emailed. Download it to the server PC and use the browse button to select the file.

Step 10 If the license file is valid, the CallConnector Server to change the license status to Full License.

5.3.2.3 Adding Additional Client Licenses

Besides CallConnector Server and CallConnector Server Standalone, the administrator can manage the license for the CallConnector Advanced client by adding them from the License Activation page. The licenses for the CallConnector Advanced Client are packaged as sets of eight per license. Multiple CallConnector Attendant Client license packs can be added. A set of eight client license will be added to the User Access License list.



To Add An Additional Client License Pack

Step 1 In the Additional Client License section.

Step 2 Enter the PAK-ID or the Serial Number of the product. The PAK-ID has the format 3xxxxxxxxxx while the Serial Number has the format UCxx-0100-xxxxxxxxxx.

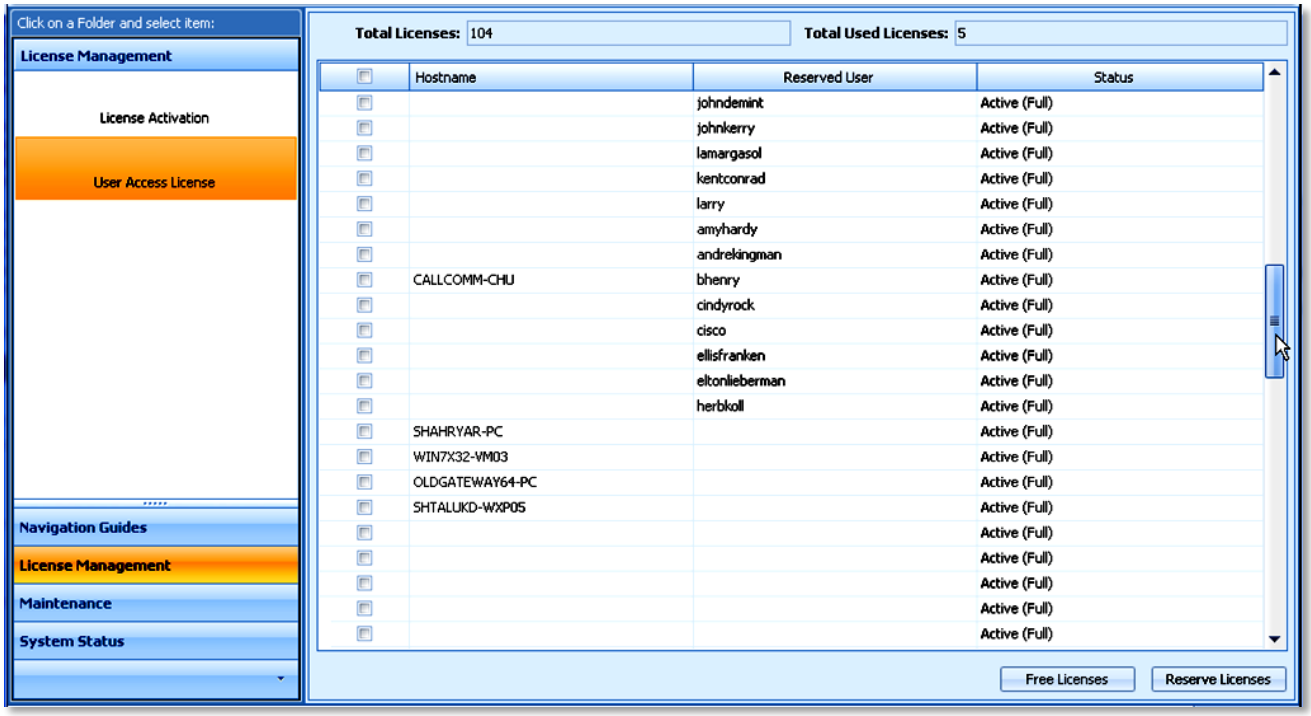
Step 3 Click on Activate Client License. The new client licenses will be added to the CallConnector User Access License list.

Step 4 Repeat step 1-3 for additional licenses.

5.3.3User Access License

The User Access License page displays the information on the available and allocated CallConnector Advanced Client licenses. Each Advanced Client License Pack enables eight CallConnector Advanced Client installations. The number of user licenses in this page depends on the number of License Packs activated from the License Activation page. From the User Access License page, the administrator can:

1. View the list of user access licenses.
2. Check the number of user access licenses that are being used by the CallConnector users, and determine how many licenses are still available.
3. Know which user has been allocated an access licenses based on their workstation Host Name..
4. Reserve a license for a CallConnector user.
5. Sort the user access licenses on ascending or descending order
6. Retrieve a subset of user access licenses based on user-defined criteria



For each user access license, the following information is displayed:

Total Licenses: This number is the total number of Advanced Client Licenses activated on the Server.

Total User Licenses: This is the number of licenses that have been allocated to Advanced Clients.

Free Licenses: Select the allocated licenses by clicking on the checkbox and click on this button to remove client license allocation.

Reserve Licenses: Click on this button to select CallConnector users and have the client licenses reserved from them. If the user already has a license, this will reserve an additional license slot.

Field	Description
Host Name	When a CallConnector user logs into the CallConnector server from a machine, if the machine information is not bound to any user access license and there is an available license, the CallConnector Server will bind the available license to the machine and display the Hostname of the PC with the client.
Reserved User	The administrator can reserve a specific user access license to the CallConnector user. In this case, this user access license is considered used and can be bound to the reserved CallConnector user only. The Reserved User displayed the login name of this particular CallConnector user.
Status	The status of the user access licenses can be: Active (Trial): the CallConnector user is evaluating the SCC client. Active (Full): the CallConnector user has activated the UAL and has full access to the CallConnector Client. Inactive: this user access license has been expired.

Table 5-10 User Access License Information

5.3.4To Reserve License

Step 1 Open the User Access License window from the License Management folder.

Step 2 Click on Reserve License button.

Step 3 Select the CallConnector users for whom the licenses are to be reserved. This number should be less than the available licenses.

Step 4 Click on Reserve License. The login name of the CallConnector user will be displayed in the Reserved User field.

5.3.5To Free Up an Allocated License

The administrator can free a license allocated to a CallConnector user or machine.

Step 1 Open the User Access License window from the License Management folder.

Step 2 Click on the checkbox beside each of the licenses that you want to free.

Step 3 Click on Free License button.

Step 4 If the license has been reserved to a specific CallConnector user, the reservation will be canceled.

Step 5 If a CallConnector user's machine has been bound with the license, this binding will be released and another machine may have access to the license.

5.4 Maintenance

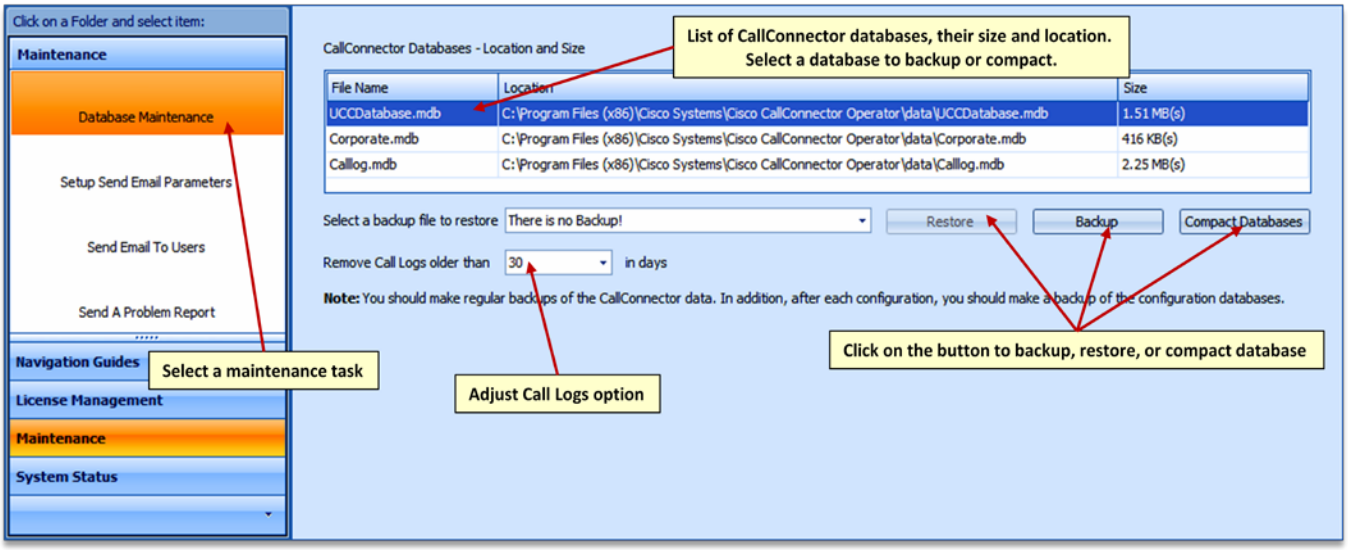


Figure 5-7 Maintenance

The Cisco CallConnector Configuration Manager allows the administrator to maintain the CallConnector databases and email CallConnector users important information for installing and using the CallConnector Client and Operator including login information, configuration data and quick reference guide in the Maintenance folder of the Guides, License & Maintenance page.

When problems occur, the administrator can seek help easily by filling out the problem report template and attaching the debug log to the template email and send it to the technical support team.

The Maintenance folder supports the following tasks:

Database Maintenance -	Discuss different database maintenance methods including backing up databases, compact databases, and restoring backed up databases.
Setup Send Email Parameters -	Specify the SMTP parameters to connect to the email server that may be used by the CallConnector Server to send outgoing emails.
Send Email To Users -	Allow the administrator to send important configuration data to the CallConnector Users.
Send A Problem Report -	Provide a problem report template for the administrator to report any technical issue to the technical support team. By default, this email can be sent to the Cisco TAC team.
Publish Software Updates -	Make a newer version of the Advanced Client available to the clients to perform an update.

Scheduled Tasks	This provides setup information for using the Windows Scheduler to run the Configuration Manager at a specified date/time pr perform a set of tasks.

5.4.1Database Maintenance

The CallConnector system supports three separate databases. These include the CallConnector Configuration Database (UCCDatabase.mdb), the Corporate Directory Database (Corporate.mdb), and the Call Log Database (CallLog.mdb). The Database Maintenance displays the detailed information of these databases and allows you to:

Backup Database: The database backup option allows you to save the current database files to a backup folder. You should first stop the CallConnector Server applications. The database will be zipped and saved in the <installation folder>\data\backup folder. The name of the backup file is the date and time of the backup.

Restore Database: The database restore option allows you to copy the backed up database files to the current database folder. The Restore operation should only performed if there is a problem with the current data files. You should first stop the CallConnector Server applications. You can select which backup database file to use. The selected database will be unzipped to the data folder. Any existing database files in the data folder are overwritten and cannot be restored. You will lose all the data that changed since the last backup operation.

Compact Database: When entries are deleted in the database, they are marked as deleted but not removed from the database files. The Compact operation removes these deleted records from the database file and recovers disk space. You should first stop the CallConnector Server applications before starting the Compact operation.

5.4.1.1 To Backup Database

Step 1 In the list of available, highlight the database file you want to backup.

Step 2 Click on Backup. The Configuration Manager will zip the database file and save it in the backup folder. The backup file is displayed in the list of backup file on the Database Maintenance page.

5.4.1.2 To Restore Database

Step 1 On the Servers page, stop the Database Server.

Step 2 In the list of backup database file, select the database file you want to backup.

Step 3 Click on Restore. If you did not stop the database server, you would be asked to stop it. Click on Yes to continue.

Step 4 The Configuration Manager will unzip the backup database file and copy it to the data folder. Any changes that you made since the last backup will be lost and cannot be recovered.

Step 5 Restart the Database Server for the change to be in effect.

5.4.1.3 To Compact Database

Step 1 On the Servers page, stop the Database Server.

Step 2 In the list of available, highlight the database file you want to backup.

Step 3 Click on Compact Databases. If you did not stop the database server, you would be asked to stop it. Click on Yes to continue.

Step 4 The CallConnector Server removes the deleted records from the database file

and thus, reduces the size of the database file. The new size will be reflected in the database list.

5.4.2 Setup Send Email Parameters

To send outgoing emails, the administrator must setup the SMTP Server on one of the Server PC and specify the SMTP Server configuration in the Setup Send Email Parameters page.

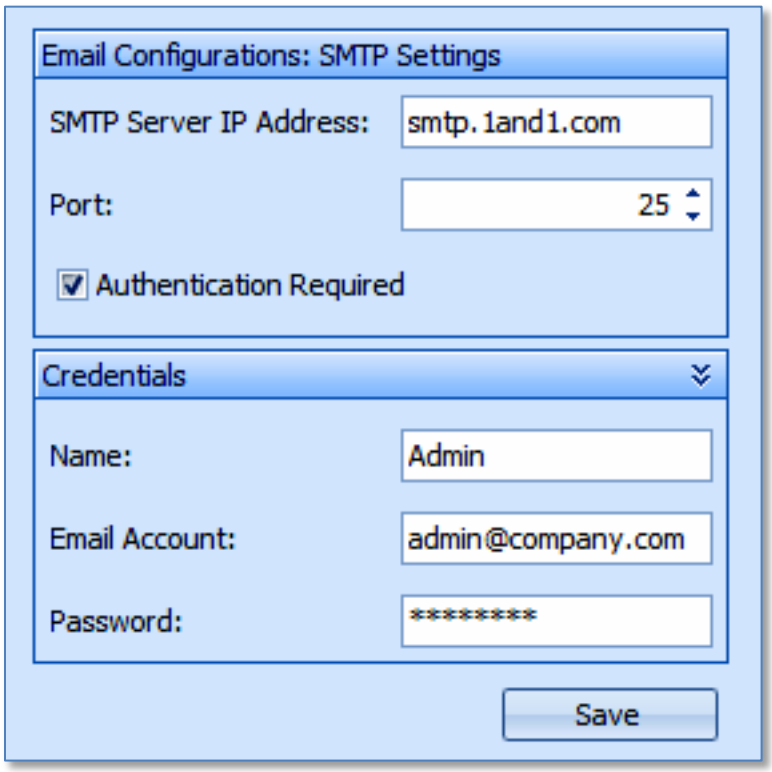


Figure 5-8 Email Configurations

This page comprises of two sections:

SMTP Settings: The section allows the administrator to specify the address and the port number of the SMTP Server. This information is required to send emails. If an account is required to access to the SMTP server, the administrator has to check on Authentication Required.

Credentials: This section is enabled only when the administrator checks on Authentication Required. It allows the administrator to enter the information of the account required to access to the SMTP Server. These include account name, email address and password.

5.4.2.1 To Setup the Email Account

Step 1 On the Guides, License & Maintenance page, click on Maintenance/Setup Send Email Parameters.

Step 2 Enter the SMTP server and port number.

Step 3 If an account is required to access the STMP server, check on Authentication Required. Then enter the account name, email address and password.

Step 4 Click on Save.

5.4.3Email Users

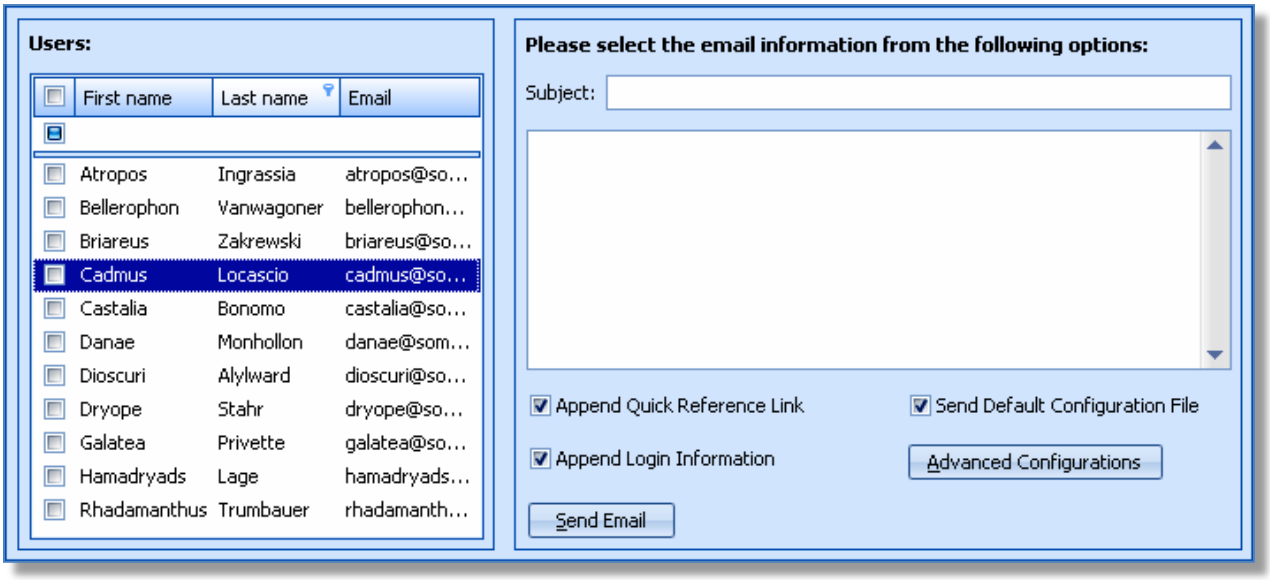


Figure 5-9 Email Users

This page contains two sections:

User List: This table displays a list of the CallConnector users and their email addresses. The check box next to each user allows the administrator to select that user to receive the email message. Clicking on the checkbox on the column header selects all users in the list.

Email Message: This section allows the administrator to compose the email message to the CallConnector user. The default configuration data can be edited with the Advanced Configurations option and attached in the email along with the CallConnector user login information and the quick reference link.

The Email Message area contains the following fields:

Field	Description
Email Subject	Email subject text for the email message.
Message Body	Text of the email to be sent to the users.
Append Login Information	When this option is selected, the user's login name, password and serial number are included in the body of the email massage. Each user is sent only their login information.
Attach Default Configuration File	The CallConnector client configuration options are saved locally in an xml file. The default configuration file allows the administrator to pre-define or customize this configuration file for the users. When the option is selected, then the configuration file is sent as an attachment.
Append Quick Reference Link	This option appends the link to the Quick Reference documents to the email message.
Advanced Configurations	Clicking on this button or pressing Alt + A will allow the system administrator to edit the default configuration data.
Send Email	Click on this button or press Alt + S to send the composed email message to the selected CallConnector users.

Table 5-11 Compose Email Message

5.4.3.1 To Send Email Messages to the CallConnector Users

Step 1 On the Guides, License & Maintenance page, click on Maintenance/Send Email To Users.

Step 2 Select the CallConnector users that you want to send the email message.

Step 3 Enter the subject and email message.

Step 4 Click on Append Quick Reference Link to include the link to the Quick Reference documents in the email message.

Step 5 Click on Append Login Information to add the user's login name, password and serial number to the email message.

Step 6 Click on Send Default Configuration File to attach the sample configuration data to the email message.

Step 7 Click on Send Email or press Alt + S.

5.4.4 Advanced Configurations

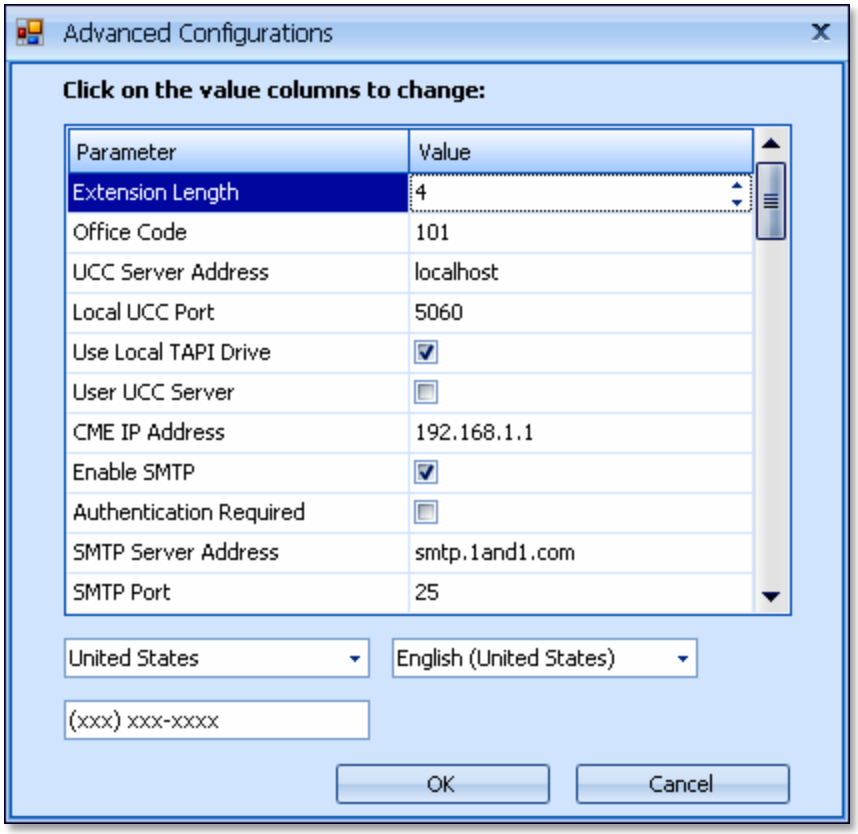


Figure 5-10 Advanced Configurations

The Advanced Configurations window provides a mechanism for the administrator to customize and distribute standard user configuration parameters during the installation process.

The user login/account information, software serial number and CallConnector client configuration data can be sent to the CallConnector users via email. This can simplify the CallConnector client installation as most of the installation parameters can be read from this file by the installation program.

When the client installation runs, it looks for this configuration xml file under the same folder with the installer or C:\Temp.

In the Advanced Configurations window, you can configure the following basic parameters:

Field	Description
Extension Length	The length of the extension number.
Office Code	
CallConnector Server Address	The IP Address of the CallConnector Server.
CallConnector Local Port	The port number where you can connect to the CallConnector Server.
Use Local TAPI Drive	Use the local CallController server. When this mode is enabled, the 'Use CallConnector Server' option must be unchecked.

Use CallConnector Server	Use the remote Call Controller server. It is usually installed on the server machine with other CallConnector server services. When this mode is enabled, the 'Use Local TAPI Drive' option must be unchecked.
UC500/CME-ISR IP Address	Specify the IP Address o the UC500/CME-ISR router to which the CallConnector Client connects to get control of the IP phone.
Enable SMTP	If the client program wants to send out email messages, it has to enable SMTP connection.
Authentication Required	Check on this box if an email account is required to access to the SMTP server.
SMTP Server	The IP Address of the SMTP Server.
SMTP Port	The port number of the SMTP Server.
Phone Services URL	
Phone Services Port	
MAPI Profile Name	If MS Outlook is installed on the client machine, the administrator can specify the MAPI Profile Name to connect to the client program.
Start Services Automatically	If the client program runs on the limited user mode, checking this option will enable the client machine to start CallConnector server services automatically whenever the CallConnector user starts the client application.
Local SIP Server	The IP Address of the local SIP server.
Local SIP Server Port	The port number of the local SIP server.
Start up with Windows	Checking on this option will automatically start the client application when the CallConnector user starts the Windows PC.
Display Incoming Calls	When this option is enabled, the client application will display incoming call information.
Display Outgoing Calls	When this option is enabled, the client application will display outgoing call information.
Close Popup on Disconnect	When checked, this option will close the CallConnector Client pop-up when it is disconnected from the CallConnector server.
Lookup in Directory	When enabled, this option looks up for caller or called party information in the CallConnector directory when there is an incoming or outgoing call.
Lookup in Outlook	When enabled, this option looks up for caller or called party information in the MS Outlook Directory when there is an incoming or outgoing call.
Popup Timeout	
Enable Auto-Recovery	
Recover Poll Interval	Specifies the time interval in seconds the CallConnector Call Controller should listens to UC500/CME-ISR connection to determine if the connection to the user-controlled IP phone still exists.
Minimum Search Length	
Enable Debug Trace	This option enables or disables the CallConnector applications to write debug messages to the debug log.
Trace Level	This number determines which debug messages will be written to the debug log. Trace level is defined from 1 – the most critical

	level to 5. See Chapter 6: Configuring CallConnector Servers for more details.
Support Phone Number	The phone number of the technical support team or person.
Support Email Address	The email address of the technical support team or person.
Google URL	Specify the URL of the Google search engine that the CallConnector Client uses as the default search engine for call and contact information.
Default hotkey	
Allow limited users	This option determines if the CallConnector Client can be used in the machine with limited user right.
Language	The CallConnector client application is available in different languages. The Advanced Configurations window allows the administrator to select which language the CallConnector users can install and use.
Run after install	This option determines if the CallConnector client application will be run automatically after being installed.

Table 5-12 Basic Configuration Data

The following are the configuration data for the Presence Server:

Field	Description
Update availability on login	When the CallConnector user logs into the CallConnector system, the CallConnector server will automatically change the presence status to 'Available'.
Synchronize availability with calendar	This option enables the CallConnector Server to automatically update the presence status of the CallConnector users based on their work schedule.
Idle timeout for Presence	
Idle availability status	

Table 5-13 Configuration Data for Presence Server

The dial plans include the information in the table below:

Field	Description
Write dialing plans	When enabled, this option will write the dialing plans specified in the configuration xml file to the CallConnector user's PC.
Location name	To make and receive phone calls, the CallConnector users have to specify their location. The administrator can enter the name of the location in this field.
Country code	The country code is required for the CallConnector user to dial out and receive phone calls.
Local area code	The code of the CallConnector user's local area.
Dialing out access code	This code is required to make a call from an extension number to the PSTN number outside the organization.
Dialing long distance access code	This code is required to make a long distance call from an extension number to the PSTN number outside the organization.
Location pattern	Defines the 'canonical' format for the PSTN numbers in the CallConnector user's local area.

Special PSTN numbers	These are the PSTN numbers that may not follow the format defined in the location pattern and should be dialed out as it is. Examples of special PSTN numbers are 911, 411, etc.
Country Name	A country code may be used for several countries. The administrator has to select the specific country in this field.
Country Pattern	Defines the 'canonical' format for the PSTN numbers in the CallConnector user's country.

Table 5-14 Dial Plan Configuration Data

If the CallConnector Client uses the Local TAPI Drive mode, the following information has to be defined:

Field	Description
UC500/CME-ISR IP Address	The IP Address of the UC500/CME-ISR router which the CallConnector Client uses to get control of the IP phone.
Line username	The username of the user phone account of the IP phone that the CallConnector client has the control over.
Line password	The password of the user phone account of the IP phone that the CallConnector client has the control over.
UC500/CME-ISR MAC Address	The MAC address of the UC500/CME-ISR router which the CallConnector Client uses to get control of the IP phone.
Extension mask	These are UC500/CME-ISR extension patterns. They represent the length/the number of digits dialed which are to be treated as internal extension numbers and not PSTN's that need to be dialed out. You can have more than one extension mask; each extension mask is separated by a semi-colon or a comma.
Special PSTN numbers	These are phone numbers that need to be dialed out; however, they either have a similar pattern to a UC500/CME-ISR extension mask or a different pattern from the PSTN format for the specified location. You can have more than one Special PSTN; each Special PSTN is separated by a semi-colon or a comma.

Table 5-15 CallConnector Client Personal Mode Configuration Data

5.4.4.1 To Customize the Configuration Values

Step 1 On the Guides, License & Maintenance page, click on Maintenance/Send Email To Users.

Step 2 Click on the Advanced Configurations button or press Alt + A.

Step 3 Change the necessary parameter values.

Click on OK to save the changes. These settings will be sent in the email to the user by selecting the Send Default Configuration File option.

5.4.5Problem Report

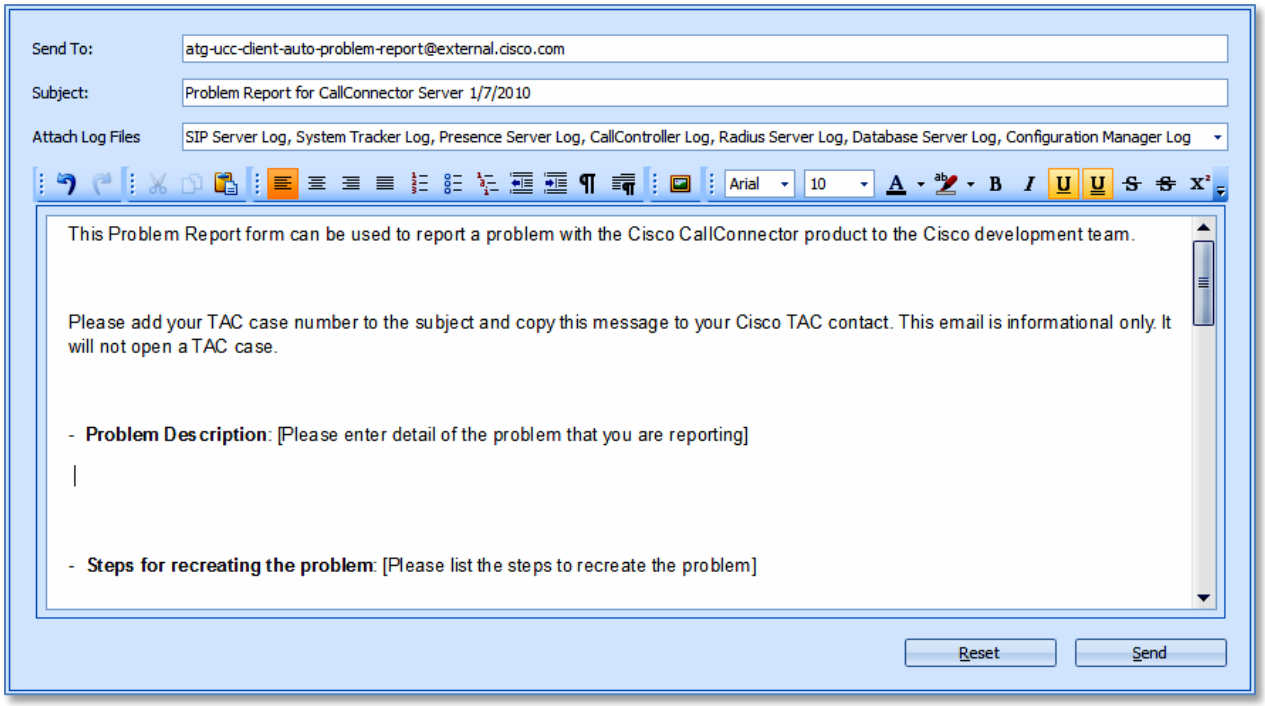


Figure 5-11 Report Problem

When problems occur, the administrator can report them to the Cisco TAC team using the Send A Problem Report page. A report template is provided and stored under the data folder of the installation folder. Selected report logs can also be attached to the report emails to provide more information on the problems.

5.4.5.1 To Report Problems

Step 1 On the Guides, License & Maintenance page, click on Maintenance/Problem Report.

Step 2 Enter the email address of the person you want to send to.

Step 3 Click on Attach Log Files and select the debug log files of the components you want to attach with the email and click on OK.

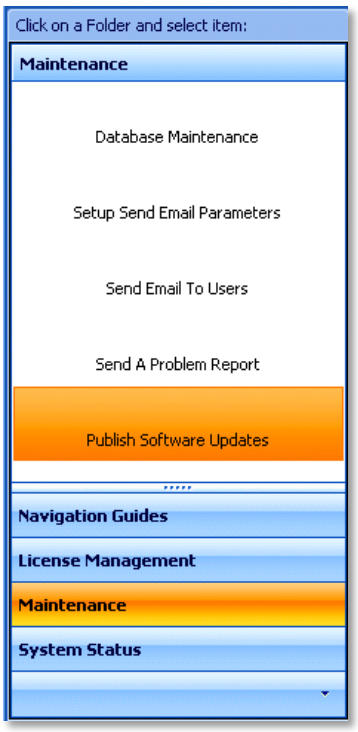
Step 4 Enter detail of the problem and the steps to reproduce the problem in the report template.

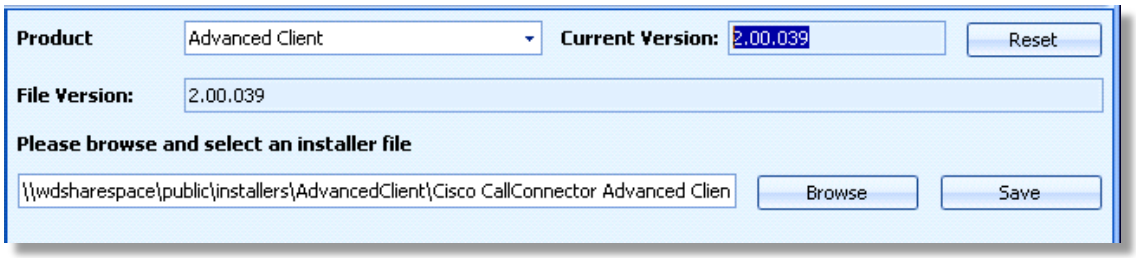
Step 5 If you have the screenshots of the problem, copy and paste them to the email.

Step 6 Enter your contact information and Cisco TAC case number, if available. It is also recommended that you do not change the CallConnector Servers Version in the template.

Step 7 Enter any extra information you want to include. Then click on Send to send the report email.

5.5 Publish Software Update





At login, the Advanced Clients check if their current version is older than the version posted by the administrator. If there is a newer version, then the client prompts the user to start the update process. When to user click to go ahead with the update, the published Advanced Client installation program is copies to the local PC and run to copy the newer files.

This update process is controlled by the administrator. They need to download the desired version from the Cisco site and copy it to a shared drive location. Then notify the client of the newer version by using the Publish Software Update method in the Configuration Manager.

5.5.1.1 To Publish a Software Update:

Step 1 Download the desired version of the Advanced Client software from Cisco.com and copy it to a shared drive location accessible to all the clients.

Step 2 In the Guides, Licenses and Maintenance section, select the Publish Software Update in the Maintenance folder:

Step 3 Select the Product -Advanced Client or Advanced Client x64 bit.

Step 4 Click on the Browse button and browse to the shared drive location and select the correct Advanced Client installation program and Save the selection.

Step 5 The product file name, file version and current version will be displayed.

5.5.1.2 To Remove a Software Update:

Step 6 To remove a file from being available for download, click on the Reset button.

5.6 Scheduled Tasks

The Configuration Manager can be scheduled to run from the Windows Task Scheduler to perform the following tasks:

- Stop CallConnector Server applications
- Start CallConnector Server applications
- Download Phone Configuration from UC500/CME-ISR
- Import Users from UC500/CME-ISR
- Compact databases to remove the deleted records

When run from the Windows Task Scheduler, the Configuration Manager does not present its graphical user interface; instead it displays a progress bar.

These scheduled tasks can be used to automatically download changes to the Cisco UC500/CME-ISR in the ephone, ephone-dn, hunt groups, etc and keep the CallConnector configuration synchronized to the router. If the CallConnector Users are imported from the UC500/CME-ISR, then the user configuration parameters – such as the extension numbers, phone password etc changes can be downloaded and automatically updated.

5.6.1 Scheduled Stop of CallConnector Services

The Configuration Manager can be run from the command line with the parameters **/stopSvrs** to execute without displaying the normal user interface to stop all the CallConnector Server services. It displays a progress bar while running and writes the event information in the log files.

5.6.2 Scheduled Start of CallConnector Services

The Configuration Manager can be run from the command line with the parameters **/startSvrs** to execute without displaying the normal user interface to start all the CallConnector Server services. It displays a progress bar while running and writes the event information in the log files.

5.6.3 Scheduled Download of UC500/CME-ISR Phone Configuration

The Configuration Manager can be run from the command line with the parameters **/ dwnldCMEAll** to log in to each of the UC500/CME-ISR configured and download the phone configuration. This would be equivalent to manually clicking on the Download Phone Configuration button for each router. The internal CallConnector database tables are updated after the download. Note – the services need to be restarted for the changes to be in effect. It displays a progress bar while running and writes the event information in the log files.

Since the UC500/CME-ISR phone configuration information can be associated with users and operators, addition, deletions and updates on the UC500/CME-ISR may impact these configurations.

5.6.4 Scheduled Import of User Information from UC500/CME-ISR

The Configuration Manager can be run from the command line with the parameters **/ importCMEUsrs** to log in to each of the UC500/CME-ISR configured and import the user information. This would be equivalent to manually running the Import User Wizard to download and update the user information from the UC500/CME-ISR routers. Note – the services need to be restarted for the changes to be in effect. It displays a progress bar while running and writes the event information in the log files.

As with the manual import of users from UC500/CME-ISR, the user account is created or updated for an ephone that has username and password configured.

Note:

1. If an ephone is removed, that record is not deleted as a CallConnector User.
2. The user name is the name associated with the first DN on the ephone.
3. The login name and password are the ephone username and password.
4. If the ephone username is moved to another ephone, the existing CallConnector user is not removed, but a new user is created.
5. If the ephone DN changes, then this is updated on the user account.

5.6.5 Scheduled Compact of CallConnector Databases

The Configuration Manager can be run from the command line with the parameters **/ compactdb** to execute without displaying the normal user interface to compact or remove deleted records from the CallConnector databases. Without this operation, the databases can grow to large sizes and impact the performance of the CallConnector Servers.

It displays a progress bar while running and writes the event information in the log files.

5.6.6 Automatic Tasks Parameters

The Configuration Manager can be run from the Windows Task Scheduler with the following parameters in the startup command line:

/stopSvrs This parameter causes the Configuration Manager to stop all the CallConnector Service applications

/dwnldCMEAll This parameter causes the Configuration Manager to download the phone configuration from all the UC500/CME-ISR configured on the CallConnector Server.

/compactdb This parameter causes the Configuration Manager to remove the deleted records from all the CallConnector database files

/importCMEUsrs This parameter causes the Configuration Manager to import users and update the existing user if the user has already been downloaded.

/startSvrs The parameter causes the Configuration Manager to start all the CallConnector Server applications

5.6.7 Command Syntax

ConfigurationManager.exe [/dwnldCMEAll] [/stopSvrs] [/startSvrs] [/compactdb]

An example of the command line parameters is shown below:

"C:\Program Files\Cisco Systems\Cisco Smart CallConnector Server\ConfigurationManager.exe" /stopSvrs /dwnldCMEAll /startSvrs

Notes on Automatic Scheduled Tasks:

- The commands are executed in the order from left to right. Therefore the stop command should come before the start command.

- The execution status of the tasks is written to the Configuration Manager log file in the Logs folder under the CallConnector Server folder.
- Changes in the UC500/CME-ISR configuration that are automatically downloaded can impact the consistency of the CallConnector Server configuration parameters. Some of the potential impacts are described below.
- Import of Users from UC500/CME-ISR is the only supported import method.
- Download of the UC500/CME-ISR phone configuration downloads and updates the copy of these parameters maintained in the CallConnector. It requires a restart of the services to apply these changes to the CallController Server. However the download operation does not change the user configuration or their associated phone. This requires the re-import of the users from CME.
- Import of user's from UC500/CME-ISR will update the user' phone extension numbers, password, etc. It can add a new user if an ephone has been added.

5.6.8 Impact of UC500/CME-ISR Configuration Changes

- Ephone Configuration Changes
  - If ephone is removed, the user account is not removed after user import.
  - If ephone is added, then user account is added after user import
  - If primary DN is changed, then the work number of the user is changed after user import.
- Ephone-DN changes
  - If the ephone-dn number or name changes, then this is reflected on the user account
- Operator parameters are not changed after user import. Any changes to operator extension numbers, hunt group number lists, park numbers etc need to be manually synchronized from the Configuration Manager.

5.6.8.1 Schedule the Configuration Manager to run automatically

Step 1 From Program Files, Accessories, System Tools select and run the Scheduled Tasks application. You can click on the Add Scheduled Task item to run the Schedule Task Wizard.

Step 2 To select the Configuration Manager application, click on Browse and from Program Files, Cisco Systems, Cisco Smart CallConnector Server select the ConfigurationManager.exe file.

Step 3 After the exe file name, enter the parameters for the tasks you want the Configuration Manager to perform. See below for details.

Step 4 Select the frequency and time of execution.

Step 5 Enter the user name (administrative account) and password to be used to run the tasks

Step 6 Verify the parameters are correct and complete the Wizard setup.

5.6.8.2 To Stop Automatically Scheduled Tasks

Step 1 Open the Scheduled Tasks application window and select the Configuration Manager.

Step 2 Click on the Delete button or right-click and select Delete. Click on Yes to confirm removal.

5.7 System Status

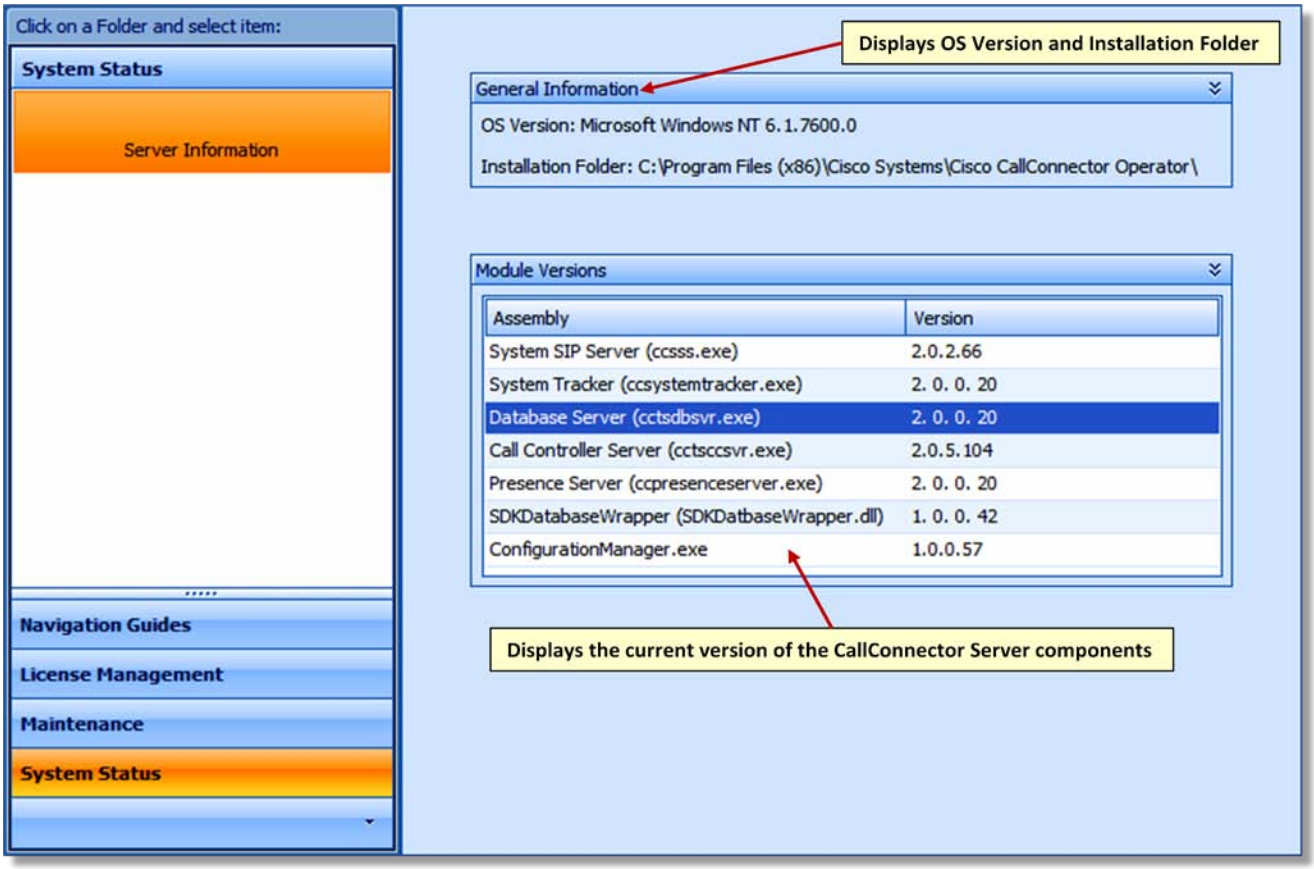


Figure 5-12 System Status

The Configuration Manager System Status folder displays the following system information:

Field	Description
OS Version	The current version of the host Windows Operating System where the CallConnector Server or Standalone Operator is installed.
Installation Folder	The folder where the CallConnector Server or Standalone Operator is installed.
Module Versions	The name and version of each component of the CallConnector Server or Standalone Operator. For the description of each component, please refer to Chapter 5: Configuring CallConnector Servers.

Table 5-16 Server Information

CHAPTER

6

6 Configuring CallConnector Servers

The Configuration Manager Setup Routers and Servers section allows system administrators to setup any additional Cisco router configuration, download the phone configuration from the router and configure the CallConnector Server operating parameters. This chapter provides instructions on how to perform these tasks. The following topics are discussed.

Server Configuration Overview -	Provides an overview of the components of the CallConnector Server, and describes the pre-requisites and the steps for configuring the CallConnector Server.
Navigating Servers Windows -	Provides an overview of the Setup Routers and Servers graphical interface including the toolbar, folders and configuration pages.
Download Router Configuration-	Describes how to manage configure the access to the Cisco routers, download router phone configuration data, select and setup the ephones to be controlled by CallConnector users, configure hunt groups and voice mail settings, enable telephony services, specify router locations and dialing plans.
Setup Radius Parameters -	Describes how to verify radius connections, set up radius parameters in the router, monitor and debug radius status.
Services Management -	Describes how to keep track and manage the status of the CallConnector Server applications (services) from within the Configuration Manager and from CallConnector Service Management application and Windows Services.
Server Options -	Provides an overview of Server services and describes how to setup their communication parameters. This section also discusses about trace logs, how to setup and test LDAP Access as well as how to enable different Call Controller options.
Location Management -	Describes how to keep track and manage the status of the CallConnector Server services in both Service Management and Windows Services.

6.1 Server Configuration Overview

The CallConnector Server comprises of server applications that run as services on a Windows computer system. Together these server applications provide SIP registrar, call control, data access and presence services to the CallConnector clients. The CallConnector Server application suite also includes management applications that provide graphical user interfaces to configure, run and manage the CallConnector solution.

The CallConnector Server service applications connect to the Cisco router to control calls and obtain telephone status information. The CallConnector clients connect to the CallConnector Server applications to access to the solution features. The CallConnector Server also maintains system configuration data, contact directory information and transactional history in databases on the server PC. The configuration and contact data can be imported from a number of sources including the Cisco routers, text files and from MS Exchange.

Since the CallConnector Server downloads and utilizes the configuration and user data from the Cisco routers and external databases these need to be setup before the CallConnector can be configured. The pre-requisites and the steps for the CallConnector Server configuration are discussed in the next section.

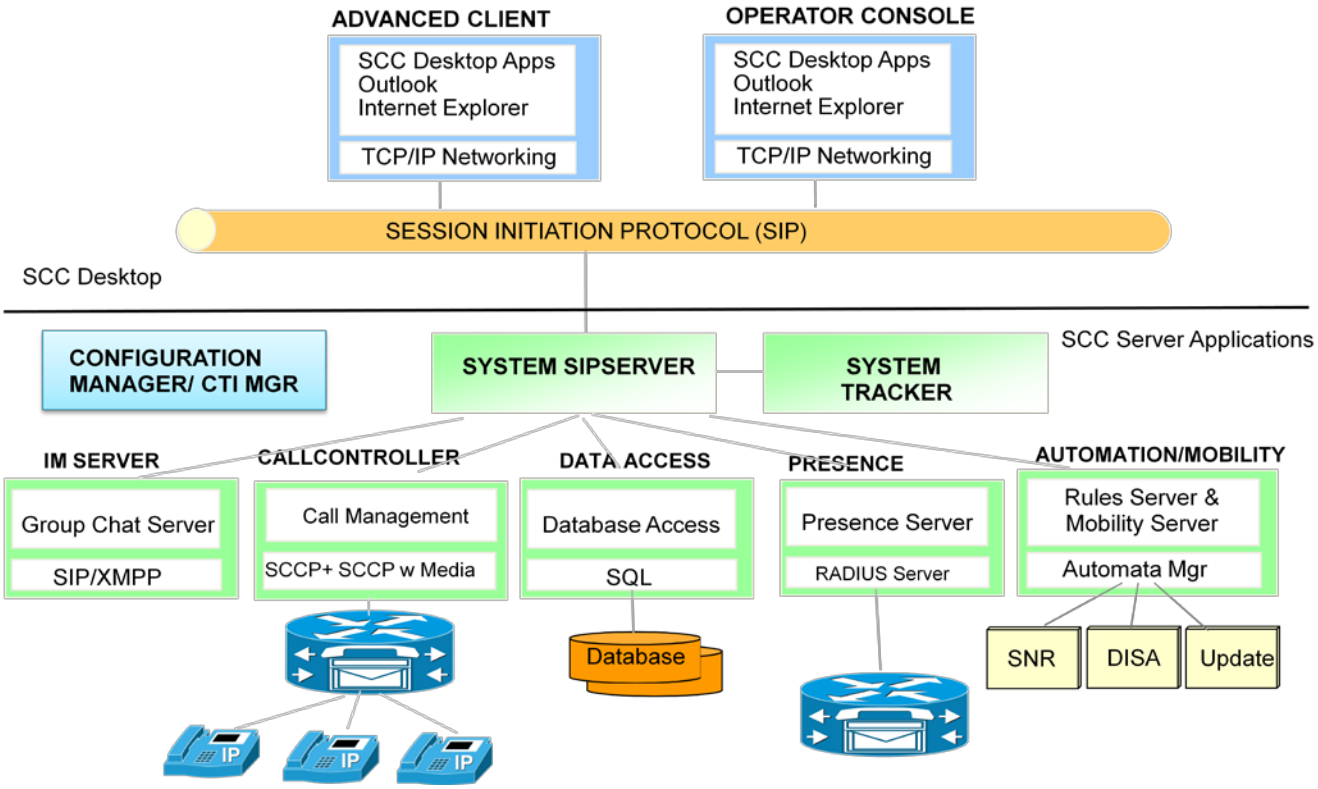


Figure 6-1 Cisco CallConnector System Diagram

6.1.1CallConnector Server Configuration Steps

The following lists the steps for configuring the CallConnector Server in the order of the recommended configuration process:

Steps	Description	Where to setup
Register the CallConnector Server License	The CallConnector Server applications require the purchased licenses to be registered with the Cisco site. The trial version can only be used for a limited time.	The licenses can be registered/activated during the installation process or from the CallConnector Configuration Manager – Guides, Licenses and Maintenance section.
Verify the Server Application Communication Parameters	Verify the default settings or select the IP address and ports for the communication protocols used by the server applications to connect to the CallConnector clients and to the Cisco routers. Verify the server applications are running. The following server services are required to be up and running: System SIP Server, System Tracker, Database Server and Local SIP Server. The Configuration Manager will attempt to start them upon startup.	Server applications communication parameters are available under the Server Options page of the Setup Routers and Servers section. The status of the CallConnector server applications is shown in the toolbar bar.
Provision the CallConnector Servers to work with the Cisco Routers	Enter the router access parameters. Add any additional routers if necessary. It is recommended that no more than five ISR/UC500 routers be connected to one CallConnector Server. For each router: Download the list of ephones and ephone-DNs that have been configured on the Cisco router. Select and configure the ephones to be controlled by the CallConnector Server and by the CallConnector users. Set up the router locations, extension number lengths, and outside access codes. Set up additional dialing rules for patterns not handled by the default dialing rules.	Configure on the Manage Routers page in the Setup Routers and Servers section.
Verify RADIUS status	Configure and verify the status of the Radius accounting setup. The CallConnector Server acts as the Radius Server and the Cisco router is the Radius client that generates and transmits the radius packets. If there are multiple UC500/CME-ISR routers, the radius authentication key must be identical in all routers.	Setup and verify Radius status from the Setup Radius page in the Setup Routers and Servers section.

	The Configuration Manager enables system administrators monitor radius status and capture radius debug messages for troubleshooting purpose.	
Setup the department/ groups in the organization and import the users and directory contacts	Three areas of user related information has to be configured – groups/departments, the CallConnector Users and the Directory Contacts: Specify the departments or groups in the organization. This needs to be done first as the users are then placed into these departments. Specify the account information for the CallConnector Users. User account includes the login name and password, the user type (user, manager, administrator or operator), their group and the user's phone in addition to the normal contact information. Import or enter the non-user contacts into the directories (Corporate and External) for all the CallConnector users to access and share.	Setup Groups, Users and Contacts from the Manage Users/Contacts section
Additional configurations for Operator Console	Operator positions require configuration of the call queues and selection of the park and page numbers. These configurations are performed from the Configure Operator Parameters section of the Configuration Manager	See description for setting up these parameters in the chapter on Configuring Operator Parameters.

Table 6-1 Steps for configuring the Smart CallConnector Server

6.2 Setup Router and Servers Configuration Tasks

The following configuration tasks can be performed from the Configuration Manager Setup Routers and Servers window:

View status; stop/start the CallConnector Server Applications
Allows system administrators to start or stop and keep track of the status of CallConnector Server service applications.

Save the router access parameters and download phone configuration data from the router
The system administrator can specify the Cisco routers that will connect to with the CallConnector Server and download the router phone configuration details. The CallConnector Servers require this data for proper operation. (Note - the CallConnector Server supports connections to multiple Cisco routers that may be in different locations.)

Select the phones for the CallConnector users
The administrators need to specify which phones will be connected to for control by the CallConnector Server. Once the information on all the phones configured on a router are downloaded, the administrator can select some or all the phones on the router for control by the CallConnector Server.

Setup the dialing rules for each router
This involves selection of the router location and specification of the area code, internal extension length and the PSTN dial out code. Default dialing translation tables are loaded based on the location, however if additional number translations are required then it rules can be setup to translate and display telephone number to a dialable number or to convert an incoming number to the canonical format for searching purpose.

Setup the Radius accounting parameters on the router and verify that messages are being received at the CallConnector Server
Setup the parameters on the router to send Radius accounting messages to the CallConnector Server. Monitor, verify and debug issues with the receipt of these radius messages using built in diagnostic tools.

View and update the Ephones Configuration
Lets you view and make changes to the router ephones configuration. The information of each ephone-DN can also be viewed and modified. Note – these changes are pushed back to the router.

View and update the ephone hunt groups on the router
Hunt groups can be defined in the router to allow incoming calls to a specific number to be directed to a defined group of extension numbers. From the Configuration Manager, the system administrator can view the existing hunt groups configured on the router and make changes to that configuration. Note -- CallConnector Server only supports sequential, peer and longest idle ephone hunt groups. (It does not support the parallel hunt groups for the operators)

Modify the IP Address and ports for the CallConnector Server applications
Allows you to configure the IP addresses and the port numbers used to connect to different CallConnector Server services. In case there are multiple network adapters in the Server PC, you can select which NIC to use.

Enable debug trace logging and set some CallController Server Options
Administrators can enable/disable the debug trace logging form this window to assist with problem detection. You can also enable/disable speakers when answering calls, and publish call information for monitored lines

Specify the router location and the associated dialing patterns
Administrators can add, modify and delete the location specifications. Parameters for a location within a country include the name of the area, area code, and the PSTN number pattern.

6.3 Navigating the Setup Router and Servers Window

This section describes the methods for opening the pages associated with setting up connections to the Cisco router and configuring the CallConnector Servers. These pages provide support for setting up the access to the router and downloading, the router phone parameters, selecting the phones for CallConnector, configuring the parameters on the router to send radius messages and making changes to the default server IP Address and Ports and the dialing rules for a location.

The toolbar buttons can be used to jump to a particular page. Alternatively, you can also select a folder and an item within the folder to go to that page. The figure below shows the Setup Routers and Servers section of the Configuration Manager – including 1) menu bar to select the Setup Routers & Servers, 2) Toolbar shortcuts to jump to a folder 3) folders and item list and 4) the tabbed configuration pages

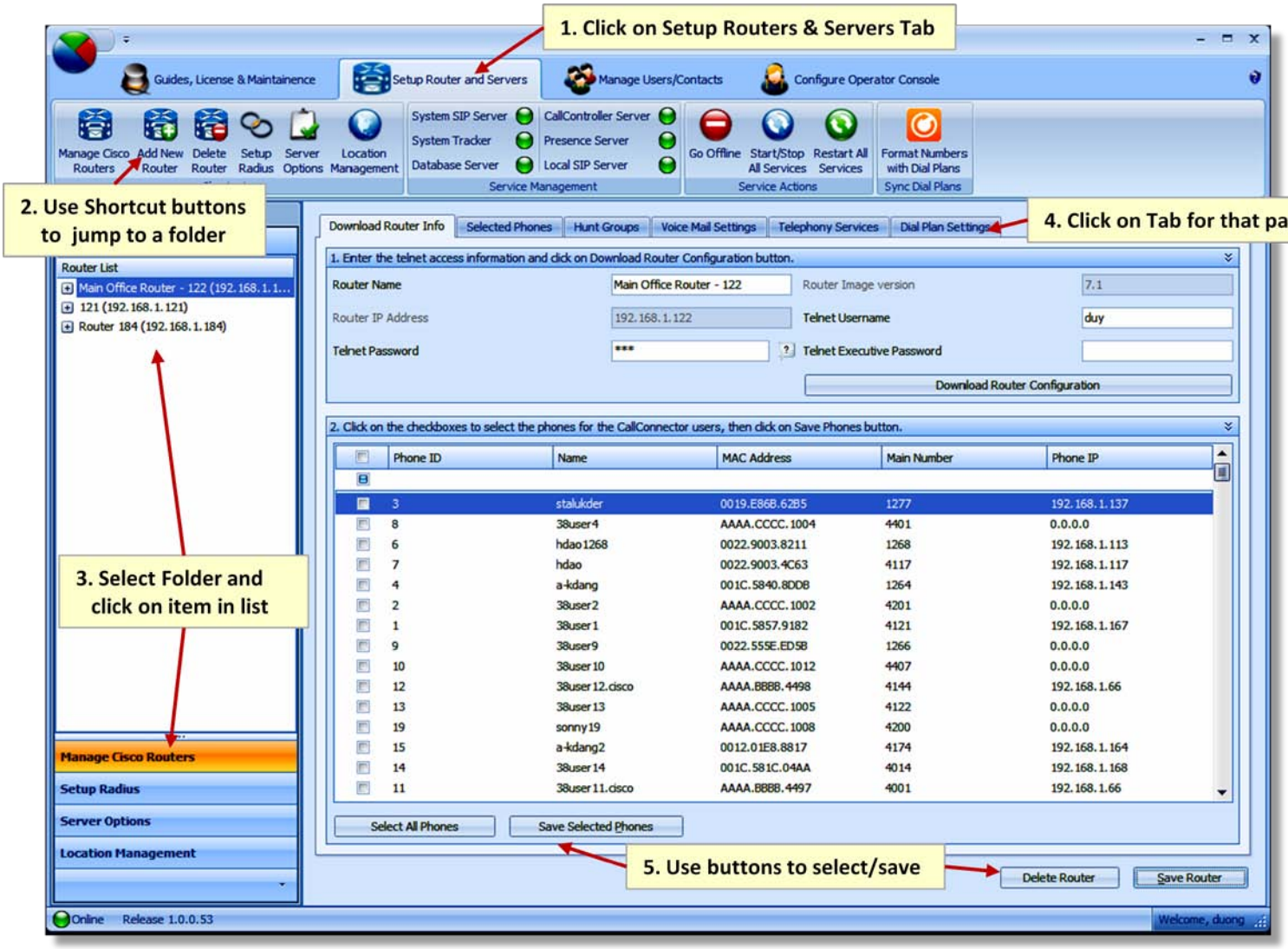


Figure 6-2 Setup Routers and Servers Window
The Setup Routers & Servers section consists of four folders. The contents of these folders and the parameters that can be configured in each window are summarized below.

Manage Cisco Routers: The Manage Cisco Routers folder contains a list of the configured routers – Clicking on a router will open the tabbed pages for setting the parameters for CallConnector Server to connect and work with that router. A new router can be configured by clicking on the Add New Router button in the toolbar. The Setup Router pages include:

Page to enter the router access parameters and buttons to download the router phone configurations and selecting the ephones for CallConnector.
Reviewing the details of the selected phones for connection to the CallConnector. The phone configuration can be changed from this page.
Setting up the parameters for formatting phone numbers to be dialable and to be looked up in the directory.
Display of the router hunt groups and options for changing the group configuration.

Setup Radius: Displays a page for configuring and verifying the radius settings on the routers. The current radius configuration status is displayed for each router. Only parameters required to setup radius is authentication key (password) and port (default =1646).

Diagnostic windows allow the administrator to verify transmission from the router and receipt at the CallConnector Server of the radius messages.

Server Options: Allows the administrator to enable/disable the debug tracing and make changes to the default IP address and port settings for the CallConnector Server applications.

Some CallControl options can also be set from this window.

Location Management: This page allows the administrator to add locations with area codes and dialing patterns.

Note

To save any changes made in the router configuration pages, you must press the Save Router button.

6.3.1.1 Setup Routers and Servers Toolbar

Figure 6-3 Setup Routers and Servers Toolbar

Toolbar Button	What does the button do
Manage Cisco Routers Shortcut	Opens the Manage Cisco Routers folder to add, modify or delete the router access information, download the phone configuration and select the phones for CallConnector. The configuration pages are tabbed. Click on the required tab to jump to that configuration page
Add New Router shortcut	Allows you to add a new router. Enter the router access information and click on the Save Router button to save the configuration information.
Delete Router shortcut	Deletes the currently selected router.
Setup Radius Shortcut	Jumps to the Setup Radius page
Server Options Shortcut	This open the server options page to enable/disable debug logging and setting up IP address and ports for the server applications
Location Management Shortcut	This button is used to open the Location Management page to add or remove a location (area code and dialing number patterns)
Server application status and stop/start button	The next six buttons organized in two columns display the status of the server applications (started – green;; stopped – red). Clicking on a button will take the server application to the other state.
Go Offline	This button will cause the Configuration Manager to go off-line and not connect with the CallConnector Server applications.
Stop/Start All Services	All currently running services will be stopped. If all services are stopped then this will start all the services.
Restart All Services	First this will stop all the CallConnector server applications then it will restart them all,
Format Numbers with Dial Plan	All numbers in the CallConnector directory databases are re-formatted based on the currently specified dial plan setting.

Table 6-2 Setup Routers and Servers Toolbar Buttons

Note

The display of the toolbar can be toggled by double-clicking on the Manage Users/Contacts tab.

6.3.1.2 Setup Router and Servers Folders

The Setup Routers & Servers section is comprised of a number of configuration pages organized in four folders. These folders and their pages can be accessed from the folder list window. The selected folder is highlighted in orange. Click on a folder to view the list of configuration items, then an item in the folder list to view and make changes to those parameters.

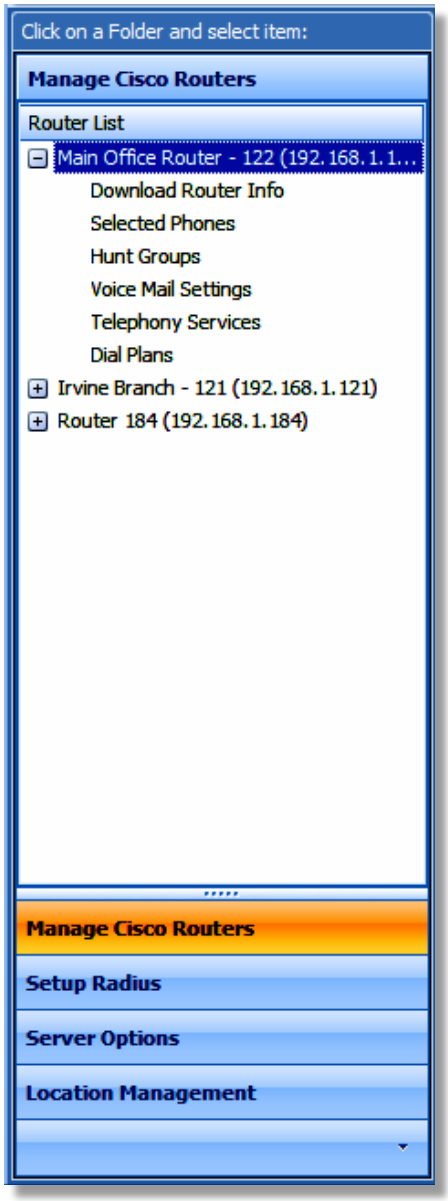


Figure 6-4 Setup Routers and Servers Folders

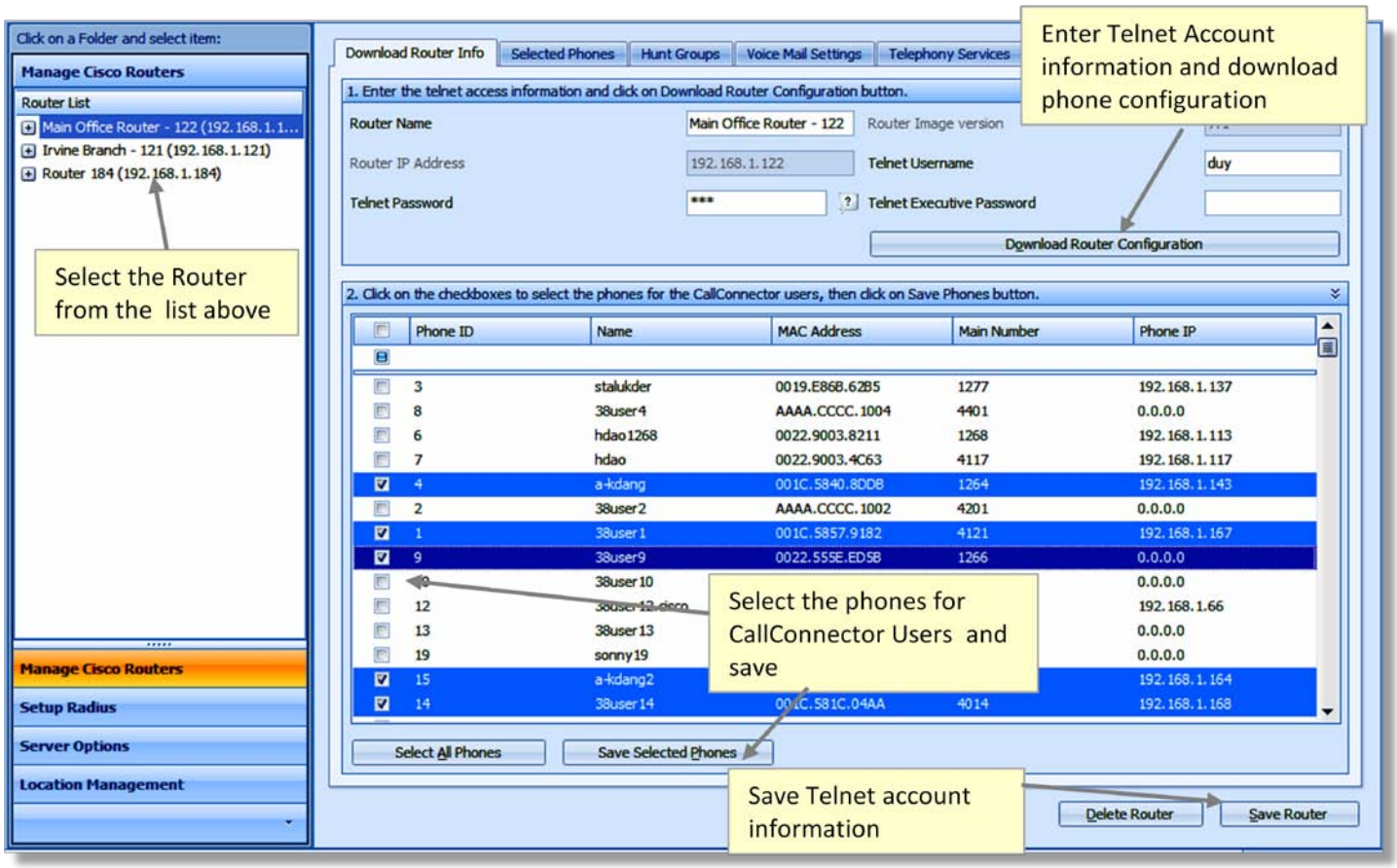
Folder	Folder Item	Configuration Page
Manage Cisco Routers	Select a Router or the sub-menu Download Router Info	Displays the configuration page to enter the router access parameters and download the phone data.
Manage Cisco Routers	Select sub-menu Selected Phones	Displays the Selected Phone tab, with a table showing the ephones that have been selected for CallConnector and the button configuration for each highlighted ephone
Manage Cisco Routers	Select sub-menu Dial Plans	Displays the Dial Plan Settings tab showing the current dialing parameters and translation rules
Manage Cisco Routers	Select sub-menu Hunt Groups	Displays the Hunt Group tab showing the hunt groups configured on the router. This window allows hunt groups to be added or modified.
Setup Radius	Radius	Allows the administrator to verify and setup the Radius parameters in the router
Server Options	Address and Ports	Administrators can enable/disable debug tracing and change the ip address/ports for the CallConnector Server applications
Location Management	Location	Add, modify or delete the area code and dialing patterns

Table 6-3 Setup Routers and Servers Folders and Folder items

6.4 Manage Cisco Routers

For the CallConnector Server to connect and work with the phones on a router the following configuration steps have to be performed:

The router has to be added to the Configuration Manager Router list. Note the IP address of the router must be accessible from the CallConnector Server.
Telnet account information with the appropriate level of privilege (Level 15) must be provisioned on the router and configured on the Configuration Manager Download Router Info page.
The router phone configuration must be downloaded to the CallConnector Server by clicking on the Download Router Configuration button.
The phones to be connected and used by the CallConnector users (including the operators) must be selected by checking them and Saving Selected Phones.
The Dialing Plan parameters for the router and its PSTN connection must be entered.
The router must be setup to send Radius accounting messages to the CallConnector



Server. (This configuration is performed from the Setup Radius page).

Figure 6-5 Configuration Page Telnet Access Parameters, Downloading Configuration and Selecting Phones for CallConnector Users

The CallConnector Server connects to the Cisco routers to control the IP phones based on user commands and to receive call status information. To enable this function, each ephone that is to be controlled has to be selected from the Manage Cisco Routers page.
The steps for configuring each router connecting to the CallConnector Server are listed below in the order of the configuration process with references where to perform the setup. The detailed information of each tab in the Manage Cisco Routers page and how to perform the steps are described in the following sections.

Steps	Description	Where to setup
Add a new router Or Select an existing router	Up to five ISR/UC500 routers can be connected to the CallConnector Server. The first step is to add a new router to the Router List if you don't have one or if you want to work on a new router. Clicking the Add New Router button in the toolbar will add a new router with default values to the list. Otherwise select an existing router in the router list to configure that router.	See Managing Cisco Routers to learn how to add a new router.
Download UC500/CME-ISR data	The next step is to use the Telnet protocol to access the UC500/CME-ISR configuration information. You will need to provide: Router IP Address Telnet account name Telnet password and Exec level password After you save the router information and click on Download Router Configuration button, the list of all ephones configured in the selected router is displayed in the table.	Download Router Info
Select and configure ephones	Select and configure the ephones to be controlled by the CallConnector users. For each ephone, you can configure the ephone buttons and directory numbers.	Selected Phones
Setup dialing plans	The CallConnector Server needs to know how to dial out PSTN extension number by looking into dialing rules. It also uses dialing rules to format incoming numbers for searching purpose.	Dial Plan Settings
Configure hunt groups	After you download the Router data, a list of hunt groups specified in the selected router will be displayed. You may add new hunt groups, or modify the configuration data of the current hunt groups, or delete the ones you do not want to use.	Hunt Groups

Table 6-4 Content of each Tabbed Configuration Page in Managing Cisco Router section

6.4.1 Add, Delete and Save Routers

One CallConnector Server can support users on multiple Cisco routers. Such configurations can be used to support branch offices with their individual Cisco router working with a centralized CallConnector Server. In the Configuration Manager Servers page, you can add new routers, change the configuration data of the current routers, or delete routers. Currently up to five ISR/UC 500 routers are supported.

6.4.2 To Add a Cisco Router

Step 1 Click on the Add New Router button in the toolbar to add a new router to the CallConnector Server.

Step 2 If you are currently working on another router, the Configuration Manager will ask if you want to save the router configuration information in the CallConnector system databases before adding the new router. Click on Yes to proceed.

Step 3 The Configuration Manager will add a new Cisco router to the Router List with the default values. You need to configure the telnet account information for the router and click on Save Router or press Alt + S to save the router data.

Note

The IP Address of the first router is gathered during installation and is automatically populated in the Router List. However, you will need to configure the Telnet account information for this router.

The Router IP address cannot be changed one it has been added. You will need to remove/delete that router and then add a new router with the correct IP address to correct his problem.

Once deleted, the router information is removed from the CallConnector system databases.

You cannot recover the router information after you delete it. You have to create a new one and re-enter the configuration data.

6.4.3 To Save Router Configuration Data

Step 1 In the Router List, select the router and enter the Telnet account and the router name information.

Step 2 Any changes are made to the router name, Telnet account information or to the Dial Plan Settings have to be saved. These configuration data are associated with the router tables in the CallConnector databases.

Step 3 Click on Save Router or press Alt + S to save the router data.

Note

All the router configuration data you enter in the Manage Cisco Routers section must be saved before exiting the Configuration Manager. Otherwise, they will be lost.

Upon saving the router, the configuration data will be saved to the CallConnector system database (UCCDatabase.mdb).

6.4.4To Delete Router from the CallConnector Router List

Step 1 In the Router List, select the router you want to delete.

Step 2 Click on Delete Router button at the bottom of the page or press Alt + D to delete the router.

Step 3 The CallConnector Configuration Manager will ask if you really want to delete the selected router. Click on Yes to confirm.

Note

Once deleted, the all router information will be removed from the CallConnector system databases.

You cannot recover the router information after you delete it. You have to create a new one and re-enter the configuration data.

6.4.4.1 Router List

The Router List displays the list of Cisco routers that are configured for the CallConnector Server and provides access to their configuration data. For each router, the router name and IP address are shown. The router list can be expanded to show a sub-menu of each of the configuration pages. You can click on a specific page to view that page.

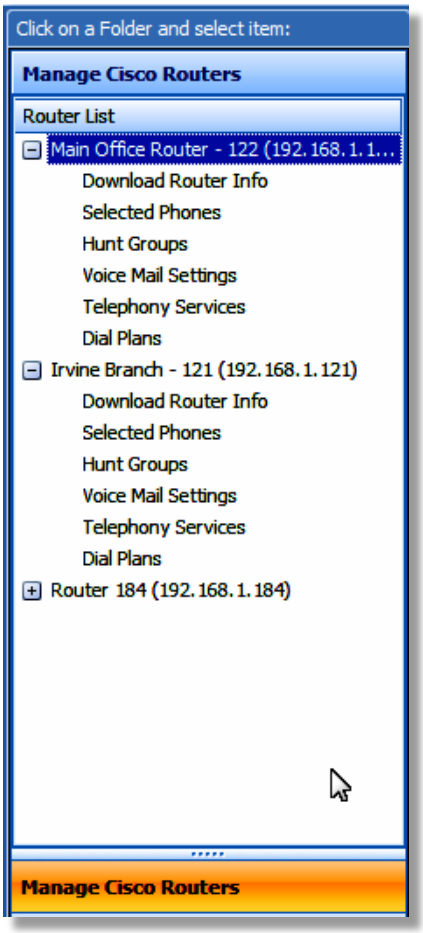


Figure 6-6 Router List

6.4.5Download Router Information

The Download Router Info tab allows you to download router phone data and select the ephones to be controlled by the CallConnector Server.

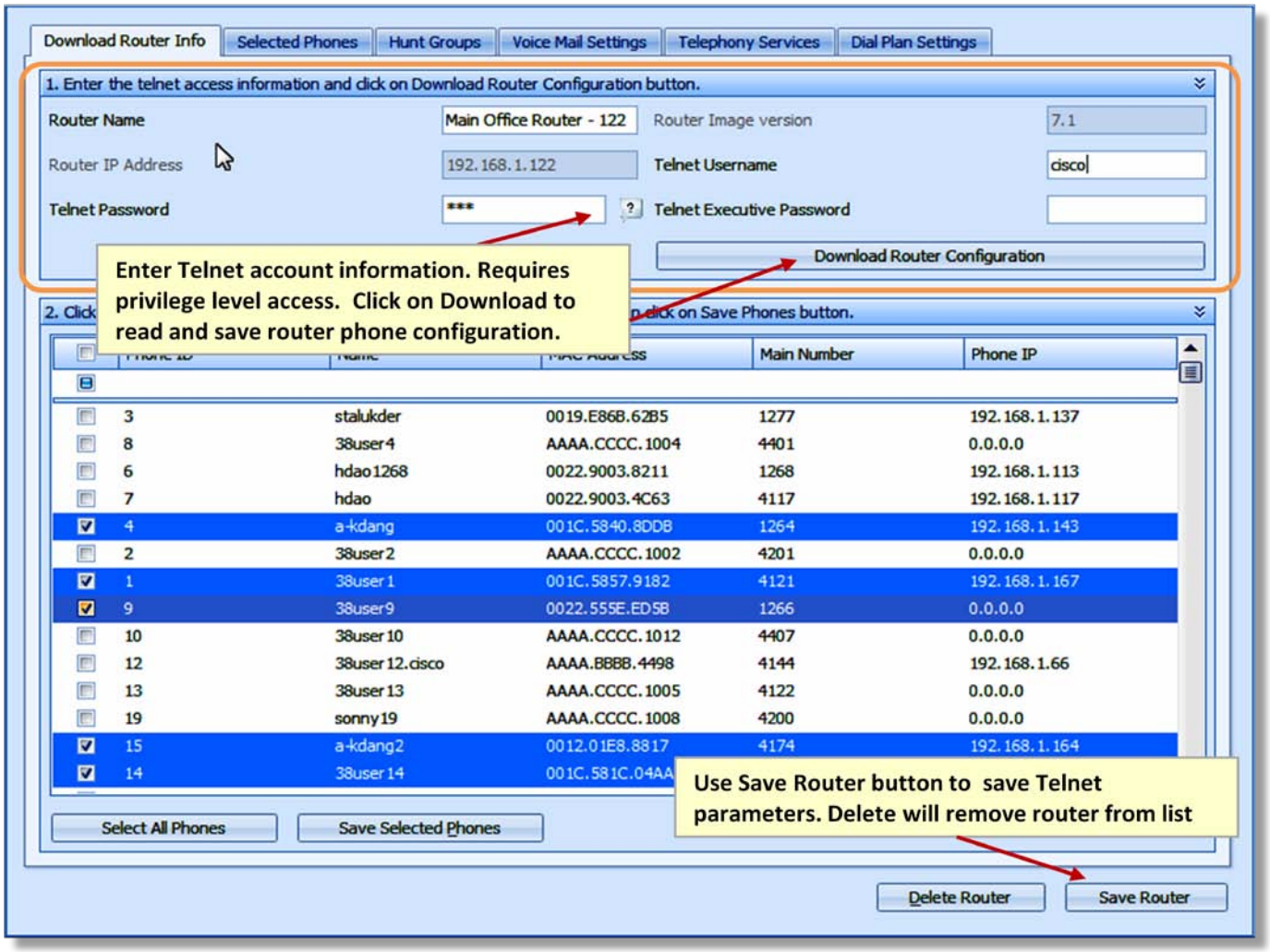


Figure 6-7 Download Router Information page

The top part of this configuration page is used to enter the Telnet account parameters. Telnet and HTTP access is used to download the router phone configuration data. Details of each field are described in the table below:

Field	Description
Name	A display name for the selected Cisco router. This name, when specified, will be displayed in the Router List together with the router IP address. The value of this field can be blank.
Image version	The version of the UC500/CME-ISR firmware. This information is retrieved from the router and not editable.
IP Address	The IP address of the selected Cisco Smart UC500/CME-ISR router. Once the router has been added to the CallConnector configuration, this field cannot be edited. If this is incorrect then the delete the router entry and re-add.
Username	The login user name for the telnet account to access the Cisco router. The Telnet account must have privilege level 15.
Password	The password for telnet access to the Cisco router. Executive level access is required.
Executive Password	Some telnet account may require a separate executive password in order to write router configuration data. The CallConnector requires executive level access to the router.
Download Router Configuration	Press this button to start the download process. The Configuration Manager will log in to the router using the Telnet account specified and download a series of router phone configuration data and save it in the CallConnector system databases.

Table 6-5 Description of Router and Telnet Access Fields and Buttons

6.4.6To Download Router Configuration Data

Step 1 In the Router List, select the router you want to configure and download the phone data.

Step 2 Enter the router IP address, telnet username and password. Enter the executive password if required.

Step 3 Click Download Router Configuration button. The Configuration Manager will initiate the download process and pop up a window that shows you the download progress.

Step 4 After all the phone data has been downloaded, the Download window will automatically close. A progress bar displays the download status of the currently set of data being downloaded. You can close the Download Window by pressing Alt + F4 or by clicking X button on the top right hand corner of the window.

Step 5 The Configuration Manager will show the list of all ephones configured in the selected Cisco Smart CME router.

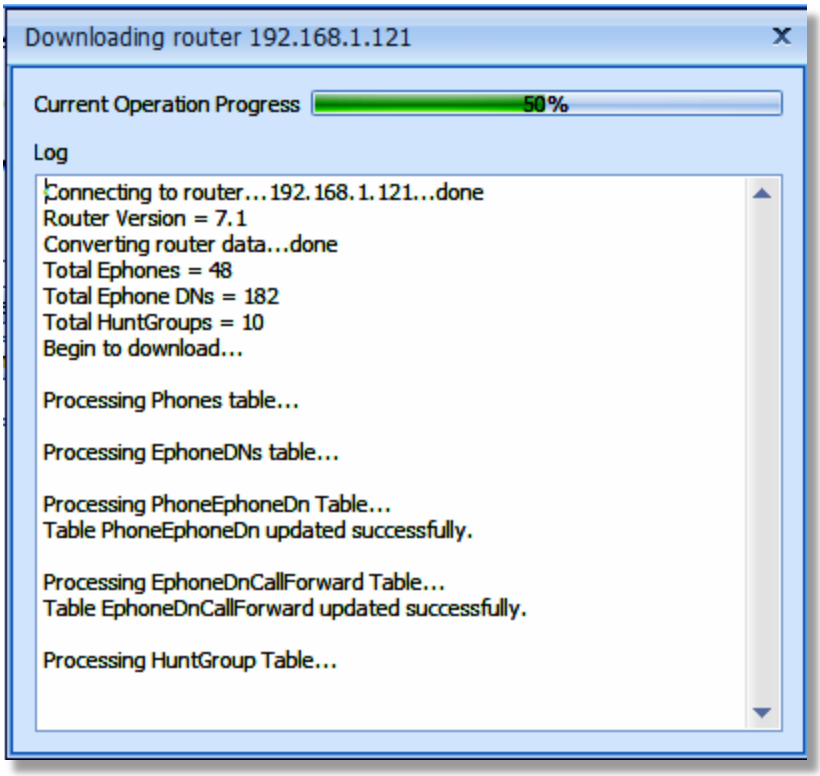


Figure 6-8 Download Router Information Progress Window

Note

The IP Phone configuration download requires the privilege level access to the router.

All IP Phones that are to be controlled by the CallConnector Server need to have the ephone username and password provisioned on the Cisco Smart CME router.

The Configuration Manager download the ephones, ephone-DNs and the hunt groups configured in the router. This information is saved in the CallConnector system databases

When the router phone configurations change – specifically the ephone, ephone-DN, hunt-groups, the changed phone information needs to be downloaded again to update the information saved in the CallConnector

In the event of some parsing error, the download process can stop. In this case, click on the close button to close the window.

6.4.6.1 List of Phones Configured in the Router

A list of all the ephones configured on the router is displayed in the table below the telnet parameters. For each ephone, the following information is displayed:

Field	Description
Checkbox	This is the first column in the ephone list that shows a checkbox at the column header and in all entries. Selecting the checkbox at the column header will select all the displayed entries in the list. When you filter a list, selecting the checkbox will select only the entries in the filtered list. Selecting the checkbox at an entry will select that entry. The selected entries will be highlighted. System administrators can view and reconfigure the selected phones in the Selected Phones tab.
Phone ID	The ID of the ephone in the Cisco CME system.
Name	The name used to log in to the ephone.
MAC Address	This 'Virtual MAC Address' is used as an identifier for the ephone. This should be unique for the CallConnector System and is required to be unique for each router.
Main number	The primary number of the ephone. Generally this is the first number of the first button of the ephone.
Phone IP	The IP address of the ephone.

Table 6-6 Description of Fields of the Downloaded Router Phones Table

6.4.7To Select Phones for CallConnector Server

Step 1 Locate the ephones you want to configure. You can search for the entries by typing the first few characters in the search field, or edit the filter criteria to retrieve a subset of data. See Locating Information for more details.

Step 2 Select the ephones by clicking the checkbox in the first column of the ephone entries. You may want to select all entries by clicking the checkbox in the header of the first column or by clicking on the Select All Phones button. If you filter the list, this action will select all the entries in the filtered list.

Step 3 Click on Save Selected Phones button or press Alt + P to save the selected ephone entries to the CallConnector database. Once saved, these phones will be displayed in the Selected Phones tab.

Note

CallConnector Users and Operators can be assigned a phone only from the Selected Phones list.

All IP Phones that are to be controlled by the CallConnector Server need to have the ephone username and password provisioned on the router.

You can download and re-select phones at any time. If the router phone configuration has changed then you MUST re-download to update the CallConnector databases with the current router phone configuration.

6.4.8 Selected Phones

This configuration page displays the phones that have been selected for the CallConnector users and operators. You can click on a specific phone to review the configuration of the phone buttons and lines. This page also allows you to update the configuration of the IP phones that will be controlled by the CallConnector Server. If you have downloaded the IP Phone configuration from the Cisco router and select the ephones for CallConnector use in the Download Router Info page, then the selected ephones will be shown in this page.

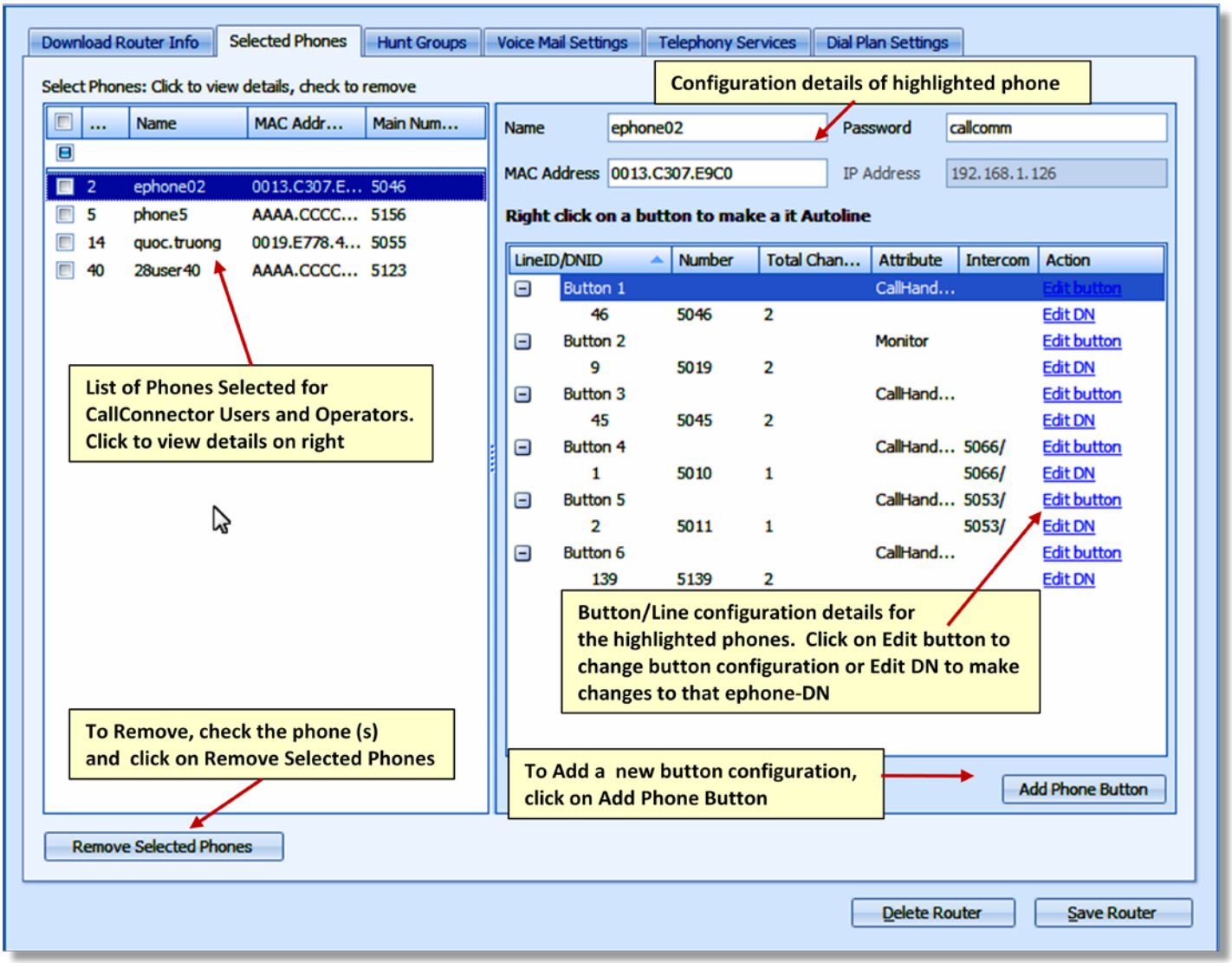


Figure 6-9 Phones Selected for the CallConnector Users

6.4.9 Ephone List

The left panel of the Selected Phones page shows the list of ephones that are to be controlled by the CallConnector users. If you did not download the router data and select any ephones in the Download Router Info tab, the list will be empty. The list is user customizable and allows you to sort the entries, search for entries by entering the first few characters, or edit the filter criteria to retrieve a subset of data. See Locating Information for more details.

Each ephone entry in the list displays the following information:

Field	Description
Checkbox	This is the first column in the ephones list that shows a checkbox at the column header and in all entries. Selecting the checkbox at the column header will select all the displayed entries in the list. When you filter a list, selecting the checkbox will select only the entries in the filtered list. Selecting the checkbox at an entry will select that entry. The selected entries will be highlighted. System administrators can view and reconfigure the selected phones in the Selected Phones tab.
Phone ID	The ID of the ephone in the Cisco CME system.
Name	The name used to log in to the ephone.
Password	The password used to log in to the ephone.
MAC Address	Physical or virtual MAC Address assigned to this ephone. This should be unique for the CallConnector System and is required to be unique for each router.
Main number	The primary number of the ephone. Generally this is the first number of the first button of the ephone.

Table 6-7 Description of Fields of the Selected Phone

Ephones can be removed from the list when they are no longer needed. Removing an ephone will prevent the CallConnector Server from controlling the ephone.

6.4.10 To Remove Selected Phones

Step 1 Locate the phones you want to remove. You can search for the entries by typing the first few characters in the search field, or edit the filter criteria to retrieve a subset of data. See Locating Information for more details.

Step 2 Select the phones by clicking the checkbox in the first column of the phone entries. You may want to select all entries by clicking the checkbox in the header of the first column. If you filter the list, this action will select all the entries in the filtered list. More than one phone can be selected for removal.

Step 3 Click on Remove Select Phones button or press Alt + E to remove the selected ephone entries from the database. Once removed, they disappear in the Selected Phones tab.

6.4.11 Ephone Details

The right panel shows the detailed information of the selected ephone and the list of its buttons and directory numbers. If you do not select any entry in the Ephone List, this panel will not display any information.

The upper part of the panel shows detailed information of the selected ephone and contains:

Field	Description
Name	The name used to log in to the ephone.
MAC Address	MAC Address of the phone. The MAC Address is required to be unique for the CallConnector System.
Password	The password used to log in to the ephone.
IP Address	The IP address of the ephone.

Table 6-8 Description of Fields for the Currently Highlighted Phone

Note

The phone username and password cannot be changed from the Configuration Manger.

The MAC Address can also be ‘virtual’ as in the case of multiple softphones running on one PC.

6.4.12 Ephone Buttons

LineID/DNID	Number	Total Channels	Attribute	Intercom	Action
Button 1	5156	2	CallHandling		Edit button
156	5156	2			Edit DN
Button 2	5157	2	CallHandling		Edit button
157	5157	2			Edit DN
Button 3	5158	2	CallHandling		Edit button
158	5158	2			Edit DN
Button 4	5034	1	CallHandling		Edit button
19	5034	1			Edit DN
Button 5	5036	1	CallHandling		Edit button
20	5036	1			Edit DN
Button 6	5021	2	CallHandling		Edit button
21	5021	2			Edit DN

Figure 6-10 Ephone Buttons and DNs

An ephone may contain multiple buttons. The number of buttons an ephone supports depends on the ephone type. For instance, the Cisco 7960 IP Phone supports 6 buttons.

Each button is displayed as a list entry on the Ephone Details panel. Each entry contains the ID and attribute of the button. The attribute specifies how the DNs will be used on this button. The values of attribute can be:

Call Handling: Calls can be made and received on the DN of this button.

Monitor: The status of the DN is displayed as idle/busy (or in-use) on this button. If the button or line is selected, then a call is placed to the associated DN.

Watch: The button displays the status of the IP phone which has this DN as the primary DN. If the button or line is selected, then a call is placed to the associated DN.

Overlay: There are multiple DNs associated with this button. Calls from each of these DN are presented to the line of button.

Silent Ring Muted: The button is configured not to ring and the call-waiting beep is muted.

Silent Ring Not Muted: The button is configured not to ring and the call-waiting beep is not muted.

Overlay Call Waiting: Indicates that overlay calls are waiting.

Expansion: This is a place holder to display the calls from another button.

An ephone may have a button designated as the preferred line to make outgoing calls. This button is called auto line. The Auto Line feature can be specified when adding a new button, or when editing the button properties, or by right-click on the button entry and select Make this button as Autoline. Only 1 button can be the auto line on an ephone at a time.

6.4.13 To Add New Button

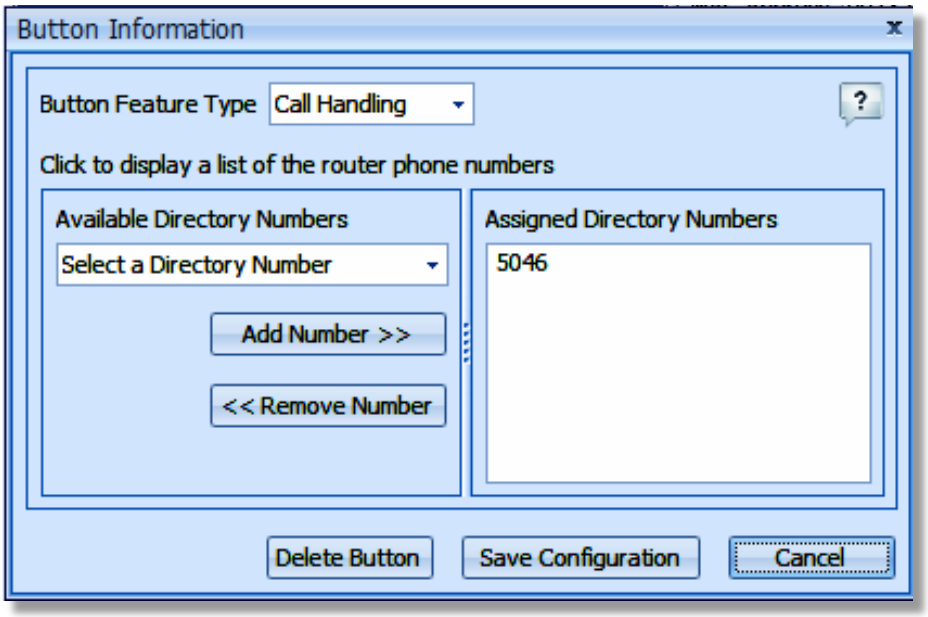


Figure 6-11 Button Details

Step 1 Locate and select the ephone you want to add new button on the list of ephones. You can sort entries, search for ephones by typing the first few letters or apply filter criteria to get a filtered ephone list. See Locating Information for more details.

Step 2 In the ephone button list, click Add Button or press Alt + B. The Button Information screen will be displayed.

Step 3 Select the attribute of the button in the Feature Type drop-down list.

Step 4 Check Auto Line if you want to dedicate the button to be the preferred line when making outgoing calls.

Step 5 Select a directory number from the list of available directory numbers and click Add button. The selected directory number will be listed as an entry on the Assigned Directory Numbers box.

Step 6 Repeat step 4 if you want to add more directory numbers. Note -- Only button with the overlay type can have more than one directory number.

Step 7 Click Save or press Alt + S to add the button to the selected ephone. The CallConnector Configuration Manager will write the changes to the router.

6.4.14 To Edit A Button

Step 1 Locate and select the ephone in the ephone list.

Step 2 On the Action column of the button, click Edit Button. The Button Information screen will be displayed.

Step 3 Select the attribute of the button in the Feature Type drop-down list.

Step 4 Check Auto Line if you want to dedicate the button to be the preferred line when making outgoing calls.

Step 5 Select a directory number from the list of available directory numbers and click Add if you want to assign a new directory number. The directory number will be listed as an entry on the Assigned Directory Numbers box. Only button with the overlay type can have more than one directory number.

Step 6 Select a directory number from the list of assigned directory numbers and click Remove if you don't plan to use it for the current line.

Step 7 Click Save or press Alt + S to save the details of the button. The CallConnector Configuration Manager will write the changes to the CME router.

Note If you remove all directory numbers belonging to a button, that button will be removed from the list of buttons for the selected ephone.

6.4.15 To Delete A Button

Step 1 Locate and select the ephone in the ephone list.

Step 2 On the Action column of the button, click Edit Button. The Button Information screen will be displayed.

Step 3 Click Delete button or press Alt + D.

Step 4 The Configuration Manager will ask for your confirmation before removing the button from the database. Click OK to confirm. The Configuration Manager will write the changes to the router.

6.4.16 Ephone Directory Numbers

Each button may have one or more directory numbers. Each directory number is displayed as an entry belonging to the button. Clicking on the plus sign or double-click the button entry will show the list of directory numbers configured on that button. Clicking on the minus sign or double-click the button entry will hide the list of directory numbers configured on that button.

For each directory in the button list, the following fields are available:

Field	Description
LineID/DNID	The button number or the ID of the ephone-dn in the Cisco CME system.
Number	The main extension number of this directory number.
Total Channels	The number of channels (lines) this ephone-dn supports: A single-line directory number has 1 channel. A dual-line directory number has 2 channels. An octo-line directory number has 8 channels.
Intercom	If the button is an intercom, then the intercom number and label is displayed in this field.
Action	This field allows you to edit and delete a directory number.

Table 6-9 Description of Fields for the Ephone Directory Number Table

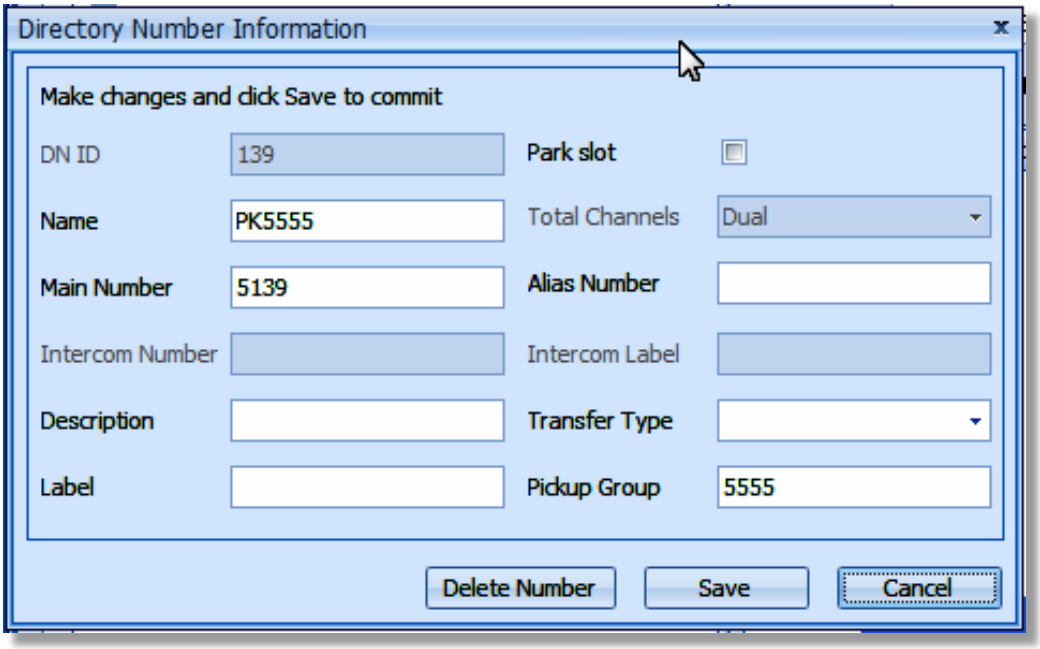


Figure 6-12 Ephone Directory Number Details

When you add or edit the ephone directory number, the following information is present and editable:

Field	Description
DNID	The ID of the ephone-dn in the Cisco CME system.
Name	The name of the directory number. The name is used for caller-ID displays and in the directory listings.
Total Channels	The number of channels (lines) this ephone-dn supports: A single-line directory number has 1 channel. A dual-line directory number has 2 channels. An octo-line directory number has 8 channels.
Main number	The main extension number of this directory number. This field is displayed in the Number column of the ephone-dn list.
Alias number	The secondary extension number for this directory number. Configuring a secondary number supports features such as call waiting, call transfer, and conferencing with a single ephone-dn.
Intercom Number	If the button is an intercom, then the intercom number is displayed in this field.
Intercom Label	The label of the intercom number. In the ephone-dn list, both intercom number and label are displayed in the Intercom column.
Description	The detailed description of the directory number.
Label	The label of the directory number is used for line displays on the IP phone.
Transfer Type	Transfer type can be blind or consult
Pickup Group	This directory number belongs to this pickup group.
Park Slot	This field indicates if the directory number is being used as a park slot.

Table 6-10 Description of Fields for the Ephone Directory Number Window

6.4.17 To Edit A Directory Number

Step 1 Locate and select the ephone in the ephone list.

Step 2 On the Action column of the directory number, click Edit DN. The Directory Number Information screen will be displayed.

Step 3 Edit the necessary information and click Save or press Alt + S. The Configuration Manager will write the changes to the CME router.

6.4.18 To Delete A Directory Number

Step 1 Locate and select the ephone in the ephone list.

Step 2 On the Action column of the directory number, click Edit DN. When the Directory Number Information screen displays, click Delete or press Alt + D.

Step 3 The CallConnector Configuration Manager will ask for your confirmation before removing the assigned directory number from the database. Click OK to confirm.

Step 4 The CallConnector Configuration Manager will write the changes to the CME router.

Note If you remove all directory numbers belonging to a button, that button will be removed from the list of buttons for the selected ephone.

6.4.19 Hunt Groups

After you download router configuration data, the Hunt Groups tab will retrieve and display the configuration data of all the hunt groups configured in the selected router. You can add new or modify or delete hunt groups.

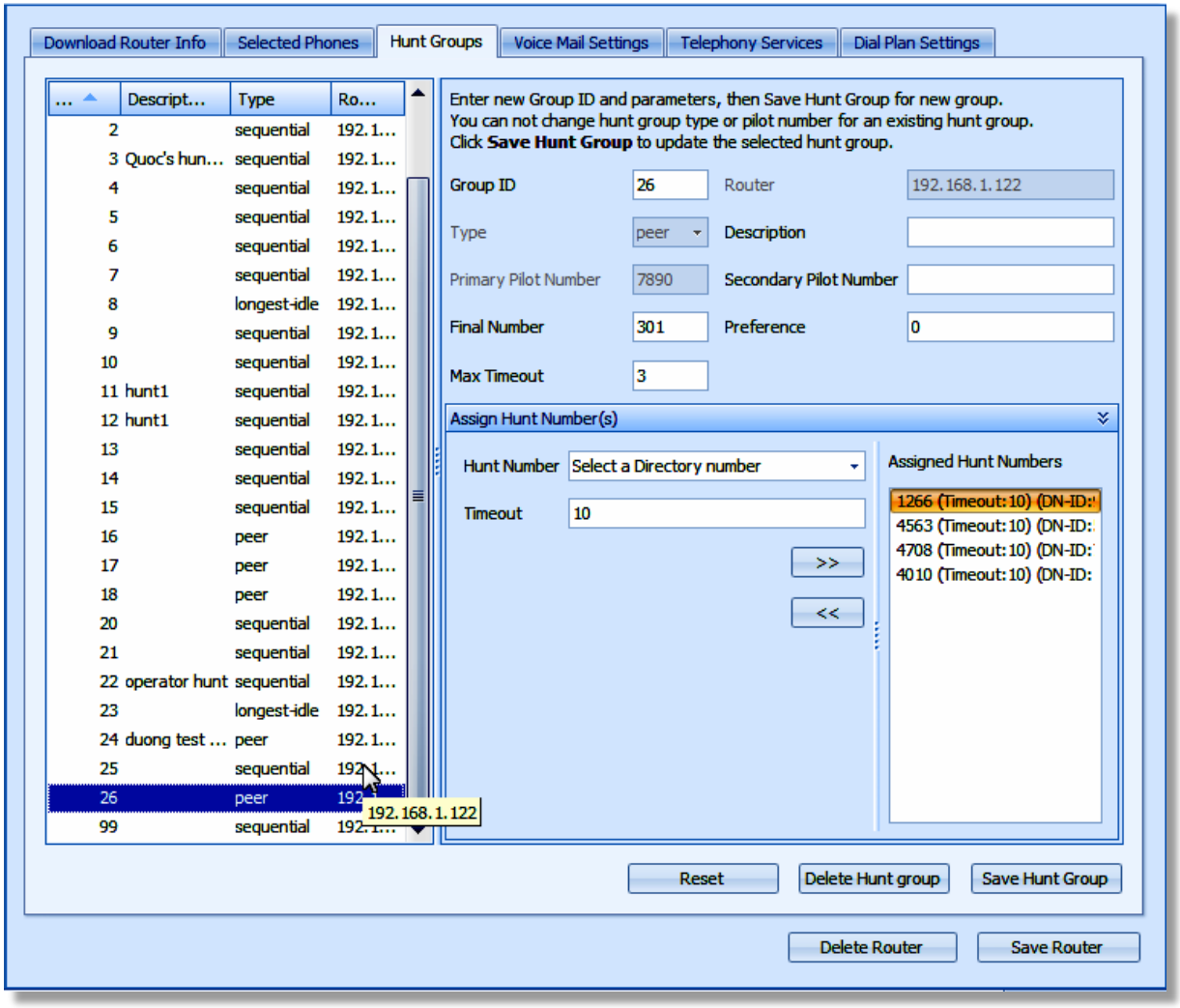


Figure 6-13 Hunt Groups Table

The left panel of the Hunt Groups tab shows the list of hunt groups configured in the Cisco router. If you do not download the router data or there is no hunt group configured on the router, this list will be empty. Select a group to view the configuration details in the panels to the right.

Each hunt group entry in the list displays the following information:

Field	Description
Router IP	The IP address of the router where the hunt group resides.
GroupID	Each hunt group has a unique ID in the router.
Description	The detailed description of the hunt group.
Type	The type of the hunt groups. Supported group types include: sequential, peer and longest-idle.

Table 6-11 Description of Fields for the Hunt Group List Table

6.4.20 To Add New Hunt Group

Step 1 On the Hunt Group Details panel, enter the details of the new hunt group. If you are viewing the details of another hunt group, you can click Reset or press Alt + R to get the empty form, or modify the existing data to match the data of the new hunt group.

Step 2 Assign directory numbers to the hunt group as instructed in Assigning Hunt Numbers section below.

Step 3 Click Add Hunt Group or press Alt + A. The Configuration Manager will write the information to the system database and to the router.

6.4.21 To Delete A Hunt Group

Step 1 Locate and select the hunt group in the hunt group list. The details of the selected hunt group will be shown in the Hunt Group Details panel.

Step 2 Click Delete Hunt Group or press Alt + E. The Configuration Manager will ask for your confirmation. Click OK to delete the selected hunt group.

Step 3 The Configuration Manager will remove the information from the system database and to the router.

6.4.22 Hunt Group Details

Upon selecting a hunt group, the details of the hunt groups will be displayed:

Field	Description
Group ID	Each hunt group has a unique ID in a router.
Router	The IP address of the router where the hunt group resides.
Type	The type of the hunt groups. The CallConnector Server supports 3 hunt group types: sequential, peer and longest-idle.
Description	The detailed description of the hunt group.
Primary Pilot Number	The primary pilot number which the callers dial to reach the hunt group.
Secondary Pilot Number	The secondary pilot number which the callers dial to reach the hunt group.
Final Number	The last number in the ephone hunt group, after which the call is no longer redirected.
Preference	The preference order for the ephone-dn associated with the hunt-group pilot number. The highest preference is 0.
Max Timeout	The maximum combined timeout in seconds for the no-answer periods for all ephone directory numbers in the ephone hunt list. The call proceeds to the final destination when this timeout expires, regardless of whether it has completed the hunt cycle.

Table 6-12 Description of Fields for the Hunt Group Details

6.4.23 To Edit A Hunt Group

Step 1 Locate and select the hunt group in the hunt group list. The details of the selected hunt group will be shown in the Hunt Group Details panel.

Step 2 Edit the detailed information of the selected hunt group.

Step 3 Click Save Hunt Group or press Alt + H to save the changes to the system database and the CME router.

6.4.24 Assigning Hunt Numbers

A hunt group contains a list of directory numbers to which the incoming calls are routed. The order of assigned hunt numbers and the hunt group type are important as they determine which numbers get the incoming calls. For instance, in a sequential hunt group, if there is an incoming call to the primary pilot number, it will be forwarded to the first available number in the Assigned Hunt Numbers list.

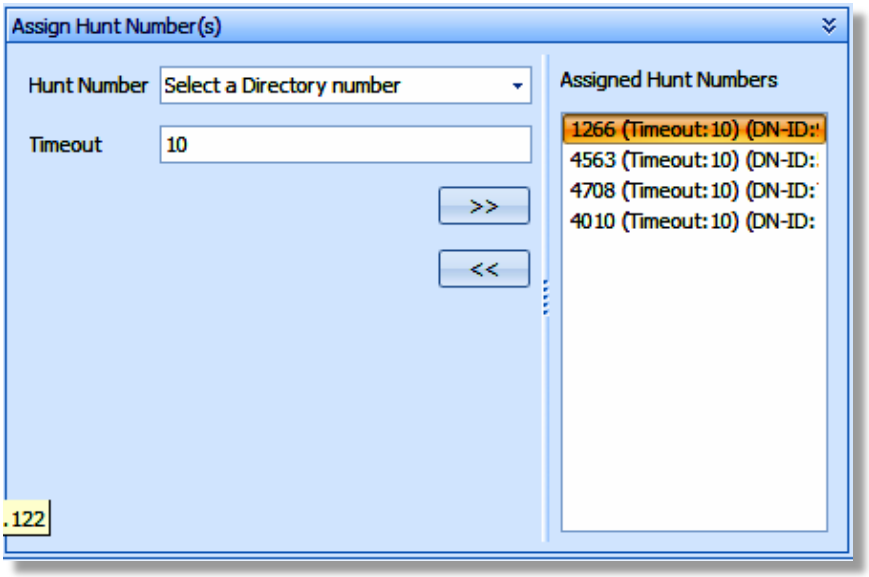


Figure 6-14 Assigning Hunt Numbers to the Hunt Group

6.4.25 To Assign Directory Numbers to A Hunt Group

Step 1 Locate and select a directory number in the hunt number list. Each directory number is displayed as an entry with the following information: DN ID, Name, Main Number, and Total Channels. For detailed information on these fields, see Ephone Directory Numbers section.

Step 2 Enter the number of seconds the line should ring before it forwards the call to the next hunt number in the Timeout field.

Step 3 Click the Add button (>>) to assign the selected directory number to the hunt group.

Step 4 Repeat step 1-3 to assign additional hunt numbers.

Step 5 Click Save Hunt Group or press Alt + H to save the changes to the system database and the router.

6.4.26 To Remove Directory Numbers Out Of A Hunt Group

Step 1 Locate and select the directory number.

Step 2 Click the Remove button (<<) to remove the selected directory number.

Step 3 Repeat step 1-2 to remove additional hunt numbers.

Step 4 Click Save Hunt Group or press Alt + H to save the changes to the system database and the router.

6.5 Dialing Plan Settings

The CallConnector Server dial plan is used for two purposes:

1. Convert a telephone number to a dialable number. This involves determining if the number is an internal extension or an external PSTN number. In the case of a PSTN number, the Dial-Out Prefix is added to the number and the number formatted for local or long distance dialing.

2. Convert an incoming number to the ‘canonical’ format to allow searching for the number in the CallConnector directories. Numbers in the CallConnector Directories are saved in a standard format known as ‘canonical’ format. For example the number 4085551212 in the United States is formatted as (408) 555-1212.

This conversion process utilizes dialing tables loaded during installation and the administrator entered Dial Plan setting parameters. Specifically the administrator needs to specify the following:

1. The country in which the router is located. The dialing tables are configured with the telephone number patterns for a number of countries.

2. The area code of the PSTN switch to which the router is connected. In countries that do not use area codes, this field is blank.

3. Length of the router extension number(s). If extension numbers have different lengths, then all the lengths have to be specified.

4. Dial Out Access Code. This is the digit(s) that indicate to the router that the number is a PSTN number.

These dialing configuration parameters are provisioned from the Dialing Plan Settings page of the Configuration Manager → Manage Cisco Router folder. Deployments with multiple routers need to specify these parameters for each router as the routers can be in different dialing locations.

Note

The Location Management window (in the Setup Routers and Servers Section) allows you to update the dialing tables for a country by adding area codes and lookup formats.

If the numbers in the directories are saved with the long distance code, then these numbers will fail to lookup for incoming calls because by the lookup number format removes the long distance code. There is an option in the Location Management window to “Pre-pend the long distance code for lookup numbers” for this situation.

6.5.1.1 Additional Number Translation Rules

For most major markets, the CallConnector Server is loaded with list of area codes and number patterns that deal with most dialing requirements. In cases where this is not sufficient, the Number Translation Rules allow the administrator to remove and insert digits to transform a number provided by the user into a valid dialable number. The Number Translation Rules are optional and can be configuration from the Dial Plan Settings page.

6.5.1.2 Converting to Dialing Number

The chart below describes the sequence in which a number supplied to the CallConnector Server by the client applications is converted to a dialable number.

Extension Number: If the user supplied number is an extension number it is dialed without any changes. The extension number determination is based on whether the number of digits in the user supplied number matches the extension length parameters specified by the administrator **Number Translation Rules**: The PSTN number is then checked against the Number Translation Rules. If this number matches the Input Pattern of a rule, then the specified prefixes are stripped and appended. This transformed number is then sent to the router.

Default Translations: The number is checked against the Number Patterns for the location to determine if it is an international number, if so the international prefix is added. If the number is a national number, then the area code is checked and removed if there is a match, The Dial-Out access code is appended and the resulting number sent to the router.

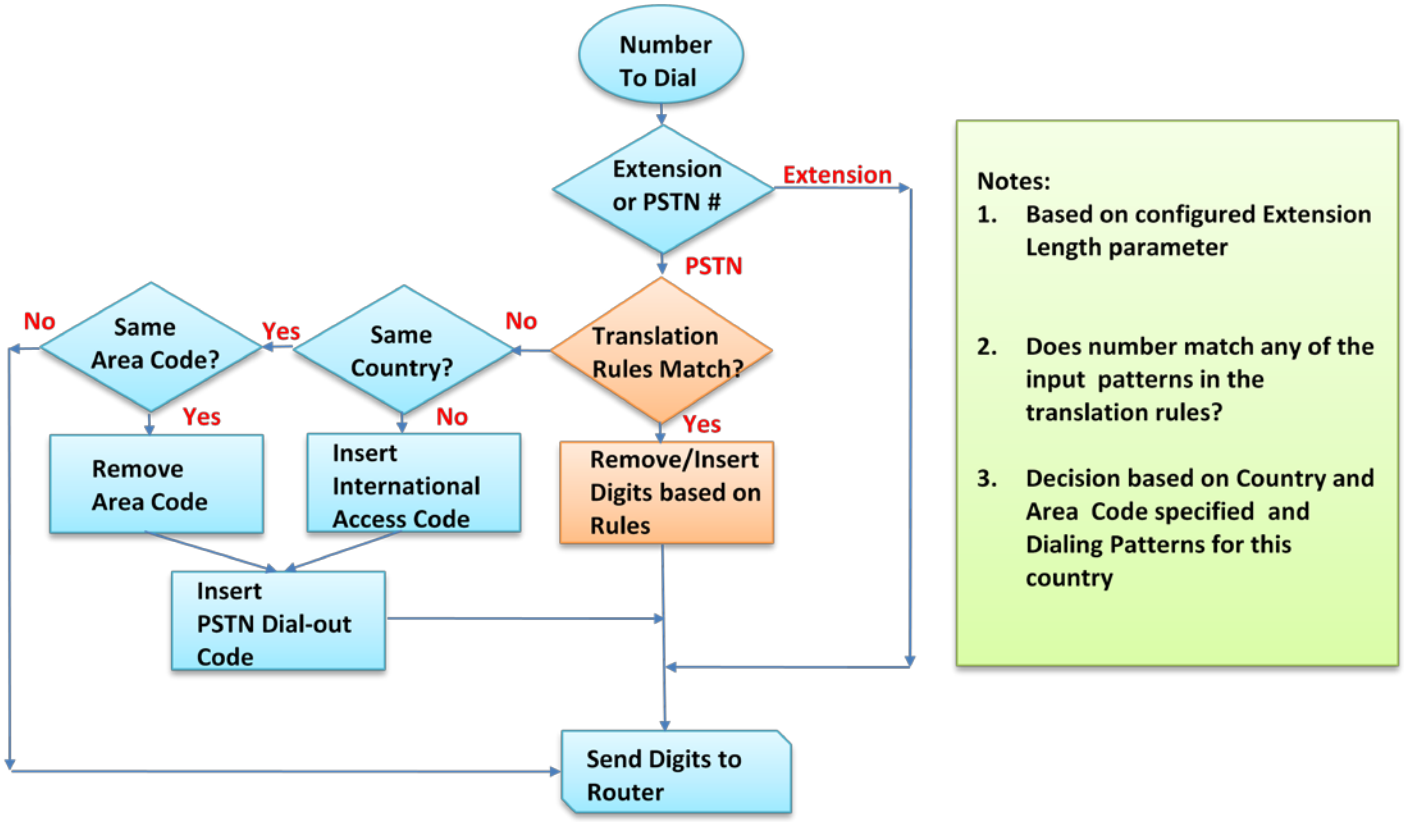


Figure 6-15 Process of Converting a Number Supplied by the User to a Dialable Number

Note

Any dial translations specified on the router can be applied to the numbers that have been dialed by the CallConnector Server.

If the area codes and dialing patterns are not correct or if additional patterns are required, and then add them from the Location Management window.

If your dialing plan requires the area code for local numbers, then you will need to add a translation rule for this.

The Operator Console and the Advanced Client use server-side dialing rules.

6.5.1.3 Dial Plan Settings Configuration Page

This page is comprised of three areas:

Dial Plan Parameters: Administrator need to enter and verify the Country, Location, Extension Length and the Dial-Out Prefix setting.
Number Test Area: This allows the administrator to enter a number and see how it will be dialed and looked up.
Number Translation Rules: If the numbers are not being dialed or looked up correctly, then translation rules can be specified to correctly handle the number.

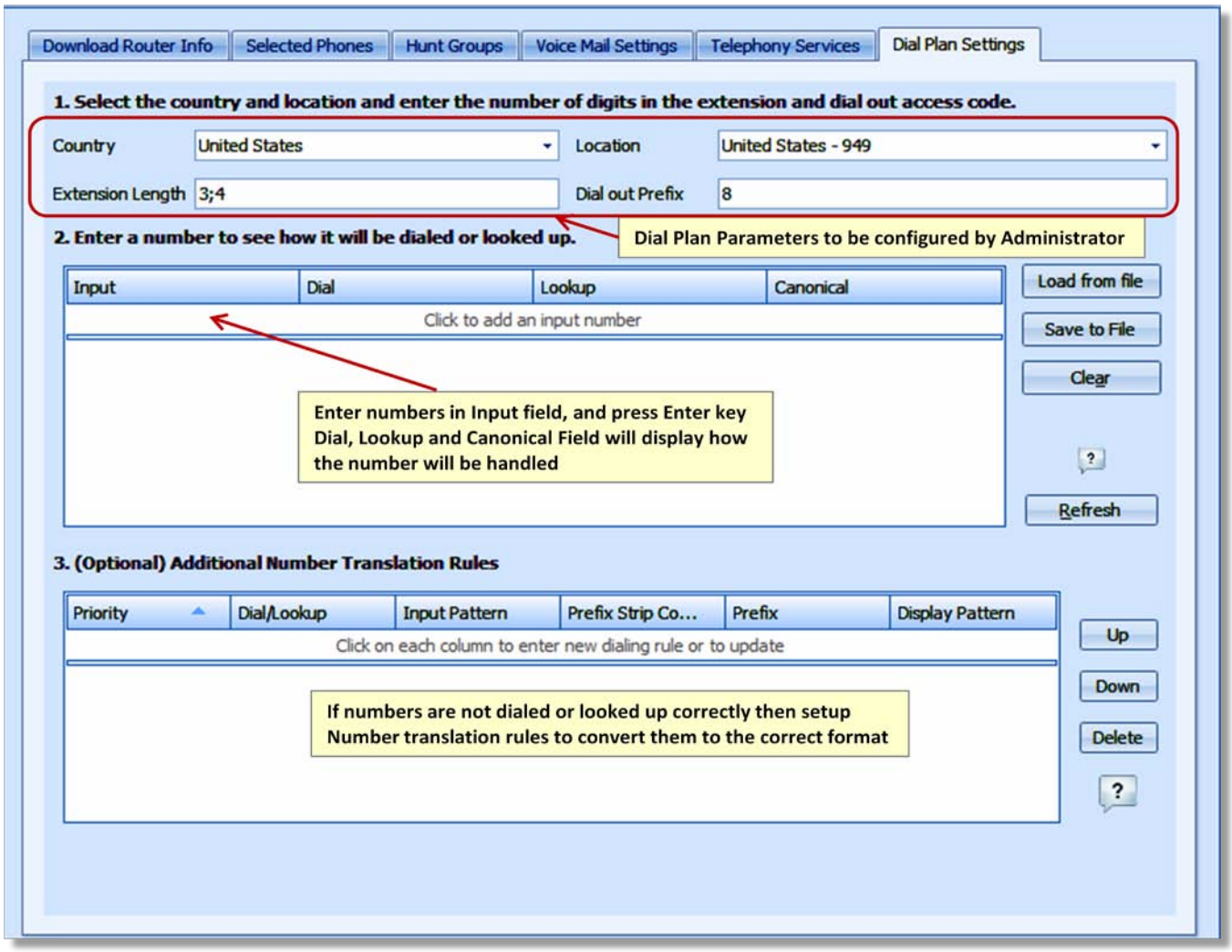


Figure 6-16 Dial Plan Settings Window with Three Sections - Dialing Parameters, Verify Number Translation and Manual Translation Rules

6.5.1.4 Dial Plan Parameters

The Dial Plan parameters are for each router and include:

Country: This is the country in which the router is located – more specifically it is the location of the PSTN switch to which the router is connected for making outgoing calls.
Location: This is generally the area code of the switch to which the router is connected. In some countries, area codes are not used. In this case the location can be a country with blank area code.
Extension Length: This is the number of digits in the internal extension numbers. If there are extensions with different lengths, then enter each number separated by a semi-colon (no space).
Dial Out Prefix: This is the digit(s) required to make a call outside the router.

6.5.2To Setup the Dialing Plan Parameters

Step 1 In the Setup Routers and Server section, select the router that you are configuring from the Manage Cisco Routers folder.

Step 2 Click on the Dial Plan Settings tab. This will display the configuration page for entering or changing the dialing parameters.

Step 3 Select the country from the pull down list. You can expand the list and click on the name field to sort the country names. The country selection specifies the internal country code and the number pattern.

Step 4 Select the location of the router from the Location pulldown list. The location specifies the area code of the PSTN switch the router is connected to. If the location is not specified, then you will need to add the location from the Location Management folder. (See later in this chapter for more details)

Step 5 Enter the extension lengths. Each length should be separated by a semi-colon – no space. If the router has extension numbers of different extension lengths, then add all the extension lengths.

Step 6 Enter the Dial-Out prefix. This is the number that needs to be prefixed to all numbers that are dialed outside the router.

Step 7 Click on Save Router to save and write the Dialing Parameters to the database.

Note The dialing plan settings from the first router are collected and saved during installation. These should be displayed when the Configuration Manager is first started. You can modify these settings are required.

The Dialing Parameters have to be specified for each router even if they are the same. This is because the routers can be connected to different PSTN switches in different locations.

The dialing plan parameters are saved with the router information in the CallConnector database. If the router is deleted, then this information is lost.

6.5.2.1 Test How a Number will be Dialed or Looked up

You can check how numbers will be translated and dialed or looked up without making calls using the test facility available in the Configuration Manager.

The table below the Dialing Parameters Allows you to key in the telephone numbers, press the Enter key and view how the CallConnector Server will convert this number to a dialable or lookup format.

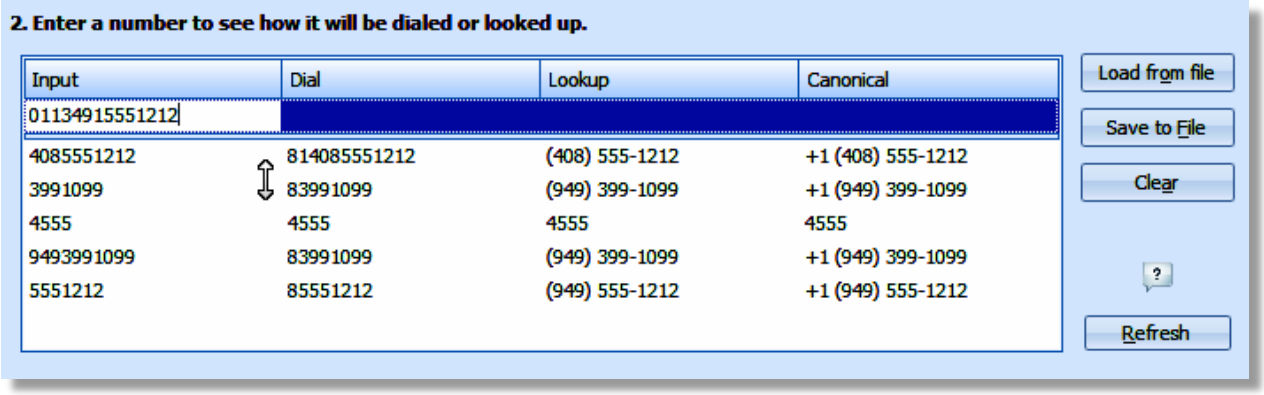


Figure 6-17 Verify How a Number will be Dialed or Looked up

There is one input field and three output field in the table as described below:

Field	Description
Input	Enter the telephone number that you want to test. This can be a number for outgoing call or the caller-id number supplied by an incoming call.
Dial	This field displays how the number will be dialed (sent to the router) by the CallConnector Server..
Lookup	The Input Number will be converted to the Lookup format and then searched in the directory database for a matching contact name. You can enter the Caller ID as seen on the phone display to determine how that incoming number will be converted to perform a look up.
Canonical	This is the standardized format for representing telephone numbers. Numbers are saved in the canonical format in the directory.
Load From File Button	This option can be used to read in the test telephone numbers from a text file. Each number is on a separate line.
Save to File Button	The test numbers entered in the Verify Number Dialing table can be saved to a text file and used multiple times. This is useful especially if you are setting up dialing rules and need to run through the number verification several times.
Clear	This button clears all the text from the Verify Number Dialing table.

Table 6-13 Description of Fields in Verify Number Dialing Table

6.5.3To Test How a Number will be Dialed or Looked up

Step 1 First setup the Dialing Parameters and the Number Translation Rules have seen setup for a router

Step 2 Enter the number you want to test. This can be a number that is to be dialed from a client application or it can be an incoming number that needs to be converted so that the contact name for this number can be determined.

Step 3 You can also enter the numbers you want to test in a text file with each number a line. Then use the Load From File button to read in the numbers.

Step 4 Press enter to view how these numbers will be dialed or looked up.

Step 5 If the number is not dialed or looked up correctly then you will need to correct the Dialing Parameters, the Dialing Patterns or set up additional Dialing Rules as described in the next section.

Note

You should use the Verify Number Dialing table to debug number translation and look up issues.

It is recommended that you create a file of all different types of numbers that can be dialed or calls received from..

For outgoing numbers verify that the number is being converted correctly for the router.

For incoming numbers, verify that the lookup format for the caller-id is the same for the related contact in the directory

Note the caller-id format displayed in the telephone and that received from Radius can be different. Both formats of incoming numbers should be properly formatted by the dialing transformation tables.

If you have multiple router in different locations, then you will need to create the dialing rules for each router and test them for correct operation.

6.5.4 Additional Number Translation Rules

The Number Translation Rules provide methods to handle dial plan requirements that are not covered by the default dial tables. The Number Translation Rules allow an administrator to override the default processing for generating Dialable or the Lookup numbers. There are two types of Number Translations – Dial and Lookup

6.5.4.1 Dial Translation

The Dial Translation Rules are applied to the telephone numbers for the outgoing calls. It is designed to generate a dialable number from numbers that are formatted for display in directories and applications. A dialable number needs to include the access code for dialing out of the router (as opposed to internal extension numbers), the toll access code (if required), the area code either added or removed, the international access code for out of country numbers etc. These requirements vary with each country and location within the country,

6.5.4.2 What is Not handled by Number Translation

The Number Translation Rules compare the supplied number against the Input Pattern and if there is a match, a number of specified digits are removed (including zero digits) from the left and optionally append from the left the specified digits.

The dialing rules do not handle requirements for pauses, for dialing account codes or extension numbers after the primary number,

6.5.4.3 Lookup Translations

The Lookup Translations are required to match the caller-id to the numbers stored in the directory to be able to look up contacts. Since the numbers are saved in the directory in the "canonical format" and the incoming caller-id numbers may be in differing formats. The Lookup translation specifies the rules that can convert the caller-id number to the same format as the numbers in the directory so that the lookups can be successful. A simple example is of local numbers stored in the directory with area codes which may be missing in the caller id. The lookup translation can prefix the area code before the numbers is looked up in the directory.

Figure 6-18 Number Translation Rules Table

Rules for processing Dial Translations

1. The dialing translations are specified for each router. Even if the translations are the same, they will need to be specified for each router.
2. There are two different translations – a) for dialing and b) lookup. Dialing Translation converts a telephone number to a number that can be sent to the router for dialing out. The lookup translation converts telephone numbers provides from a) Radius messages – both internal extension and external PSTN numbers and b) caller and called numbers provided through the skinny messages. All numbers that have to be looked up may require translation rules to convert the incoming format to the format stored in the directory.
3. The translations are performed in the order of priority until a match for the Input Pattern is encountered. Processing stops at the first rule that can be executed. All subsequent rules are ignored.
4. Patterns specify the format of the input number to the translation. You can use the letter ‘x’ to specify any digit. For example xxxx indicates any number that is four digits long and between 9999 and 0000. ‘x’ should be used when the input number has to be of a specific length. The character period ‘**.**’ is used to denote any subsequent digits regardless of the length. For example ‘551**.**’ indicates any number starting with 551 that is greater or equal to four digits in length.
5. The ‘Strip’ function removes the specified number of starting digits from the input. For example Strip=3 will remove the first three digits from the matching pattern.
6. Pre-pend function appends the specified digits to the front of the number once the Strip function has been performed.

6.5.4.3.1 Configuring Dialing Translations

The default dialing and lookup dialing rules are applied to the incoming and the dialing out numbers based on the router location setting. In a number of situations, these default translations are not sufficient. The Number Translation Table allows you to setup custom rules to handle any special number translation requirements for your locale.

For each dialing translation rule, the following parameters need to be specified:

Field	Description
Priority	Priority defines the precedence or execution order for the rules. Lookup and Dialing have their separate execution orders. Rules are processed starting with one and moving down the list. Processing stops when there is a match for a pattern.
Type	There are two types of number translations – Lookup for incoming numbers that have to be converted to the canonical format to enable searching in the directories; and Dialing in which canonically formatted numbers are converted to a dialable number with Dial Out codes and Long Distance and Area codes.
Pattern	Pattern is the specification of the input number for which the translations are to be performed. Here 'x' means any number between 0 and 9; '.' Means any number of that length or greater. Examples of patterns include: xxxx -- any four digit number 555xxxx – any seven digit number starting with 555 408xxx. – any number starting with 408 and greater than six digits.
Strip	Remove the specified number of digits from the right of the input numbers.
Pre-Pend	Add the specified numbers to the left of the input number
Displayable Pattern	The format to associate with the matching input number

Table 6-14 Description of Fields in Number Translation Table

6.5.5To Setup a Number Translation Rule

Step 1 First setup the Dialing Parameters and identify the number translation problems. You can verify these problems suing the Verify Number Dialing table.

Step 2 Select the Translation Type (Dial or Lookup) from the second column of the Translation Table.

Step 3 Enter the Input Pattern. Since the processing stops at the first matching Input Pattern you need to carefully enter the more specific patterns first followed by the more general patterns. Specific number lengths are recommended using the 'x' character to specify any number between 0 and 9.

Step 4 Enter the number of digits you want to remove from the left of the Input Pattern. This can be zero.

Step 5 Enter the digits you want to append to the left on the resulting number after the digits have been removed,

Step 6 Adjust the order or priority of processing by using the Up/Down buttons on the right.

Step 7 Test the new rules to verify that the dialing or lookup problem is resolved using the Verify Number Dialing table above.

Step 8 Save the Translation Rules by pressing the Save Router button.

6.6 Setup Radius

The Cisco routers must be setup to send Radius accounting messages to the CallConnector Server. The CallConnector Server uses these accounting messages to derive the telephone status of the router extensions. In this configuration, the router is the Radius client and the CallConnector Server is the Radius server which receives the messages. The Radius messages are sent using UDP packets to the CallConnector Server IP address to a specific port. The default port is 1646 for the accounting messages. If there are multiple routers, they must all be setup to send the Radius accounting messages to the CallConnector Server.

The Configuration Manager Setup Radius window allows administrators to configure each router connected to the CallConnector Server to send the Radius messages. The Setup Radius window provides the following functions:

1. Displays whether a router is correctly configured to send accounting messages to the CallConnector Server,
2. Provides an interface to enter the password or 'authentication key' and the desired port.
3. The Setup Radius button sends configuration commands to the router to provision the Radius Accounting parameters.
4. Two diagnostic windows allow the administrator to verify if the accounting messages are being received by the CallConnector Server and if the router is sending the accounting messages using the router debug settings.

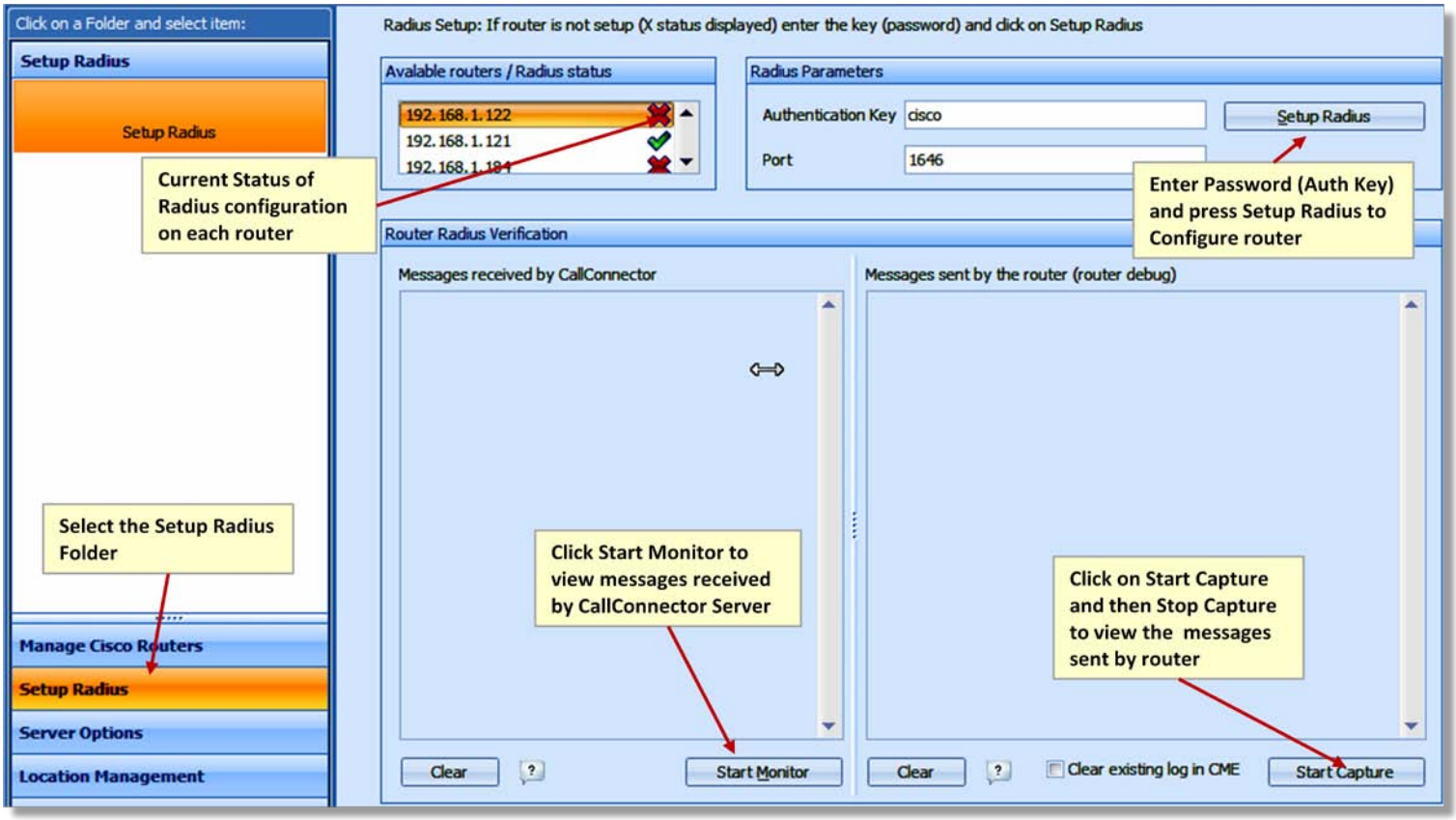


Figure 6-19 Setup Radius Window

Note

The ‘Authentication Key’ or password must be the same on all routers

The CallConnector Server IP Address must a static IP Address as the routers are configured to send messages to that specific IP Address.

The Port setting must be the same on all the routers.

If the router or the CallConnector Server is restarted, the state of the calls in progress is not restored.

6.6.1 Available routers/Radius status

When you click on the Setup Radius tab, it will get the list of Cisco routers connected to the CallConnector Server and automatically check for the provisioning of the radius accounting connections parameters on each of these routers.

If the router is configured correctly to send the Radius accounting messages to the CallConnector Server, then a green checkmark will appear next to the router name. You have the option to update these radius communication parameters setting in the router.
If the radius parameters have not been setup or are incorrect, then a Red Cross mark appears next to the router name. In this case, you have an option to setup the radius parameters on the router. You can also capture the debug log and send it to technical support to fix the problem.

6.6.2 Radius Parameters

Two radius parameters have to be entered for each router in order for the CallConnector Server to receive radius accounting messages:

Authentication key: This is the password value used to authenticate the communication between the Cisco router and the CallConnector Presence Server. This value must match the Radius Server Key value set in the Cisco router. (In the following example, this would be uccserver: radius-server host 1.1.1.1 auth-port 1645 acct-port 1646 key **uccserver**)

Port: The Radius Accounting Server opens this port to receive the accounting messages. This value must match the Radius Server Accounting Port value set in the Cisco router. (In the following example, this would be 1646: 1646: radius-server host 1.1.1.1 auth-port 1645 **acct-port 1646** key uccserver).

The authentication key and port number must be identical for all Cisco routers.

6.6.3 To Setup Radius

Step 1 Select the router in the Available Routers list. If the radius configuration for the selected router is not correct or has not been setup yet, the button in the Radius Parameters section will show Setup Radius.

Step 2 Enter the authentication key and port number and click Setup Radius or press the shortcut Alt + S.

Step 3 The Configuration Manager will connect to the selected router and write the configuration data to the router. It will then validate the new radius configuration and update the status of all routers in the Available

routers/Radius status window.

6.6.4To Update Radius

Step 1 Select the router in the Available Routers list.

Step 2 Enter the authentication key and port number and click Setup Radius or press Alt + S.

Step 3 The Configuration Manager will connect to the selected router and write the new configuration data to the CME router. It will then validate the new radius configuration and update the status of all routers in the Available routers/Radius status window.

6.6.5Router Radius Verification

This allows you to check and verify the radius activity between the CallConnector server and its Cisco CME routers. There are two levels of verification:

Monitoring: Records the on-hook and off-hook status of the IP Phones registered on the Cisco CME router. This method can be used to monitor any IP phones connected to the CallConnector server.

The monitor log looks like:

Monitor radius status started on 192.168.1.122
Perform On-hook Off-hook on a Cisco IP Phone that is registered on 192.168.1.122
Received package from router 192.168.1.122:
Callee=
Caller=4153
CallRefId=2
CallState=1
FCID=575256117B0911DEBBCFFF281A4B5D90
ForNumber=4153

Received package from router 192.168.1.122:
Callee=
Caller=4153
CallRefId=2
CallState=2
FCID=575256117B0911DEBBCFFF281A4B5D90
ForNumber=4153

Received package from router 192.168.1.122:
Callee=
Caller=4530
CallRefId=3
CallState=1
FCID=89996F927B0911DEBBD3FF281A4B5D90
ForNumber=4530

Monitor radius status stopped.

For each log entry, the below information is present:

Field	Description
Callee	The number of the called party.
Caller	The number of the caller.
CallRefId	The ID of the call. A call may have multiple log entries. Each entry presents a different state of the call.
CallState	The status of the call. The value of this field can be: 1: Off-Hook 2: On-Hook 3: Ring-Out 4: Ring-In 5: Connected 6: Busy 8: Hold
FCID	The Feature Correlation ID of the call. Each call has a unique FCID.
ForNumber	The number of the caller or the called party depending on the direction of the call.

Table 6-15 Description of Information Fields in Monitor Radius Message Window

Debugging: Records the radius messages on the Cisco router. This method is usually used when the radius server is not working properly and you want to capture the log in order to debug it or to send it to technical support. The debug log looks like:

Perform off-hook and on-hook on a Cisco IP Phone on router 192.168.1.252 to capture radius debug message.
Click Capture button again when done to export the log.
009230: Jul 28 20:17:26.901: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.113:1645,1646 is not responding.
009231: Jul 28 20:17:26.901: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.113:1645,1646 is being marked alive.
009232: Jul 28 20:17:26.901: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.17:1645,1646 is not responding.
009233: Jul 28 20:17:26.901: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.17:1645,1646 is being marked alive.
009234: Jul 28 20:17:27.285: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1645,1646 is not responding.
009235: Jul 28 20:17:27.285: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1645,1646 is being marked alive.
009238: Jul 28 20:17:36.261: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.113:1645,1646 is not responding.
009239: Jul 28 20:17:36.261: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.113:1645,1646 is being marked alive.
009240: Jul 28 20:17:36.869: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.17:1645,1646 is not responding.
009241: Jul 28 20:17:36.869: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.17:1645,1646 is being marked alive.
009242: Jul 28 20:17:37.125: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1645,1646 is not responding.
009243: Jul 28 20:17:37.125: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1645,1646 is being marked alive.
009244: Jul 28 20:17:46.129: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1646,1645 is not responding.
009245: Jul 28 20:17:46.129: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1646,1645 is being marked alive.
009246: Jul 28 20:17:47.205: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.17:1645,1646 is not responding.
009247: Jul 28 20:17:47.205: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.17:1645,1646 is being marked alive.
009248: Jul 28 20:17:47.237: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.113:1645,1646 is not responding.
009249: Jul 28 20:17:47.237: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.113:1645,1646 is being marked alive.
009250: Jul 28 20:17:47.461: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1645,1646 is not responding.
009251: Jul 28 20:17:47.461: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1645,1646 is being marked alive.
009252: Jul 28 20:17:56.101: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1646,1645 is not responding.
009253: Jul 28 20:17:56.105: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1646,1645 is being marked alive.
009254: Jul 28 20:18:06.377: %RADIUS-4-RADIUS_DEAD: RADIUS server 192.168.1.199:1646,1645 is not responding.
009255: Jul 28 20:18:06.381: %RADIUS-4-RADIUS_ALIVE: RADIUS server 192.168.1.199:1646,1645 is being marked alive.

6.6.6To Monitor Radius Status

Step 1 Select the router in the Available Routers list.

Step 2 Click Start Monitor or press Alt + M. The button will be changed to Monitoring and the Configuration Manager begins to capture the radius messages and append them to the Monitor Log.

Step 3 When the log becomes too long and if you don't need all the messages, you can click on Clear to delete all the current messages in the Monitor Log.

Step 4 Click Monitoring button when you are done with the monitoring process.

6.6.7To Capture Radius Debug Status

Step 1 Select the router in the Available Routers list and click on Start Capture or press Alt + C. The status of the button will be changed to Capturing.

Step 2 Select Clear existing log in router option if you want to delete all the radius messages that already exist in the selected Cisco router before capturing.

Step 3 Click on Clear if you want to delete all the current messages in the Debug Log.

Step 4 Clicking on Capturing will stop the capturing and return you the radius messages in the router. All these information will be appended to the Debug Log.

Step 5 You can then examine the debug log to see what may get wrong or copy and send it to Cisco technical support.

Note

You have to stop the Presence Server before you can monitor or capture the radius status.

The Telnet account provisioned for each router must have executive level privileges to allow the configuration parameters to be written to the router.

To view the router Radius Debug messages, Enable Debug Log must be set.

6.7 Server Options

6.7.1 Addresses and Ports

The CallConnector Server is comprised of multiple server applications that run as services on the Windows Server PC.

These server applications communicate with endpoints that are on the network using a number of protocols including TCP, UDP, HTTP, and Telnet. This requires specification of the IP Address and ports of the Server PC that are to be used by the CallConnector Server applications. The IP address and port configurations are set to default values at installation time and can be changed from this Addresses and Ports page.

All the Server application need to be accessible from the CallConnector client applications from the user's PCs.

The CallController Server can support two separate sets of connections – SIP/TCP & UDP connections to the CallConnector clients and SCCP/TCP and RTP/UDP connections to the Cisco routers. If required, these sets of connections can be on different network adapters. By default the CallController Server network adapter card used to connect to the Cisco routers is the same as the network adapter used for the CallConnector SIP connections to the clients. The CallController Server can also sets up HTTP session with the IP Phones.

The Presence Server application supports two separate sets of connections – SIP/TCP & UDP connections to the CallConnector clients and RADIUS/UDP connections to the Cisco routers. These sets of connections can be on different network adapters. By default the Radius Server network adapter card used to connect to the Cisco router is the same as the network adapter used for the Presence Server SIP connection.

The Database Server provides interfaces to read and write parameters on the router using Telnet.

The CallConnector client/server communication does NOT support traversal across routers using the NAT mechanism. Any router between the CallConnector client and server PCs must be SIP aware and able to transport SIP messages.

Each of the Smart CallConnector Server applications need to be setup and configured to allow them to:

Step 1 Communicate using SIP messages.

Step 2 Accessing the functions for which they are providing services.

Step 3 Enable the debug trace capability and debug file as needed.

Step 4 Setup the Windows environment for these applications to run as services

The configuration information is saved in Windows registry files associated with the server applications as well in files and databases.

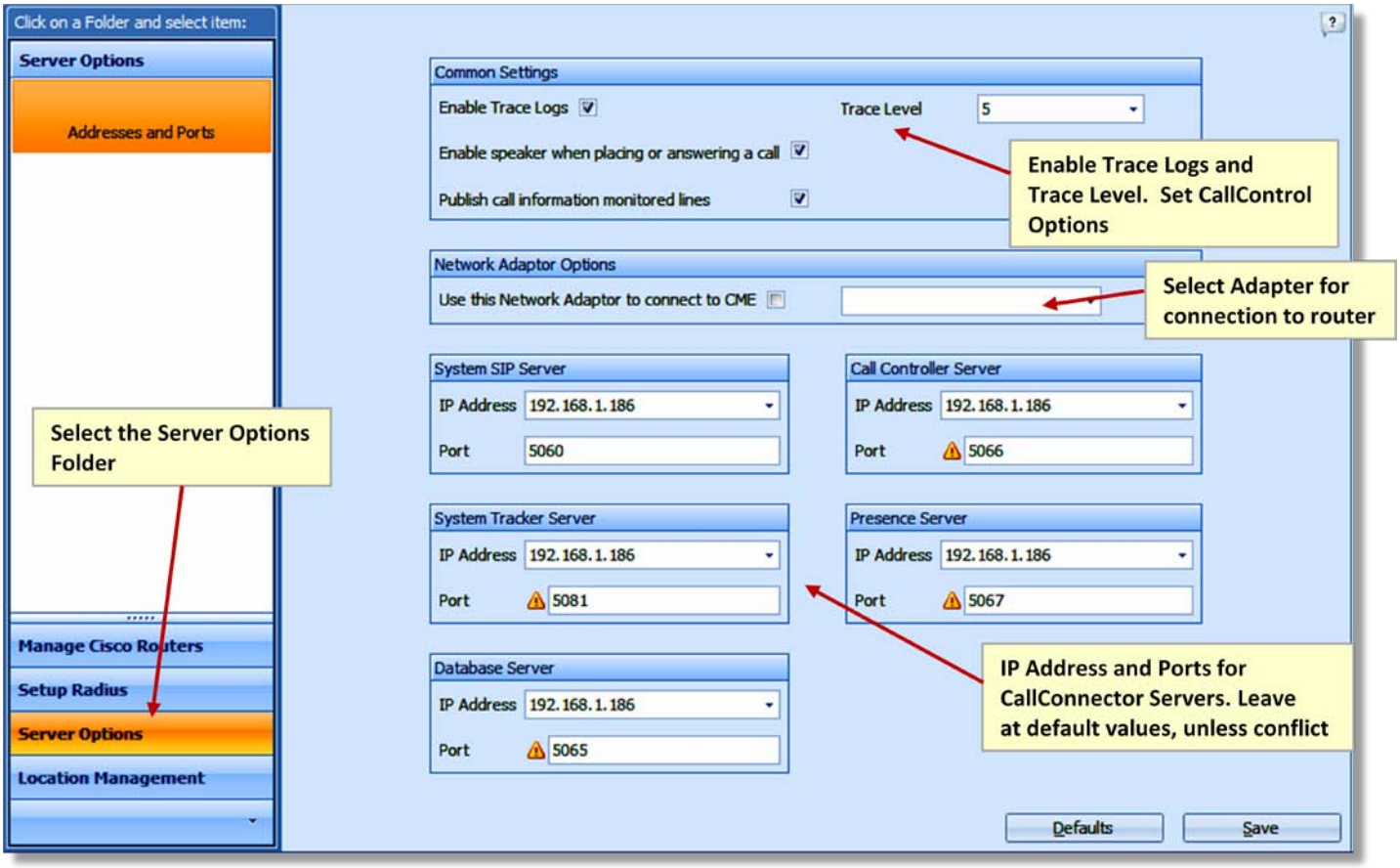


Figure 6-20 Server Options Configuration Window

Note

Enable Trace Logging and set the Trace Level from the Common Settings section of this window.

Check “Use this Network Adaptor to Connect to CME” only if there are more than one network adapters and the client PC and the Cisco routers are on different networks. Enable checkbox and use pulldown list to specify the alternate adapter. By default, the same adapter as the CallConnector Servers is used to connect to the router.

The Server application IP Address must be one of the local PC network adapters. This IP Address must be a static IP address. The default port values are setup at installation time. Only change these default values if there is a port conflict.

The warning symbol indicates that there is a port conflict. Move the mouse over the symbol to see details of the application that has the port open.

6.7.1.1 Trace Logs

Each of the server application supports writing trace and debug information to log files. This trace function can be enabled from the Common Settings. There are five trace levels defined. For each level, all the trace messages for that level and below are written to the log files.

Trace Level	Name	Description
1	Error	Defect in a feature or function. In the critical situation, the application will terminate.
2	Warning	Generally indicating resources are being depleted.
3	Information	Information messages for significant events in the operation of the application.
4	Debug	Summary level trace messages to assist in debugging the application.
5	Trace	Verbose level trace messages for debugging the application.

Table 6-16 Description of Debug Trace Levels

Selecting a trace level in the Configuration Manager will record all the log messages belonging to the levels that are more critical to it and itself. For instance, if you select 4, the Configuration Manager will write all the log messages that belong to level 1, 2, 3 and 4. The default trace level is 5.

The log messages are written to individual files for each server application. The name of the file is the server name and the file extension is .log. Information is written to the trace log file until the maximum size setting for the trace files is exceeded. The current trace file is renamed to .bak and a new trace file is created. If a backup file exists, it is deleted.

The trace files are saved in the Trace Log folder under the CallConnector Server. Internet downloadable applications UltraEdit, BareTail and Bare-Grep can be used to view them.

6.7.2To Enable Trace Logs

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select Enable Trace Logs in Common Settings. When you enable trace log, the debug messages for all CallConnector servers will be written in the Trace Log folder under the CallConnector Server installation folder. Each CallConnector server application will have a separate log file.

Step 3 Select the trace level. Selecting a low trace level will include the log messages from the higher trace level.

Step 4 Click Save or press Alt + S to save the changes.

6.7.2.1 System SIP Server

The System SIP Server (ccSSS) provides CallConnector client and server applications authentication (Registrar function) and routing of the SIP messages (Re-Direct Server function). All CallConnector clients and servers first login to the System SIP Server at startup. This is the central component that authenticates users and server applications and routes the SIP messages.

Parameters for the System SIP Server and the System Tracker need to be setup to allow the Smart CallConnector server applications and clients to run properly.

A failure of the System SIP Server will affect CallConnector system in the following ways:

Step 1 All CallConnector clients and Server applications starting up will fail and provide 'unable to connect' with SIP Server error message.

Step 2 Existing connections will continue to be in place until the subscriptions or registrations timeout and need to be renewed. These attempts will fail.

Step 3 The Service Management indicates System SIP Server is stopped.

Step 4 All CallConnector Server applications should be restarted upon SIP Server failure.

6.7.3To Configure System SIP Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address of the network adapter card on the computer on which the CallConnector Server software has been installed. The System SIP IP Address can also be a network address if that domain name has been registered with the local Domain Name Server (DNS). Note: All the Smart CallConnector Server Applications need to communicate with the System SIP Server and connect to this SIP Server IP Address.

Step 3 Enter the port on which the Smart CallConnector System SIP server will receive messages. The default port for the System SIP Server is 5060. This port is used to receive UDP messages. The System SIP Server also uses a fixed port 39984 (TCP and UDP) to connect to the Database Server for authentication services.

Step 4 Click Save or press Alt + S to save the changes.

6.7.3.1 System Tracker Server

The System Tracker supports the automated recovery of the connections in the event of failures. It provides the following services to the CallConnector system:

Step 1 The System Tracker Server (ccSystemTracker) supports the automated failure recovery capability of the CallConnector components.

Step 2 It monitors the status of the CallConnector Server applications by polling them individually.

Step 3 Each CallConnector client connects to the System Tracker to receive CallConnector Server status notification.

Step 4 If a CallConnector Server application stop or get disconnected then the System Tracker determines this information from its polling and notifies the client of this state change – Connected and Disconnected, Ready or Not Ready.

Step 5 Clients use this notification to enable or disable the services they make available to the user.

A failure of the System Tracker applications will affect CallConnector system in the following ways:

Step 1 CallConnector clients starting up will not be able to receive the CallConnector Server status to allow them to continue.

Step 2 The CallConnector client user interfaces will be grayed out; as the clients will assume that all the Server applications are down

Step 3 Established sessions (clients) will not know; will not get CallConnector Server failure notifications.

Step 4 Subscription timeouts causing re-subscribe will fail.

Step 5 When the System Tracker returns; all subscriptions will need to be re-established

Step 6 To recover stop and restart System Tracker.

6.7.4 To Configure System Tracker Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address of the computer with the System SIP Server as provisioned for the System SIP Server.

Step 3 Enter the port used by the System Tracker to receive messages. The default value is 5071. This port is used for both TCP and UDP connections. If this port is not available, then change this to a port available on the computer.

Step 4 Click Save or press Alt + S to save the changes.

6.7.4.1 Database Server

The CallConnector Database Server provides access to the configuration, contact and transactional data to all the CallConnector servers and clients.

The Database Server provides gateway functions between SIP messages and the SQL database command. SIP User Agents such as CallConnector clients' access configuration, contact and transaction data from standard SQL databases by sending SIP messages to the Database Server. The Database Server supports the SIP Message methods. When it receives a database request, it fulfills the request from the attached SQL database and returns the data/response to the requestor.

Database Server supports synchronization feature; allowing add/delete/updates to be kept current

If the Database Server fails, then:

Step 1 User cannot log-in– cannot be authenticated.

Step 2 Call Logs lost for the down-time.

Step 3 If Database Tables corrupted; then database has to be restored from customer backup of CallConnector Server.

There are two aspects to the configuration – setting up the communication parameters to handle the SIP messages and setting up the access to the database system.

1. The Database Server uses Microsoft ADO objects to connect to the Access compatible database files stored in the Data folder under Smart CallConnector Server.

2. Windows Data Source tools in the Control Panel Administrative Tools-> ODBC Drivers provides interface to administer and verify settings.

3. The Database Server connects to three databases – UCCDatabase database that contains the provisioning information, Corporate database that contains the corporate directory data and the CallLog database that stores the transaction data for example call logs.

4. The databases should be regularly backed up and in the event of corruption or other problems that latest configurations can be restored from the backups.

6.7.5To Configure Database Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address or network address of the computer with the System SIP Server. If the Smart CallConnector Server components are all installed on one computer, then this address will be the IP address of this machine.

Step 3 Enter the port used by the Database Server to receive messages. The default value is 5061 and is used for both TCP and UDP connections. If this port is not available, then change this to a port available on the computer.

Step 4 Click Save or press Alt + S to save the changes.

6.7.5.1 Call Controller Server

The CallController Server connects to the Cisco router to control the user's IP phones. To setup the CallController, you need to configure the following information:

Step 1 Specify the SIP communication parameters for the CallController Server in the Server Options page.

Step 2 Obtain a list of the IP phones that are present on the Communication Cisco Smart CME router. This can be done by using the Manage Cisco Routers (CME) page.

Step 3 Specify or select the IP Phones that are to be controlled by the CallController Server. You should select only the phones that will be accessed and controlled by the Smart CallController users. See Configure CME Routers.

Step 4 Verify that the selected phones can be accessed and controlled by the CallController Server.

6.7.6To Configure Call Controller Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address or network address of the computer with the System SIP Server.

Step 3 Enter the port used by the CallController Server to receive messages. The default value is 5063 and is used for TCP and UDP connections. If this port is not available, then change this to a port available on the computer. Note – in addition to the SIP connection, the CallController Server sets up one TCP connection for each selected ephone and for the softphones it will setup UDP connections for handling the RTP media.

Step 4 Click Save or press Alt + S to save the changes.

6.7.6.1 Presence Server

The Smart CallConnector Presence Server reads in the user configuration data and the corporate directory information and maintains the user's presence and telephone status information. The Presence Server incorporates a Radius Accounting Server functionality to receive the telephone status updates from the Cisco Smart CME. The user presence information and telephone status is published to all authorized clients in real-time.

6.7.6.2 Presence Configuration Notes

1. The Presence Server publishes the list of contacts in the Corporate directory database grouped by their departments. It also manages and publishes the presence status (availability and location) and the telephone status of these users in real-time.
2. Contacts in the Corporate directory can be CallConnector users and non-users. A CallConnector user has a user login account created via the Configuration Manager Directory – User page. Presence status is published for both types of users.
3. For non-CallConnector users, this provides a bulletin-board type function. The status of such users can be updated by the manager of that user's group or by users with administrative rights.
4. Only the CallConnector users can update their own status; administrators or managers can change the status of the contacts in the status window.
5. Telephone status is <u>only published</u> if there is a match on the caller or called number with one of the user's work, work-2, home or mobile numbers in the CallConnector Corporate directory.
6. For the telephone numbers to match, the caller/called number and the numbers in the database must be in the same format – preferably in the canonical format. This requires the server dial plan to be correctly setup.
7. Call logs are only written for the CallConnector users. The call log entries include the caller/called name if there is a match in the Corporate directory. Names in the user's Outlook contacts are not included in the call logs.
8. Presence Access control can only be applied to the Groups/Departments defined through the Configuration Manager Directory – Group page. This allows the administrator to control which users can view the availability status of users in other groups.
9. The department field in the Corporate directory can contain department names that are not in the 'Group' list.
10. The status of the users in 'departments' that are not in the Group list are visible to all the CallConnector users.

The Presence Server filters out telephone status messages from telephone numbers that are not in the CallConnector Corporate Directory. Even though you might see the Radius events for a phone number, the telephone status may not display in the Status window. Therefore to receive telephone status events, the following must be properly configured:

1. Router must be configured to send Radius messages to the CallConnector Server.
2. CallConnector Server must receive the Radius messages.
3. The telephone numbers (caller or called) must be in the Corporate Directory.
4. The CallConnector Server Dial plan must be properly setup so that the numbers as provided in the Radius messages can be formatted for lookup. This means that after lookup formatting the incoming number will be identical to the 'canonically' formatted number in the directory.
5. The telephone numbers in the CallConnector directory is saved in the 'canonical' format e.g. (408) 555-1212. The telephone numbers in the Radius message are not formatted. The Presence Server uses the CallConnector Server dialing rules to convert the Radius provided telephone numbers to the canonical format and then searches the Corporate Directory for a match. You will need to verify that the dial plan is correctly configured on the server so that the numbers sent in the Radius messages (as displayed in the Radius Monitor Log) are being formatted to allow successful searching.

If the Presence Server fails, then:

Step 1 Status windows in the CallConnector Clients are grayed out.

Step 2 Users cannot change their presence status.

Step 3 Users Presence Status will not be current.

Step 4 Call Logs are not written and are lost for the duration that the Presence Server is down.

Step 5 Other CallConnector servers are un-affected.

6.7.7To Configure Presence Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address or network address of the computer with the System SIP Server.

Step 3 Enter the port used by the Presence Server to receive messages. The default value is 5062 over which TCP and UDP connections are supported. If this port is not available, then change this to a port available on the computer.

Step 4 Click Save or press Alt + S to save the changes.

6.7.8To Configure Automation Server Communication

Step 1 Select Server Options/Addresses and Ports.

Step 2 Select the IP address or network address of the computer with the System SIP Server.

Step 3 Enter the port used by the Automation Server to receive messages. The default value is 5072 to 5077 over which TCP and UDP connections are supported. If these ports are not available, then change the base port number to a port range available on the computer.

Step 4 Click Save or press Alt + S to save the changes.

6.7.9Call Controller Options

6.7.9.1 Network Adaptor Options

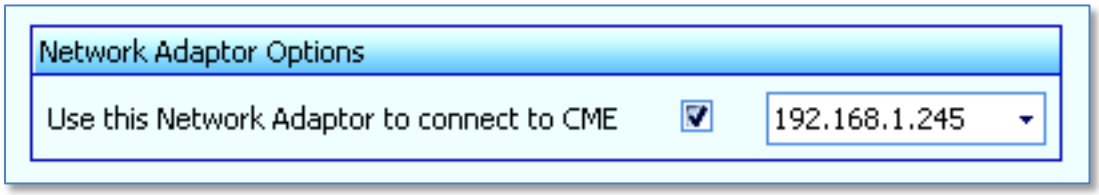


Figure 6-21 Network Adaptor Options

Since the Server PC may have more than one network adapter card connected to different networks, administrators need to select which network card (by specifying the card IP address) should be used by a CallConnector Server application.

6.7.10 To Change Network Adaptor

Step 1 Select Server Options/Call Controller Options.

Step 2 Check on Use this Network Adaptor to connect to CME.

Step 3 Select the IP Address in the list of available network adapter card IP addresses.

Step 4 Click Save or press Alt + S to save the changes.

6.7.10.1 Other Options

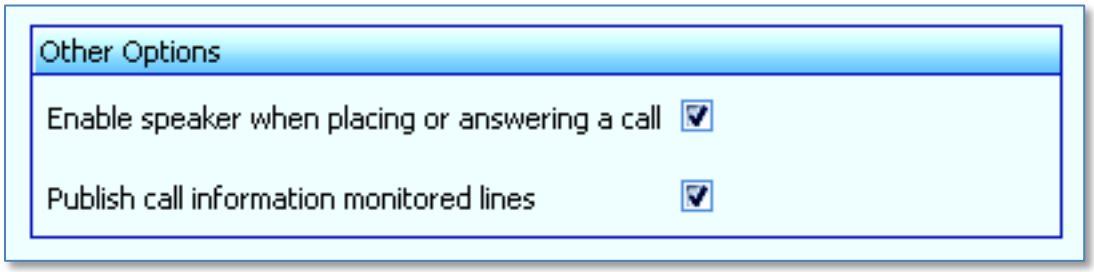


Figure 6-22 Call Controller Options

Enable speaker when placing or answering a call: When a call is placed or answered from the CallConnector client the speaker on the IP Phone is automatically turned on when this option is enabled.

Publish call information for shared lines: Checking this option enables publishing call state information for shared calls. An ephone-DN is considered to be shared if the DN is present on multiple IP Phones. The affect of this option is to disable popup notification for calls on this button. Users will not see the call state changes for this line on their CallConnector client.

Publish call information for monitored lines: Checking this option enables publishing call state information for monitored calls. An ephone-DN is considered to be monitored in the line button type is set to be ‘monitored’. Deselecting this option globally disables popup notification for calls on monitored DNs. Users will not see the call state changes for this line on their CallConnector client.

6.8 Location Management

The Location Management window allows administrators to select a country specify the area code and PSTN number pattern for a location. Once a location has been defined it can be selected from the Manage Cisco Routers → Dial Plan Settings configuration page.

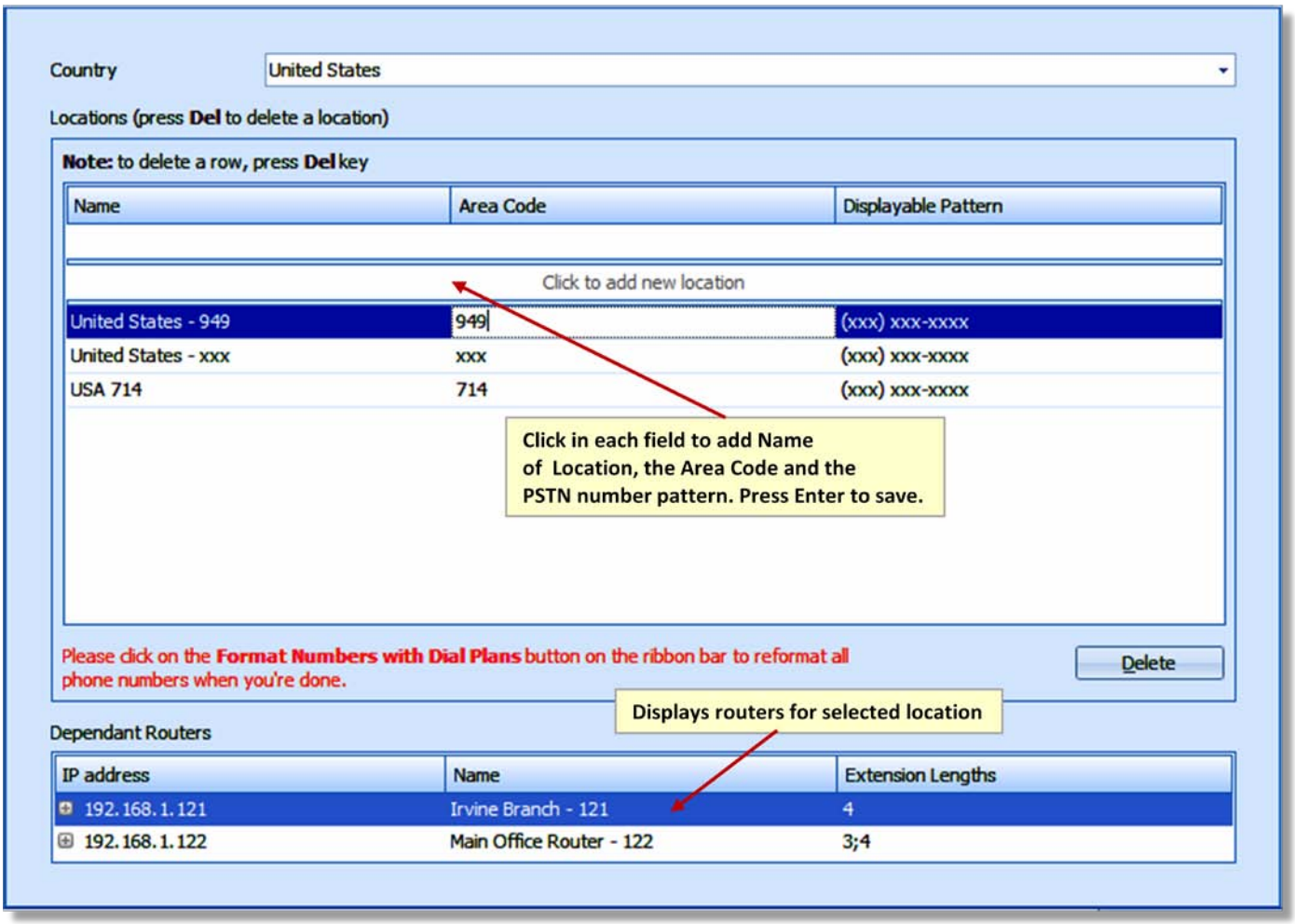


Figure 6-23 Specifying the parameters for a location

6.8.1 To Add New Location

Step 1 Select the Location Management folder.

Step 2 From the pulldown list, select the country where you want to specify the location.

Step 3 Click on the second blank row (with text Click to add new location).

Step 4 Under the Name field, enter a descriptive name for the location.

Step 5 In the area code field, enter the area code for the PSTN switch the router is connected to.

Step 6 In the Displayable Pattern, enter the format of the PSTN telephone number as it will be displayed,

Step 7 Press Enter or click outside the row to save the changes.

6.8.2To Edit Current Location

Click on the field for the location that you want to change, make the changes. Press enter to save.

6.8.3To Delete A Location

Select the location you want to delete and then press the Delete button to remove the location specification.

6.8.4To Pre-Pend Long Distance Code for Lookup

By default the CallConnector Server dial plan strips the long distance access code from the PSTN numbers. Some customers have contact numbers in the directory and Outlook with this long distance code. For these numbers the look-up of incoming caller numbers fail. In addition, when numbers are added to the directories, again by default, the CallConnector will remove the long distance code.

The option to pre-pend the long distance access code, available per country in the Location Management window, allows you to over-ride this behavior and always add in the long distance code for the PSTN numbers for lookup as well as when saving the number in the directory.

Select the location you want to delete and then check the option to “Pre-pend long distance access code to all lookup numbers”. The change is made immediately, however the Servers need to be restarted for this to be re-loaded.

6.9 Service Management

The Smart CallConnector Server applications run as Windows services and do not have any user interfaces. The status of these services can be viewed in the Windows Task Manager and the Servers page of the CallConnector Configuration Manager.

The Smart CallConnector Server applications can be started in two ways:

Step 1 From the Service Management window

Step 2 From the Windows Services

Note that you have to setup the server communication parameters correctly before you can run a server. Some server services are correlated meaning that starting/stopping a server application may start/stop the other server services too.

6.9.1Using Service Management

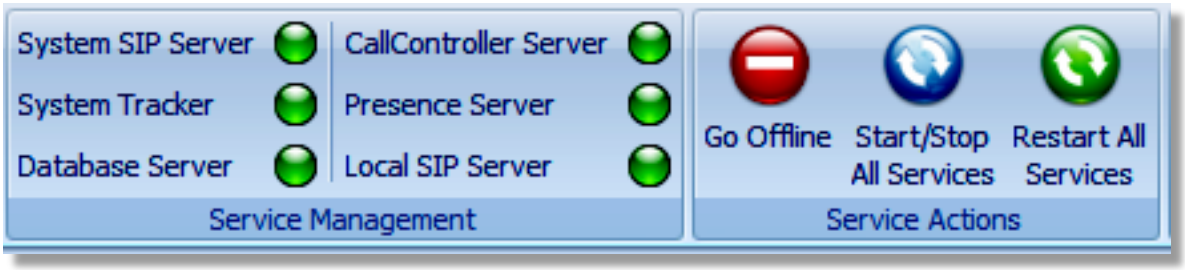


Figure 6-24 Service Management

The Smart CallConnector Service Management Window keeps track of the status of all installed CallConnector Server services and allows you to start and stop the server applications. It displays all the server services that the CallConnector system supports along with their running status. The status can be:

Status Icon	Description
	The server service is running.
	The server service is stopped. If it is stopped unexpectedly, check the Server Options to make sure that the communication parameters for the server is setup correctly, and check the trace log to determine the root cause of the problem.
	The server service is not installed.
Go Offline	Stop all the CallConnector Server service applications
Start/Stop All Services	If services are started, then stop them. If services are stopped, then stop them.
Restart All Services	Stop all the CallConnector Server service applications and then restart them.

The Service Management supports 3 actions:

Go Online: in order to authenticate you to the CallConnector system, the system sip server, the system tracker, the database server and the local sip server services have to be running. This action will start these four server services and let you begin working on configuring data in the Configuration Manager. This menu item is generally available when you go offline.

Go Offline: this action stops the Local SIP server and logs you out of the CallConnector system. You may not able to work on the Configuration Manager until you select Go Online from the Actions menu.

Start All Server Services: this action starts all the server services. The services are started in their dependency order.

6.9.2To Start the Server Services

Step 1 Click on the red status icon of a running server service to start it. The CallConnector Server will start the server and all its dependent server services. The status icon of the started server services will be changed to green.

Step 2 You can also select Start All Server Services from the Actions menu to run all CallConnector server applications.

Step 3 When you are offline, selecting Go Online from the Actions menu will start the System SIP Server, the System Tracker, the Database Server and the Local SIP Server.

Note

The server services should be started in the following order: System SIP Server, System Tracker, Database Server, Call Controller Server, Presence Server, and Automation Server.

All the server communication parameters have to be setup correctly in the Server Options in order for the server services to get started.

6.9.3To Stop the Server Services

Step 1 Click on the green status icon of a running server service to stop it. The CallConnector Server will stop the server and all dependent server services. The status icon of the stopped server services will be changed to red.

Step 2 If some services do not stop, then open the Task Manager and from the Process window select the server services and click on End Process.

Note

Stopping the CallConnector server services will turn off the features in the CallConnector clients and may cause both the CallConnector server and clients to work unexpectedly.

Stopping any of these server services: System SIP Server, System Tracker, Database Server and Local SIP Server will stop the connection between the CallConnector server and the Cisco routers and log you out of the CallConnector system.

6.9.4Using Windows Services Manager

The Windows Services interface displays all the service applications that have been configured for that computer and describes their current status. This window also allows you to start and stop these services. In order for a server application to be displayed in this window, the application has to be configured to run as a service.

The Services management application one of the Administrative tools available with the Windows operating system. To open the Services application, from the Control Panel select Administrative Tools and click on Services.

This will open the Windows Services management application. The Smart CallConnector Server applications all start with cc… as shown in the picture below.

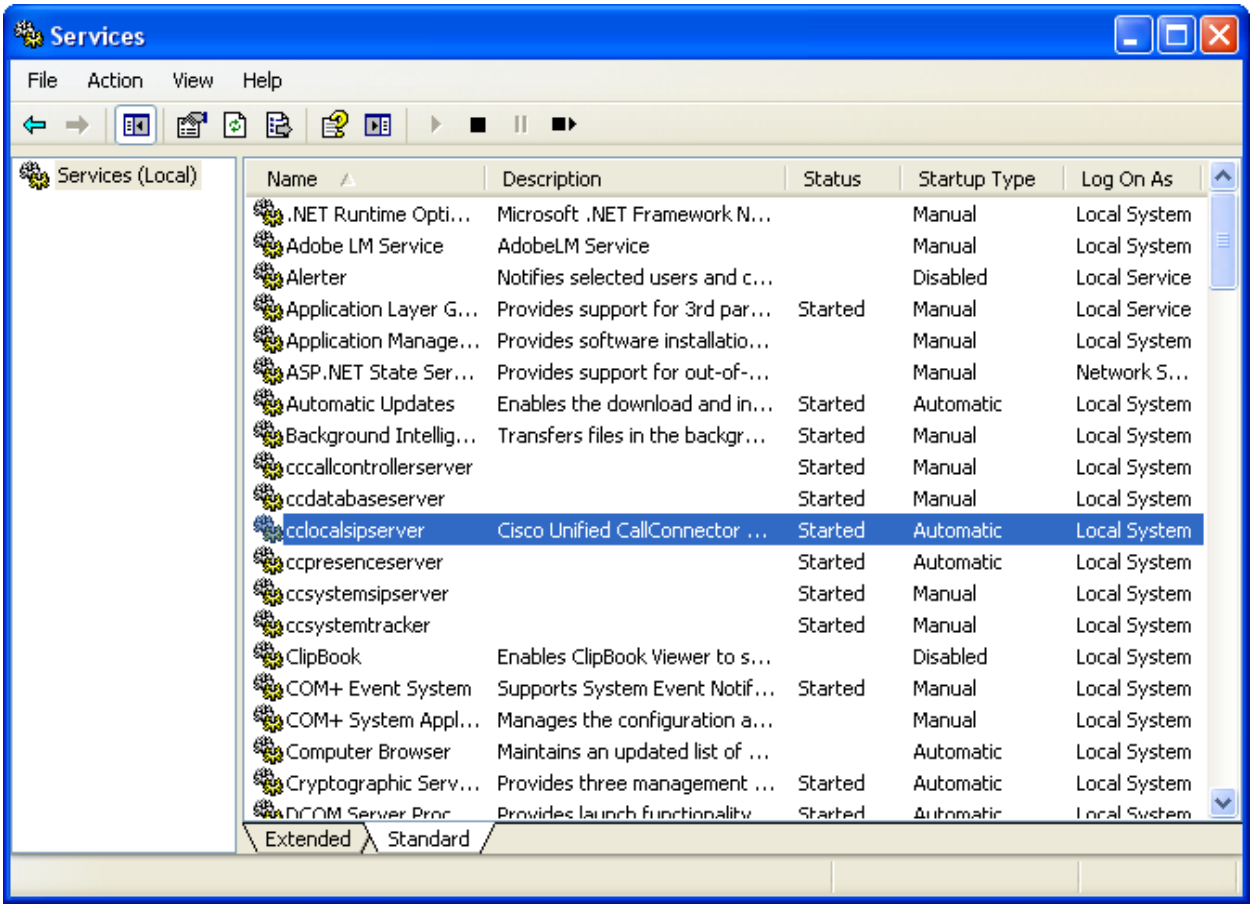


Figure 6-25 Windows Services

From this services window, you can perform some of the following functions:

Start/Stop a Service
Setup the service to start with Window Startup
Define the Recovery actions if the service fails.

The Smart CallConnector installation program will setup some CallConnector Server Applications as manually started Windows services on the Server PC with the admin rights. It also sets the Recovery actions to automatically restart upon failure.

6.9.4.1 To Start the Server Services

Step 1 Open the Windows Services application from Control Panel → Administrative Tools → Services.

Step 2 Select the Service that you want to start by clicking on the service name.

Step 3 Click on the Start button or right-click and select Start.

Step 4 If the select server service requires other server services to run, the Window Services application will ask if you want to start the dependent services too. Click on Yes or press Enter to continue.

Step 5 When the selected service is running, the status will change to Started.

6.9.4.2 To Stop the Server Services

Step 1 Open the Windows Services application from Control Panel → Administrative Tools → Services.

Step 2 Select the Service that you what to stop by clicking on the service name.

Step 3 Click on the Stop button or right-click and select Stop.

Step 4 When the selected service is not running, the status will change to Stopped. If the service status does not change but displays Stopping, then the Stop operation has failed. Use the Windows Task Manager to End the process.

6.9.4.3 To Start the Server Services up with Windows

When installed, some CallConnector server services may be set to be started manually. These services can also be automatically started when Windows starts.

Step 1 Open the Windows Services application from Control Panel → Administrative Tools → Services.

Step 2 Right-click on the Service that you want to update.

Step 3 From the menu select Properties.

Step 4 Change the Startup Type from Manual to Automatic in the General tab.

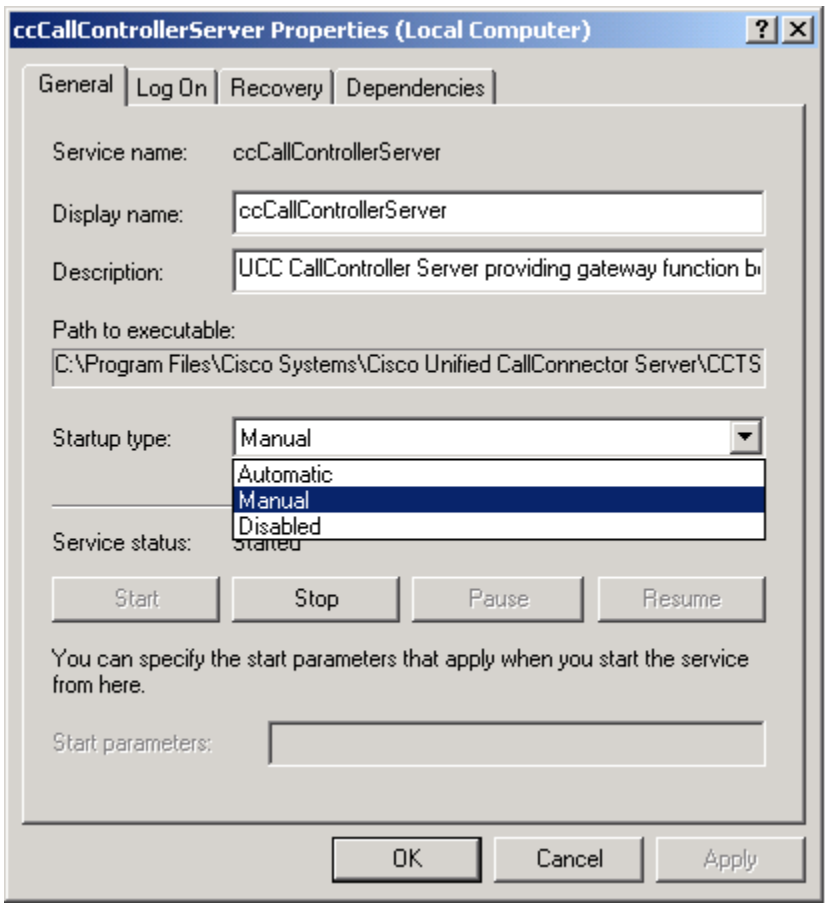


Figure 6-26 Windows Services Start-up Type

6.9.4.4 To Modify Recovery Actions

Step 1 Open the Windows Services application from Control Panel → Administrative Tools → Services.

Step 2 Right-click on the Service that you what to update.

Step 3 From the menu select Properties and click on the Recovery tab.

Step 4 From the pull down list select the recovery option. By default this is set to restart the service upon failure.

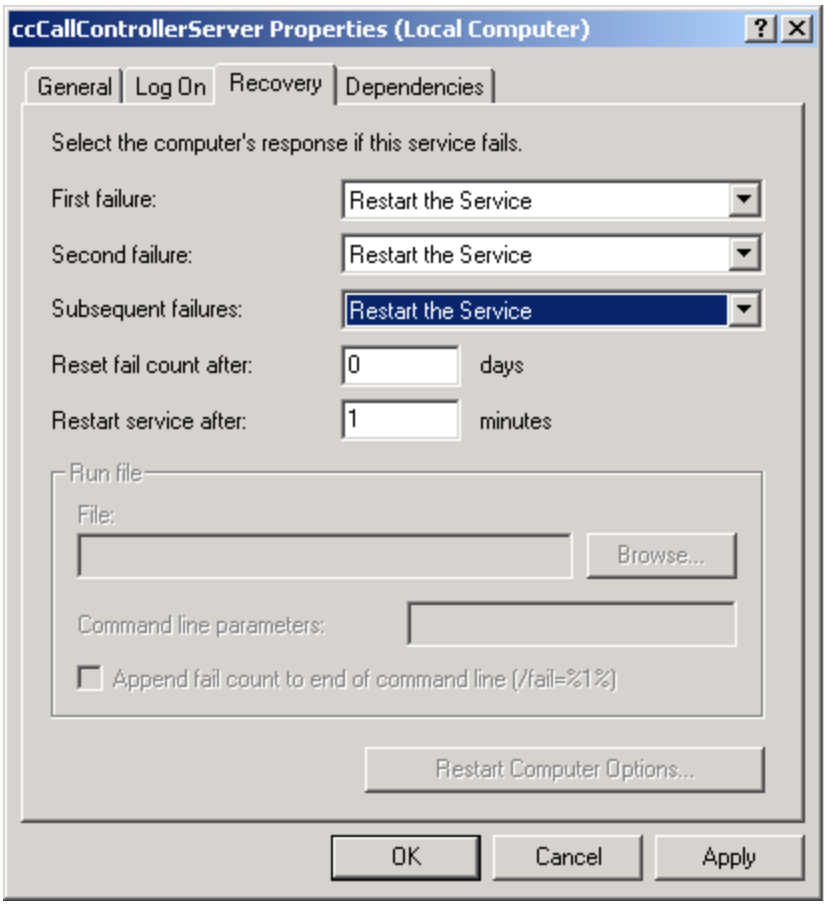


Figure 6-27 Windows Services Fault Recovery Settings

6.9.5

6.9.5.1.1

CHAPTER

7

7 Manage Users & Contacts

The Manage Users/Contacts section allows system administrator to add the CallConnector Users, setup the directory contacts, specify the departments/groups in the organization and define the company's work hours. The corporate directory comprises of groups of users and is accessible by all users. The administrator can also import external contacts from other organizations as well as the user phone accounts from the CME routers.

This chapter explains how to setup the CallConnector Users and populate the directory data and includes the following:

Users and Contacts Overview - Provides an overview of CallConnector corporate directory, and describes the pre-requisites and the steps for configuring the CallConnector directory.

Directory Page Overview - Provides an overview of the Cisco Smart Configuration Manager Servers page.

Navigation Bar - Provides an overview of the Directory Navigation Bar and explains how to import and export contact information.

CallConnector Users - Describes different types of contacts and how to maintain their information. It also explains how to assign IP phones to individual users and associate the user with the manager, assistant and backup.

Contact Management - Describes different types of contacts and how to maintain their information. It also explains how to assign IP phones to individual users and associate the user with the manager, assistant and backup.

Maintaining Groups - Describes the Group window and how to maintain group information and allow/restrict group access.

Setting up Work Schedule - Describes how to configure the corporate holidays, work days and work hours.

7.1 Managing Users and Contacts Overview

7.1.1CallConnector Users

All CallConnector Users need to have an account configured on the CallConnector Server to allow them login from a CallConnector application. The administrators can setup these accounts using the Configuration Manager utility.

7.1.1.1 What is a CallConnector User

A CallConnector User is an account setup on the CallConnector Server that can access the services provided by the CallConnector solution from a CallConnector client application. The CallConnector clients include the desktop CallConnector Toolbar client, the CallConnector Pro client and the Operator Console. The user contact information is displayed in the Corporate Directory.

7.1.1.2 Types of CallConnector Users

The CallConnector supports four types of users – Administrator, Manager, User and Operator. The difference between the user types primarily determines the rights to access and change the contact and configuration information. Some CallConnector applications are restricted to specific user accounts.

An Administrator user account is required to log in and use the Configuration Manager utility. (Note a default account is created upon installation with login name ‘admin’ and password ‘admin’.) User accounts of type ‘Operator’ or ‘Administrator’ is required to log in to the operator console client.

7.1.1.3 How to Add Users

User accounts are created using the Configuration Manager application. A user account can be created by manually entering the user information. User accounts can also created by importing users from the Cisco Router or from a text file.

7.1.1.4 Information Required to Configure Users

A CallConnector User account generally has the user’s first and last names, login name and password, user-type, the group or department they belong to, other contact data. The user account must also be associated with the user’s phone.

7.1.2CallConnector Directories

The CallConnector solution supports three directory databases. The client application can also display the user's personal Outlook contacts. The table below summaries these directories:

Directory	Description	Operator	Client	Sharing
Corporate	Contains the details of the organizations employees. The employees can be CallConnector Users and non-user contacts. Corporate directory displays presence and telephone status.	Yes	Yes	All Users
External	This directory can be populated with business related contact information. It does not display presence or telephone status.	Yes	No	All Operators
Personal	Contains a user's personal contact information.	No	Yes	Not Shared
Outlook	CallConnector clients connect to the user's email account and display the Outlook personal contact information.	Yes	Yes	Not Shared

Table 7-1 Types of CallConnector Directory Databases

Administrators can populate the CallConnector Directories with contact information to make them available to the users and operators. Depending on their access rights to the information, users can also add, modify or delete these contacts. (Note – User accounts can only be setup from the Configuration Manager).

7.1.2.1 Corporate Directory

The Corporate Directory is a repository for the organization's employee contact information. This directory is presence-enabled and can display the availability (available, busy, away or unavailable), location (at work, at home, away on business or vacation) and telephone status.

Each record in the directory can be populated with:

Organizational information including Company, Department/Group, Title, Room etc.
Multiple Telephone Numbers including work, work2, home, mobile and an alternate number. In addition, it provides links to the contacts Manager, Assistant and backup person.
Messaging addresses for email, SMS and voice mail
Custom fields and notes field.

7.1.2.2 User and Non-User Contacts in Corporate Directory

Contacts in the Corporate Directory can be a CallConnector User or a Non-User. For contacts that are Users, the CallConnector maintains database links to additional user configuration information in the system databases as shown below. When a contact is added from a Corporate Directory application, only the Corporate Directory database is updated with the new data, the system databases for the user information are not changed.

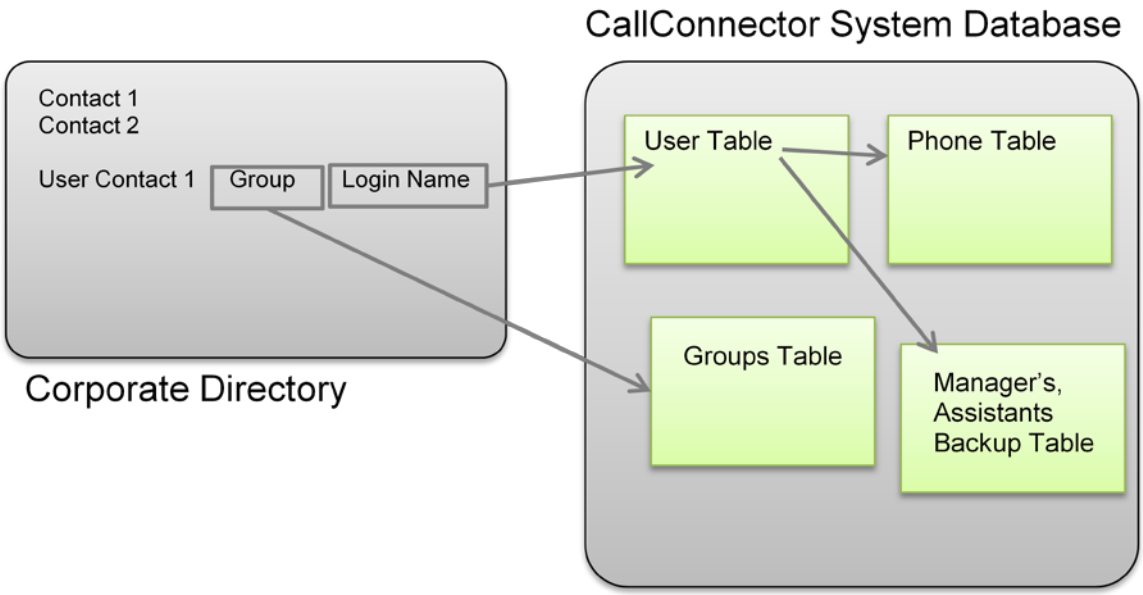


Figure 7-1 User in Corporate Directory Linked to Configuration Data in System Database

When added/imported to the CallConnector system, each user will be assigned a user account and an IP phone. The user contact information and organizational information is saved in the Corporate Directory. The system administrator can associate the user with the user's manager, assistant and backup person. The user is also assigned to a group/department.

7.1.2.3 Groups/Departments

Contacts in the Corporate Directory can be placed into departments or groups. The groups/departments should be first configured using the Configuration Manager → Manager Users/Contacts → Groups page. Once the groups have been created, a group/department can be selected and assigned to a contact. It is important to create the departments/groups for the organization and assign users to the correct group for some of the following reasons:

Associating contacts to department/groups reflects the organizational hierarchy.
The directory view can be organized hierarchically to list contacts under their group
Groups in the CallConnector support access control methods. Users can be permitted or restricted from accessing presence information based on their groups
CallConnector Reports provide Department/Group reports that require the contacts to be assigned to the correct groups/departments for those reports to be useful.

7.1.2.4 External Directory

The External Directory is an additional repository of contact. This is provided to allow organizations to populate this database with important non-employee contacts. Example of such contacts might be customer data, business partners, etc. The External Directory can be used for any organizational contact data. This also allows the Corporate Directory to be used primarily for the employee and internal contact information.

7.1.2.5 Corporate and External Directory Differences

The differences between the Corporate and External Directory are summarized in the table below.

Corporate Directory	External Directory
Primary use is for internal organizational contacts	Primary use is for all non-employee, external contact information
CallConnector user contact information is saved in the Corporate Directory	No CallConnector User contacts
Displays integrated presence information for the contacts – availability, location and telephone status	No integrated presence status

Table 7-2 Differences between the Corporate and External Directories

7.1.3Importing Contact Data

Contact data can be imported into the CallConnector databases by the administrator using the Configuration Manager Import Wizard. This is in addition to the interfaces for manually entering the contact data.

Contacts can be imported as CallConnector Users into the Corporate Directory. Contacts can also be imported as non-Users into the Corporate and External Directories. The different methods supported for import include:

Importing CallConnector User information from the Cisco router
Importing CallConnector User information from text (CSV formatted) file
Import Contacts to Corporate or External Directory from Cisco router
Import Contacts to Corporate or External Directory from text (CSV formatted) file
Import Contacts to Corporate or External Directory from Outlook/Exchange folder

All the directory imports are performed using either the User Import Wizard or Contact Import Wizard.

7.1.4Group Management

The Group Management folder provides interfaces to allow administers to:

Add, modify and delete groups or departments of the organization
Enable publishing of caller information and presence information for a group
Restrict access to a group’s presence information to members of other groups

7.1.5 CallConnector User - Summary of Configuration Steps

The following lists the steps for configuring a CallConnector User: corporate directory in the order of the recommended configuration process:

Steps	Description	Where to setup
Download and select ephones to be controlled by the CallConnector	The lists of all ephones to be controlled by the CallConnector Users have to be downloaded from the CME routers and added to the Selected Phones list.	Setup Router and Servers → Manage Cisco Routers (CME)
Configure group information	Define the groups/departments in the organization and the access of other groups to the presence status and call ID information of the users in the group.	Manage Users/Contacts → Group Management Folder
Configure user information	Add or import CallConnector users. For each user: Enter the user's first and last names Assign a user account including username and password Select the user's group and assign user type from pulldown lists Add user's corporate information Select the IP phone to be controlled by the user Add the user's other contact information Associate the user with the manager, assistant and backup	Manage Users/Contacts → User and Contacts Folder Select CallConnector User
Save User Information	Click on the Save button to write the changes to the database	Bottom of the User configuration window

Table 7-3 Steps for configuring CallConnector Users

Note Administrators can also import the CallConnector Users from the router.

7.1.6 Directory Contacts – Summary of Configuration Steps

The following lists the steps for configuring a CallConnector User: corporate directory in the order of the recommended configuration process:

Steps	Description	Where to setup
Configure group information	Define the groups/departments in the organization and the access of other groups to the presence status and call ID information of the users in the group.	Directory → Group Management → Groups
Configure user information	Add or import CallConnector users. For each user: Assign a user account including username and password Add the user to a group and assign user type Add user's corporate information Select the IP phone to be controlled by the user Add the user's contact information Associate the user with the manager, assistant and backup	Directory → User Management → Users
Configure external contact information	Add or import external contacts to the CallConnector system.	Directory → User Management → Contacts
Setup company work schedule	Specify the following corporate information: Annual holidays Regular work hours Regular work days	Directory → Company → Settings

Table 7-4 Steps for configuring the corporate directory

7.1.7Pre-Requisites for Directory Configuration

Prior to setting up the corporate directory, you need to configure the CallConnector servers and select the ephones to be controlled by the CallConnector users. You also need to have certain network activity and configuration information. These are summarized in the table below.

Item	Description	Source
Corporate Work Schedule	This includes: Corporate Holidays Regular Work Days Regular Work Hours	
Group Information	The list of all departments in the organization. For each department, you need to know if they want to: Publish the presence status of the users Publish the caller ID Restrict other groups to view their status	
User Information	The list of users in the organization. For each user, you need to have their corporate and contact information. You need to configure the Cisco routers first if you wish to import user accounts from the router. Before configuring user information, administrator have to setup the groups and select the IP phones to be controlled by the users.	
External Contacts	A list of external contacts from other organizations.	

Table 7-5 Pre-requisite information for configuring corporate directory

7.2 Navigating the User/Contacts Windows

This section describes the methods for opening the pages associated with configuring CallConnector Users and entering the contact information for the directories. You can use the toolbar buttons to jump to a particular page. You can also select a folder and an item within the folder to go to that page.

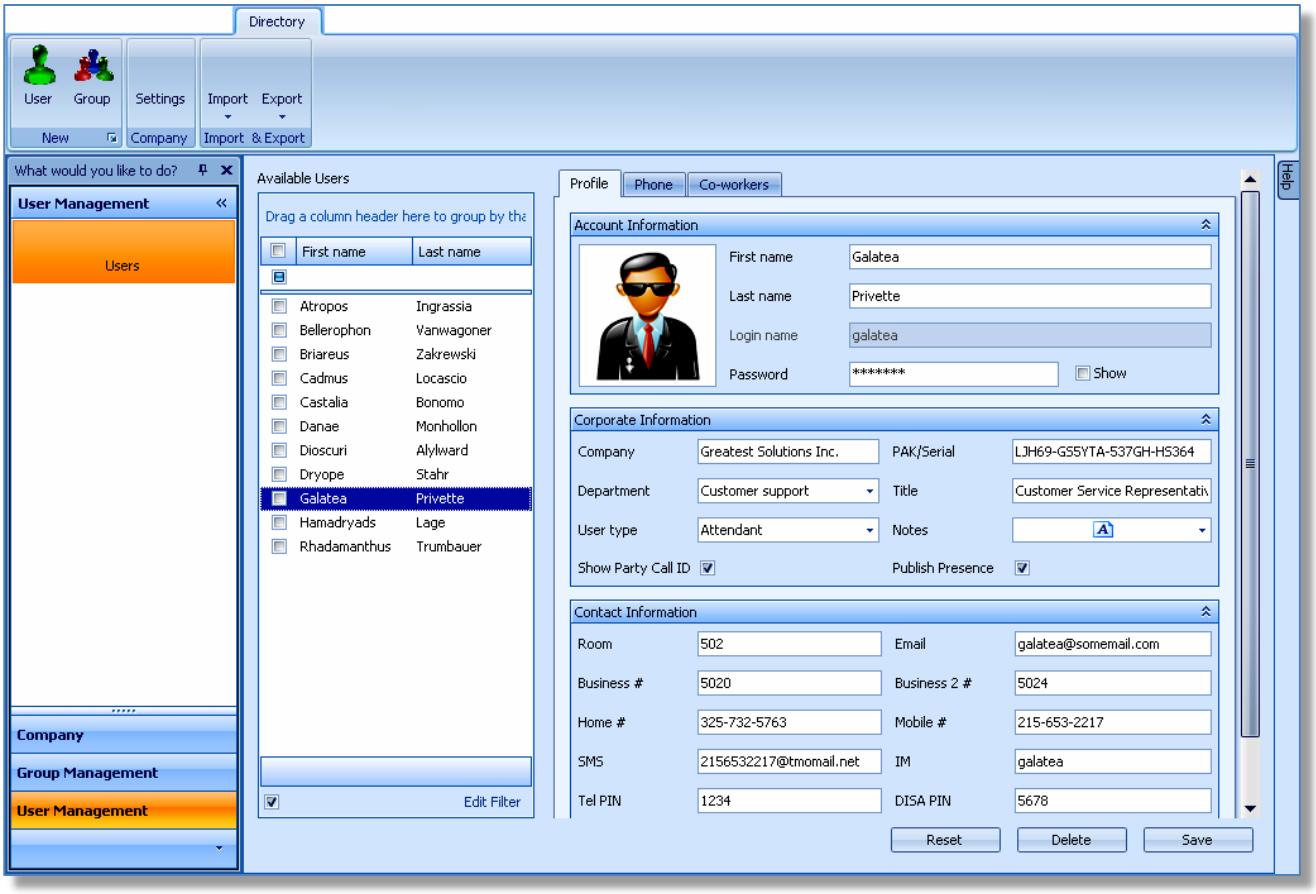


Figure 7-2 Manage Users/Contacts configuration window

The Manage Users/Contacts section consists of three folders. The contents of these folders and the parameters that can be configured in each window are summarized below.

Users and Contacts: The Users and Contacts folder contains three items – CallConnector Users to add, modify and delete CallConnector Users, Corporate Directory provides a table to view and update the organizational contact information and the External Directory provides a table to update the external directory contacts. Clicking on a folder item will open the pages for configuring that area.

Group Management: Displays a list of the groups or departments defined for the organization. Administrators can add, modify, delete and change the publishing and access control rights.

Company: Allows the administrator to define the holidays and the hours/days of operation.

7.2.1.1 Manage Users/Contacts Toolbar

Figure 7-3 Configuration Manager Manage Users/Contacts toolbar

Toolbar Button	What does the button do
Users and Contacts Shortcut	Opens the Users and Contacts folder to the CallConnector Users page to add, modify or delete the user information. The folder list also includes Corporate Directory Contacts and External Directory Contacts items. Click on the required item in the list to jump to those configuration pages
Group shortcut	Opens the Groups configuration page. From this page the name of the groups/departments and their publishing and access rights can be setup.
Company shortcut	Opens to the Company configuration page. This page provides interfaces to specify the holidays, the working days and the hours of daily operation.
Add New User	This button is used to configure a new CallConnector user.
Add New Group	This button is used to add a new group.
Import	This button is used to open the Import Wizards. A sub-menu allows the administrator to select User Import or Import Contacts. User Import allows the administrator to import the CallConnector User parameters from the Cisco router or from text files. Import Contacts allows the administrator to import directory contact information from the router, text file or Outlook folders to either the Corporate or External Directory

Table 7-6 Configure Operator Console Parameters toolbar buttons

Note

The display of the toolbar can be toggled by double-clicking on the Manage Users/Contacts tab.

7.2.1.2 Manage Users/Contacts Folder

The Manage Users/Contacts is comprised of a number of configuration pages. These pages can be accessed from the folder to the left of the configuration pages. The selected folder is highlighted in orange. Click on a folder and then the item in the folder list to view and make changes to those console parameters.

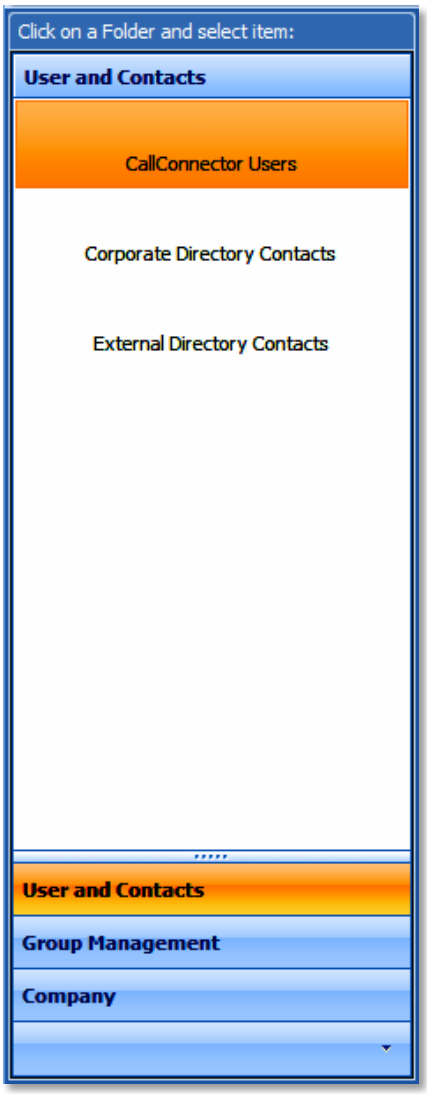


Figure 7-4 Manage Users/Contacts Folders

Folder	Folder Item	Configuration Page
User and Contacts	CallConnector Users	Displays a list of the configured CallConnector Users and a tabbed window to setup the user parameters
User and Contacts	Corporate Directory Contacts	Displays a table showing the corporate directory (non-user) contacts. Contact information can be added, updated and deleted from this window.
User and Contacts	External Directory Contacts	Displays a table showing the external directory contacts. Contact information can be added, updated and deleted from this window.
Group Management	Groups	Displays a list of the configured groups or departments and provides interfaces for making changes to these groups.
Company	Settings	Allows the administrator to specify the holidays and the working days and hours

Table 7-7 Manage Users/Contacts Folders and Folder items

7.2.2 Pre-requisite Information for configuring Users and Contacts

Prior to setting up the call queues, system speed dials and page numbers, the administrator has to download the CME configuration data and select the ephones to be used, setup dialing parameter and radius, define company working schedule, and configure groups and users. The administrator needs to have the following configuration data before working on the Operator page.

Item	Description
Incoming Call Queues Data	The administrator may need to setup multiple call queues. For each call queue, the following information is required: The name of the call queue Whether the call queue is of type local or hunt group The priority level of the queue The alert timeout value of the calls in the queue The busy and night routing numbers Greeting text The directory numbers that should belong to the queue. These numbers can belong to a single Operator or multiple Operators. The details of the queue configuration data will be explained in the Call Queue section.
Monitored Call Queues	These include park, held and transferred call queues. For each of them, the administrator needs to know the priority level and timeout value of the call queue. For the park queue, the administrator needs to have the list of park numbers to be used by the operators.
System Speed Dials	The following information is required for system speed dials: Category Name Number
Page Numbers	The list of page numbers. Each page number entry includes the name and the directory number.

Table 7-8 Pre-requisite information for configuring Operator

7.2.3 To Open the Manage Users/Contacts Window

To configure a specific operator parameter:

Click on the menu item ‘Configure Operator Parameters’. This will display the Operator Parameters toolbar and the folders.
Click on the toolbar button or the desired folder to open the window for that parameter:
To configure the incoming call queues, click on the Call Queues folder
To setup the operator’s park numbers or to change the pre-defined queue parameters, click on the Held, Parked & Transferred Queue folder.
To setup the page numbers, click on the Speed Dials and Page folder and select the Page item from the list.
To setup the Speed numbers, click on the Speed Dial folder.

7.3 CallConnector Users Page

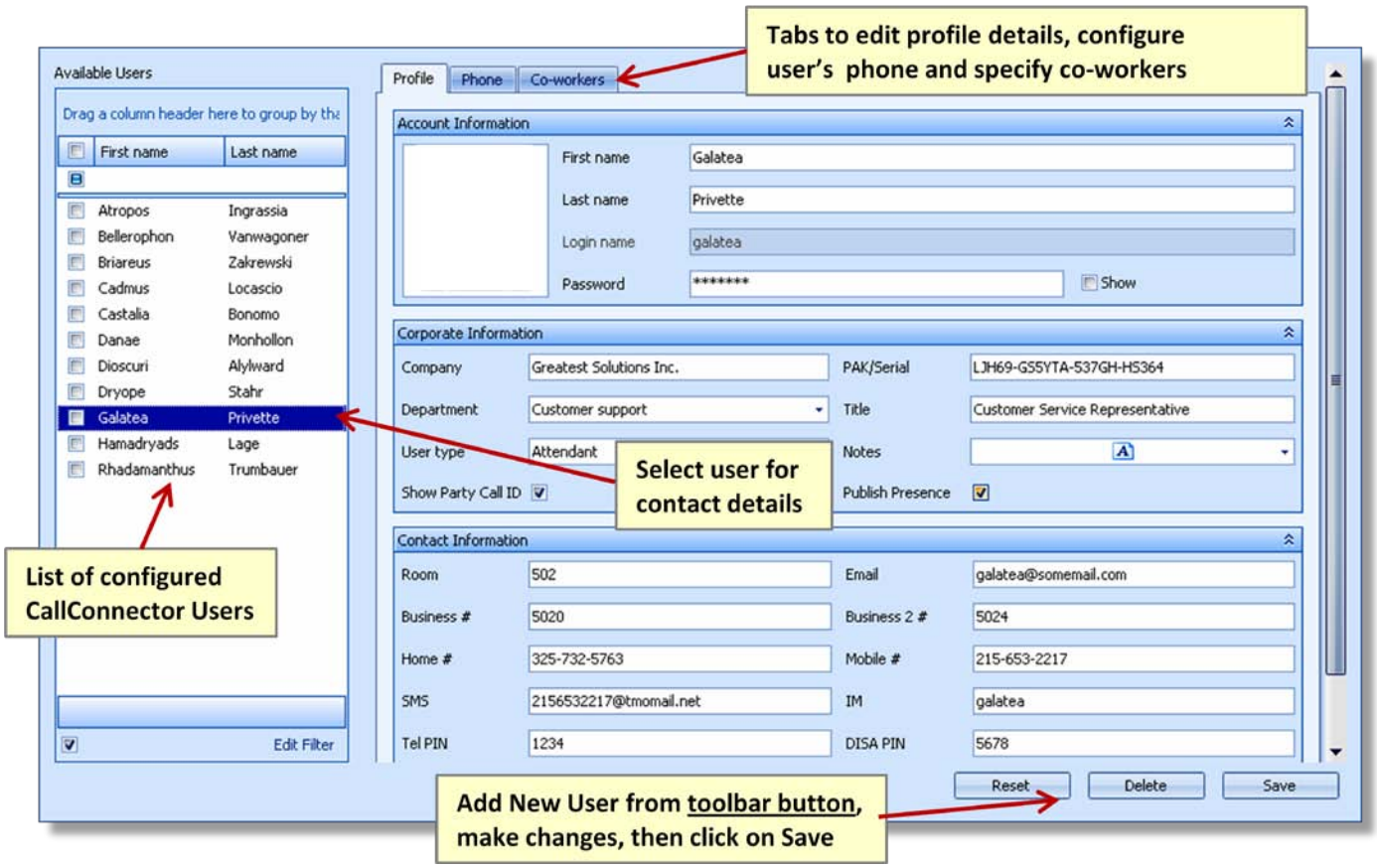


Figure 7-5 CallConnector User configuration page

7.3.1.1.1 The CallConnector User page contains two main components:

Available Users Table: Lists the users that have been configured on the CallConnector server. When a user entry is selected, the details of the selected user are displayed in the User Details window.

User Details: This user details are displayed in three tabbed pages: Profile, Phone and Co-workers. These tabs enable the following configuration:

Profile: Displays the fields for the user's detailed contact information including the Account Information, Corporate Information and Contact Information.

Phone: This displays all the phones configured for connection by the CallConnector. One phone must be selected for this user.

Co-Workers: Allows the administrator to specify the user's manager, assistant and back up persons.

7.3.2User Profile Fields

The CallConnector User accounts need to be setup with the minimum information (including login name and password) to allow them the login to the CallConnector Server. The system administrator MUST create a user account and configure the user information in the Profile page.

Note

User profile information is divided into three tabbed sections: Account Information, Corporate Information and Contact Information. Each section can be opened or closed by clicking on the arrows at the top-right of the windows.

Account Information contains the user account information. This information is required for the CallConnector users to log into the CallConnector. The user name, login account name and password MUST be provisioned.

Corporate Information includes the users organizational information such as department/group, title, user-type etc.

Contact Information consists of various phone numbers to contact the users, SMS and email addresses, and the user id to send instant messages.

You MUST select the ephones to be associated with the CallConnector user from the Phone tab. Click in the checkbox to select.

You can click on the double-arrow in the section header to expand or collapse that section.

Field	Description
First Name	The first name of the CallConnector user. You can also put the middle name in this field.
Last Name	The last name of the CallConnector user.
Login Name	The unique username for each CallConnector user to log in to the CallConnector system. Once saved, the login name is not editable.
Password	The password for each CallConnector user to log in to the CallConnector system. By default, the password is not shown to protect the user privacy. If you want to show the password, click on the Show checkbox next to the Password field.
Company	The CallConnector user belongs to this company/organization or division/branch.
Group/Department	The CallConnector user belongs to this group/department. A list of groups has to be defined in the Groups page before configuring this field. It is recommended that you select the group/departments for the user.
User Type	The CallConnector user can take one of these roles: User: The CallConnector user can change only their personal contact and presence status. Manager: A Manager user, in addition to the standard user functions, can change the presence status of all the members in the group/department in which they are the manager. There can be multiple managers in a group.

	Administrator: this CallConnector user can change system wide configuration data. Only the Administrator users can log in to the Configuration Manager. Admin users can also log in to the Operator Console client; however some of the configuration may be missing. Operator: The CallConnector Operators can change the presence status, contact information, call forwards for all the users in the organization. The operator login account is required to log into the Operator Console application.
PAK/Serial	The CallConnector user can use this Product Authorization Key or PAK-ID to activate their CallConnector client. The CallConnector servers and clients must be activated before use. Each user's serial number can be sent out to the user via email.
Title	The job title of the CallConnector user.
Notes	Notes associated with the user. Click on the Notes field to add or edit the notes.
Show Party Call ID	Checking this option allows other CallConnector users to see the calling name and number of this CallConnector user. Note – the Publish Call ID option has to be enabled for the user's group as well.
Publish Presence	Checking this option allows other CallConnector users to see the presence status of this CallConnector user. Note – the Publish Presence option has to be enabled for the user's group as well.
Room	The office location or room of the CallConnector user.
Email Address	The email address of the CallConnector user.
Work Phone 1 Number	The work phone number or the primary extension of the CallConnector user. This is the number that is auto-dialed from the client application.
Work Phone 2 Number	The alternative business phone number of the CallConnector user, if available.
Home Phone Number	The home phone number of the CallConnector user. This number should be entered in the 'canonical' format.
Mobile Number	The mobile phone number of the CallConnector user. This number should be entered in the 'canonical' format.
SMS Address	The CallConnector server uses this SMS address to send mobile text message to the CallConnector user. The CallConnector sends an email with the SMS text to the service provider's SMS email portal. The mobile service provider then transmits this as SMS text message to the provided mobile number. The SMS address should in the email format with the first part as the mobile number (user's mobile phone number) followed by the '@' symbol and the mobile phone's service provider's email server address. Examples of the US service provider email address is given below:

<table>
<tr><td></td><td>
<table>
<tr><th>If the contact’s provider is…</th><th>Then send SMS messages to…</th></tr>
<tr><td>T-Mobile</td><td>xxxxxxxxxx@tmomail.net</td></tr>
<tr><td>Sprint</td><td>xxxxxxxxxx@messaging.sprintpcs.com</td></tr>
<tr><td>Verizon</td><td>xxxxxxxxxx@vtext.com</td></tr>
<tr><td>Cingular</td><td>xxxxxxxxxx@mobile.mycingular.com</td></tr>
</table>
For instance, if the contact uses T-Mobile and the contact’s number is 1234567890, the SMS Address should be 1234567890@tmomail.net.
</td></tr>
<tr><td>IM</td><td>The unique login name for the CallConnector user to send instant messages. This is automatically set to the login name.</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table>

Table 7-9 CallConnector User Contact Details

7.3.3CallConnector User Phone

The User Phone page displays the list of all ephones that have been downloaded and selected for connection by the CallConnector Server. (See Chapter Configuring Servers for details).

From this page, the system administrators can associate one ephone with the selected CallConnector user. A user can control only one phone from their application. The same IP Phone is not restricted from being associated with more than one user. However in this situation, all such users have ability to control the call and can interfere with each other.

The ‘Update work phone 1 number with the selected phone’s main number’ checkbox automatically updates the work phone number with the primary DN on the selected ephone.

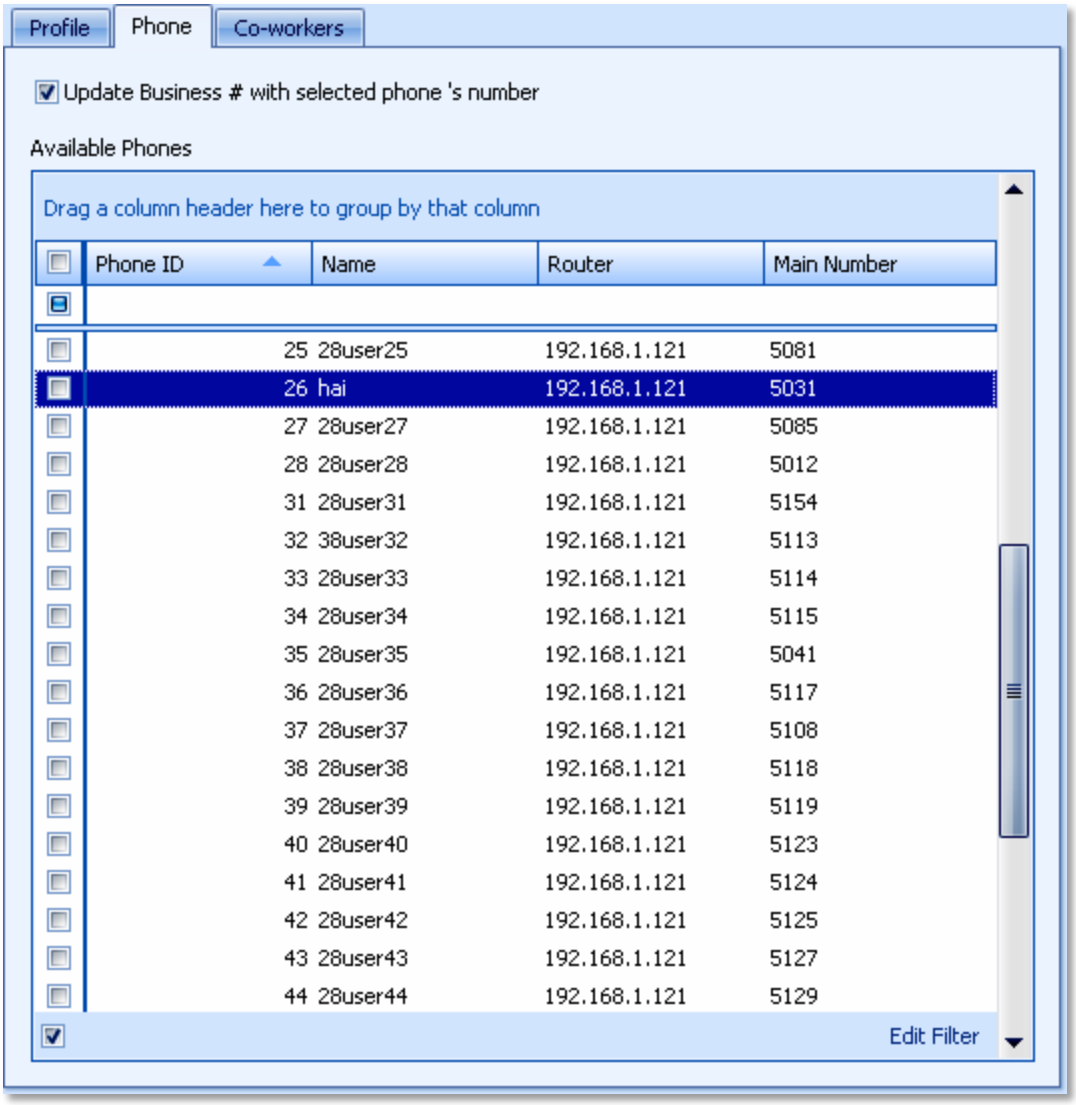


Figure 7-6 Assigning the User Phones

7.3.4To Associate a Phone with a CallConnector User

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Select a CallConnector user from the list of available users.

Step 3 Click on the Phone tab.

Step 4 Click on the checkbox beside the ephone to be associated with the user.

Step 5 Select the ‘Update Work Phone 1 with the selected phone’s main number’ checkbox if you want to automatically update the user’s work phone number with the primary DN on the selected ephone.

Step 6 Click Save or press Alt + S to save the change.

7.3.5CallConnector User Associates

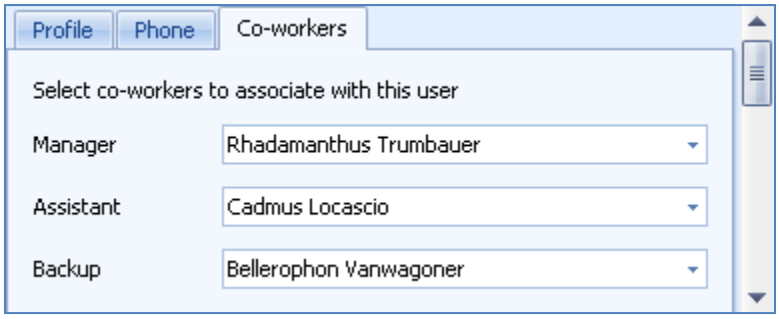


Figure 7-7 User Associates

This section allows the administrator to specify the alternate contacts for a user. These alternate contacts can be selected from the pulldown list one those users have been configured. Only the CallConnector Users are available for selection.

7.3.6To Configure a CallConnector User's Co-Workers

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Configure all the CallConnector users.

Step 3 Select a CallConnector user from the list of available users.

Step 4 Click on the Co-workers tab.

Step 5 From the pulldown list select the Manager, Assistant and Backup person's names.

Step 6 Click Save or press Alt + S to save the change.

7.4 Maintaining User Information

7.4.1User Configuration Tasks

The following CallConnector User configuration tasks are supported by this window:

1. Adding a new CallConnector User
2. Adding a New CallConnector Operator user account
3. Modifying a CallConnector User contact information
4. Specifying the user's phone and changing the phone assignment
5. Specify a user's alternate contacts (manager, assistant or backup)
6. Deleting one or more users

In addition to these manual configuration steps, the CallConnector Users may be provisioned by downloading some of the user information from the phones configured on the router or imported from a text file.

7.4.2To Add New CallConnector User

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on Add New User button in the toolbar. This will create a new blank user form in the user details window below.

Step 3 Enter the user's first, last and login names and the password. The login name is used to log into the application.

Step 4 Enter the user's corporate information—specifically you must select the group/department the user belongs to and the user type. User type is important because to the access rights conveyed to that user.

Step 5 Fill in the contact information as available.

Step 6 You MUST associate the user with a ephone. Click on the Phone tab, scroll down to the desired phone and click on the checkbox to the right of the phone to select it for the user.

Step 7 You can select the user's colleagues - manager, assistant and backup contacts.

Step 8 Click Save or press Alt + S.

Note

Make sure that an Administrator account is configured on your system. The Configuration Manager application can only be opened by users with Administrative rights.

During installation, a default administrator account is created with login name 'admin' and password 'admin'. You can change the password and the first, last names as well as the contact information.

Standalone Operator Console deployments are limited to a maximum of two user accounts plus one administrative account. For this reason, for Standalone Operator Consoles, the Add New User becomes disabled after three accounts have been created.

7.4.3To Add New CallConnector Operator

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on Add New User button in the toolbar. This will create a new blank user form in the user details window below.

Step 3 Enter the users first, last and login names and the password. The login name is used to login to the application.

Step 4 Enter the user's corporate information—specifically you must select the group/department the user belongs to and the user type. User type MUST be Operator.

Step 5 Fill in the contact information as needed.

Step 6 You MUST associate the operator with an ephone. Click on the Phone tab, scroll down to the desired phone and click on the checkbox to the right of the phone to select it for the operator.

Step 7 Click Save or press Alt + S.

Note

An operator account is required to log in to the CallConnector Operator Console application.

First configure the Operator user accounts, then the Operator Console Parameters tab can be used to configure the call queues, park, speed etc numbers.

A CallConnector Operator is a CallConnector User that can log into and use the Operator Console client application.

7.4.4To Update CallConnector User Information

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the CallConnector Users folder. The Configuration Manager will load the list of available users.

Step 3 Select the user to edit in the Available Users list. The detailed information of the user will be displayed.

Step 4 Make changes to the user information. You can click Reset or press Alt + R to clear the information from the user profile fields.

Step 5 Click Save or press Alt + S to save the changes.

7.4.5To Update a User Phone

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the CallConnector Users folder. The Configuration Manager will load the list of available users.

Step 3 Select the user to edit in the Available Users list. The detailed information of the user will be displayed.

Step 4 Click on the Phone tab to view the list of all selected phones. The phone currently selected for this user will be checked.

Step 5 Select the new phone for the user and click on the checkbox beside this phone. The checkbox will move from the previous selection to this phone.

Step 6 Click Save or press Alt + S to save the changes.

7.4.6To Delete One or More Users

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the CallConnector Users folder. The Configuration Manager will load the list of available users.

Step 3 Select the user(s) to delete by clicking on the checkbox beside their names in the Available Users list. The selected users will be highlighted.

Step 4 Click Delete or press Alt + D.

7.4.7To Specify User’s Alternate Contacts

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the CallConnector Users folder. The Configuration Manager will load the list of available users.

Step 3 Select the user to edit in the Available Users list. The detailed information of the user will be displayed.

Step 4 Click on the Co-Workers tab to view the currently specified alternate contacts.

Step 5 From the pulldown list select the name of Manager, Assistant or Backup person. Only users that have been configured are shown in the pulldown list.

Step 6 Click Save or press Alt + S to save the changes.

7.5 Importing CallConnector Users

The CallConnector Configuration Manager allows the system administrator to import user data from three external sources:

CSV File: System administrators can use Microsoft Excel to enter CallConnector user information and save the data in the Comma Delimited CSV format. The template text file can be found in the Smart CallConnector Server Data folder. It is called users.csv. You can edit the data but the header fields and the order of the fields in the file cannot be changed.

	A	B	C	D	E	F	G	H	I	J
1	DisplayName	LoginName	Password	UserType	GroupName	FirstName	LastName	Company	BusinessPhone	BusinessPhone2
2	John Smith	smith	Cisco	Manager	Marketing	John	Smith	Cisco Systems	1099	949-399-1099
3										

users

Figure 7-8 CallConnector User CSV file template

XML File: External user information can also be saved in XML file as follows. The template file can be found in the CallConnector Server Data folder. It is called users info.xml. You can edit the data but cannot change the data structure and the name of the data elements.

```
- <UsersInfo>
  - <User>
      <DisplayName>Bob Johnson</DisplayName>
      <LoginName>JBob</LoginName>
      <Password>callcomm</Password>
      <UserType>Manager</UserType>
      <GroupName />
      <FirstName>Bob</FirstName>
      <LastName>Johnson</LastName>
      <BusinessPhone>949777-1212</BusinessPhone>
      <HomePhone>Home Phone111</HomePhone>
      <Mobile>Mobile No1</Mobile>
      <Email>john@hotmail.com</Email>
      <SMSAddress>SMSAddress111</SMSAddress>
      <IMAddress>Add IM Address111</IMAddress>
      <SerialNo>tsca-666-11111</SerialNo>
    - <UserPhones>
        <Name>28user1</Name>
        <Name>28user27</Name>
        <Name>28user28</Name>
      </UserPhones>
    </User>
```

Figure 7-9 CallConnector User XML file template

CME Router User Accounts can be imported to the CallConnector Server from the CME Routers. Any ephone with a username and password is considered to be a user and is imported. The first name and last names are read from the primary (first) directory number on the ephone. When a user account is created from the Router-based information, these accounts contain the first name and last name from the primary ephone-dn, the login name is the ephone username, the password is the ephone password. The user's phone is assigned automatically as well. All additional contact details including the department/group need to be configured after the import has been completed.

7.5.1User Import Wizard

The CallConnector provides wizards to simplify the process of provisioning users. The Import Wizard is launched from the toolbar – select Users from the sub-menu.

The User contact information is always written to the Corporate Directory and the related CallConnector System database tables. The administrator can select the source from which to import the user information.

The Import Wizard is launched from the toolbar.

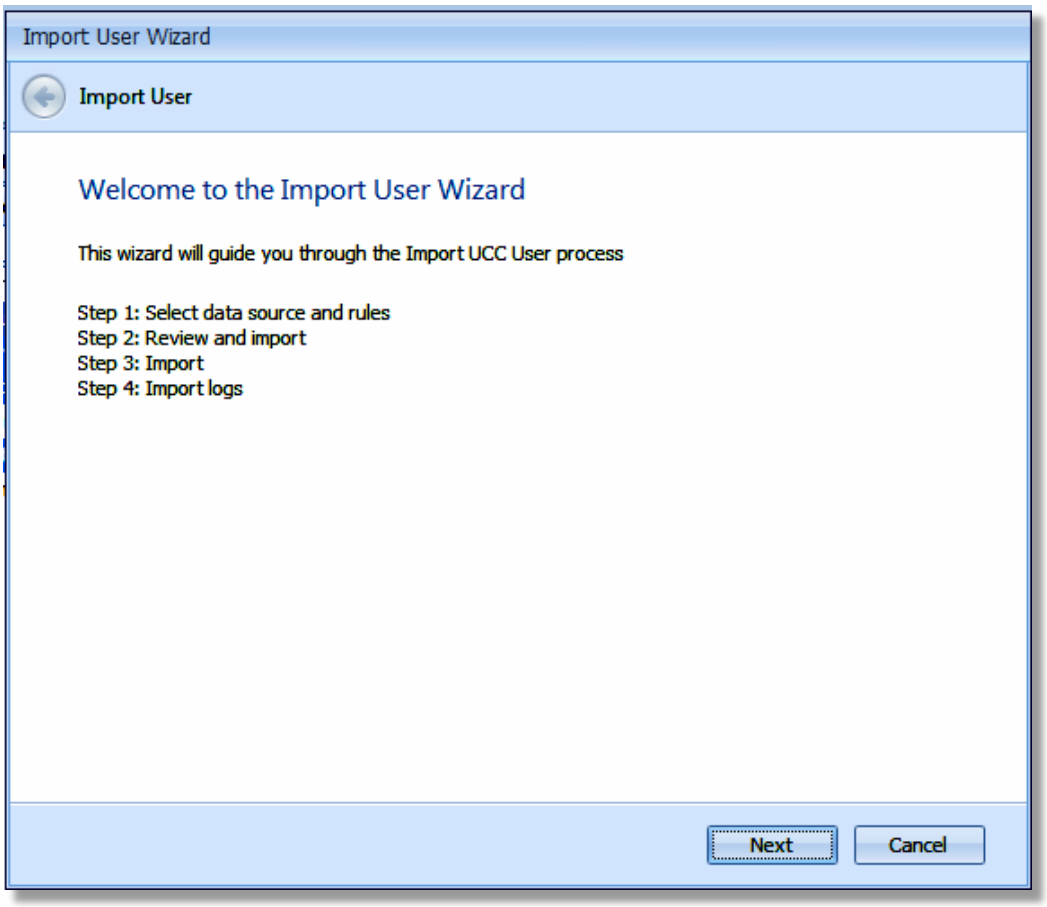


Figure 7-10 Import User Welcome Page – Click on Next to Continue

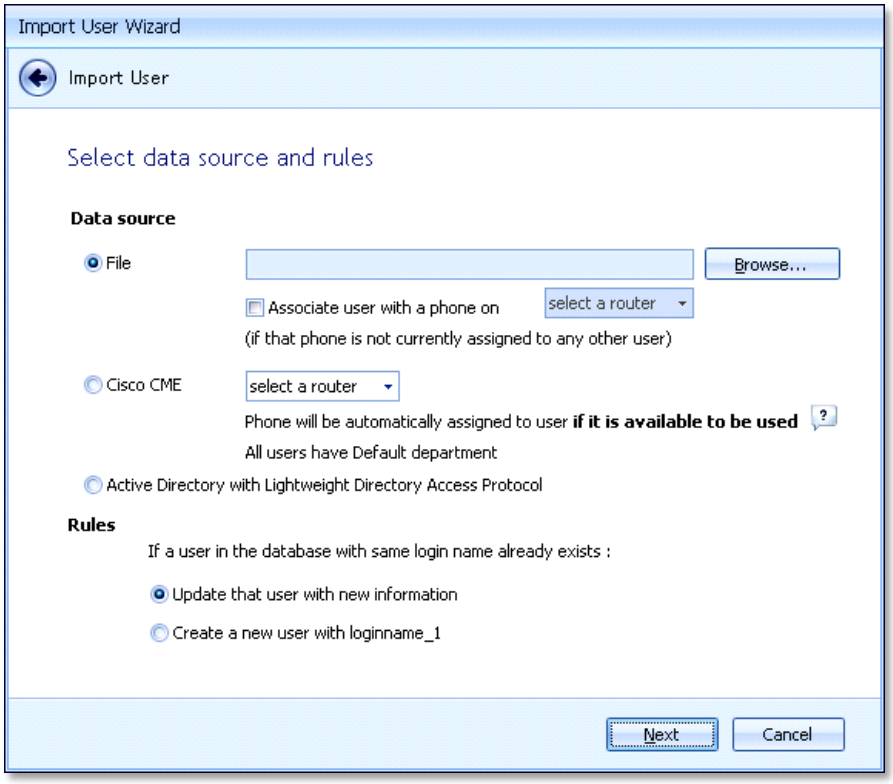


Figure 7-11 Import User Data Source Specification Page

7.5.1.1 Data Source- File

The data source can be a text file (CSV format text file or the CallConnector import xml file) or Cisco router. When a text file is selected, you can check to option to associate the user account with a phone from the specified router. In this case, the username on the ephone must match with the login name specified in the import record.

7.5.1.2 Data Source – CME Router

When there are multiple routers, use the pulldown list to select the router from which to import the users. User information is derived from each ephone on the selected router with a username and password. The user name is pulled from the name field of the first ephone-DN configured on that phone.

7.5.1.3 Data Source – Active Directory

Users can be imported from the Active Directory using a LDAP connection.

7.5.1.4 Rules

The rules specify handling of a import when the user with that login name already exists in the CallConnector. This will be the situation when the user list is being updated after changes in the router. The two options are:

Update User: The existing user information is updated

Create New User: A new user account is created with -1 appended to the login name.

7.5.2To Import CallConnector Users

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on Import button in the toolbar. A menu with two choices will display. Select Users.

Step 3 The Import User Wizard will display with the instructions on how to import CallConnector users.

Step 4 Click on Next or press Alt + N to continue. The next screen allows you to select the data source and the import rules. There are two options for data source: File (of type CSV file or XML file) or Cisco CME Router.

Step 5 If your data source is file, click on Browse… to select the file. With this option, you can associate the users with the available phones by checking on Associate user with a phone on. Then select the router where the phones reside.

Step 6 If you want to import user phone accounts from the Cisco CME router, check on Cisco CME. Then select the IP address of the Cisco CME router.

Step 7 If the data source is Active Directory, select option and then enter the administrator account and password and the IP address of the Active Directory.

Step 8 If a user with the same login name exists in the database, you can select the 'Update that user with new information from file' option or the 'Create a new user with loginname_1' option in the Rules section.

Step 9 Click on Next or press Alt + N. The Import User Wizard will display the import options you selected.

Step 10 Click on Import or press Alt + I.

Note

In order to associate the user with a phone, the following conditions must apply:

You have to select the phones in Servers → Manage Cisco Routers (CME) → Selected Phones. See Chapter on Configuring Servers for more information.

If the import data source is the CSV file, you have to specify the user phone account login name in the UserPhoneName field of the file.

7.6 Corporate Directory Contacts

The Corporate Directory page in the Configuration Manager displays the non-user contacts.

Note - the CallConnector client applications display a merged list of both the user and non-user contacts that have been added to this directory database. The Configuration Manager displays these two types of contact in the Corporate Directory in two different pages. The CallConnector Users are shown under the folder item “CallConnector Users” and the non-user contacts are shown in this page “Corporate Directory Contacts”.

The following tasks can be performed from the Corporate Directory Contacts page:

1. View the non-user contacts in the Corporate Directory
2. Search and locate contacts using multiple search keys
3. Add a new corporate directory contact
4. Update the information for an existing contact in the directory
5. Delete one or more contacts

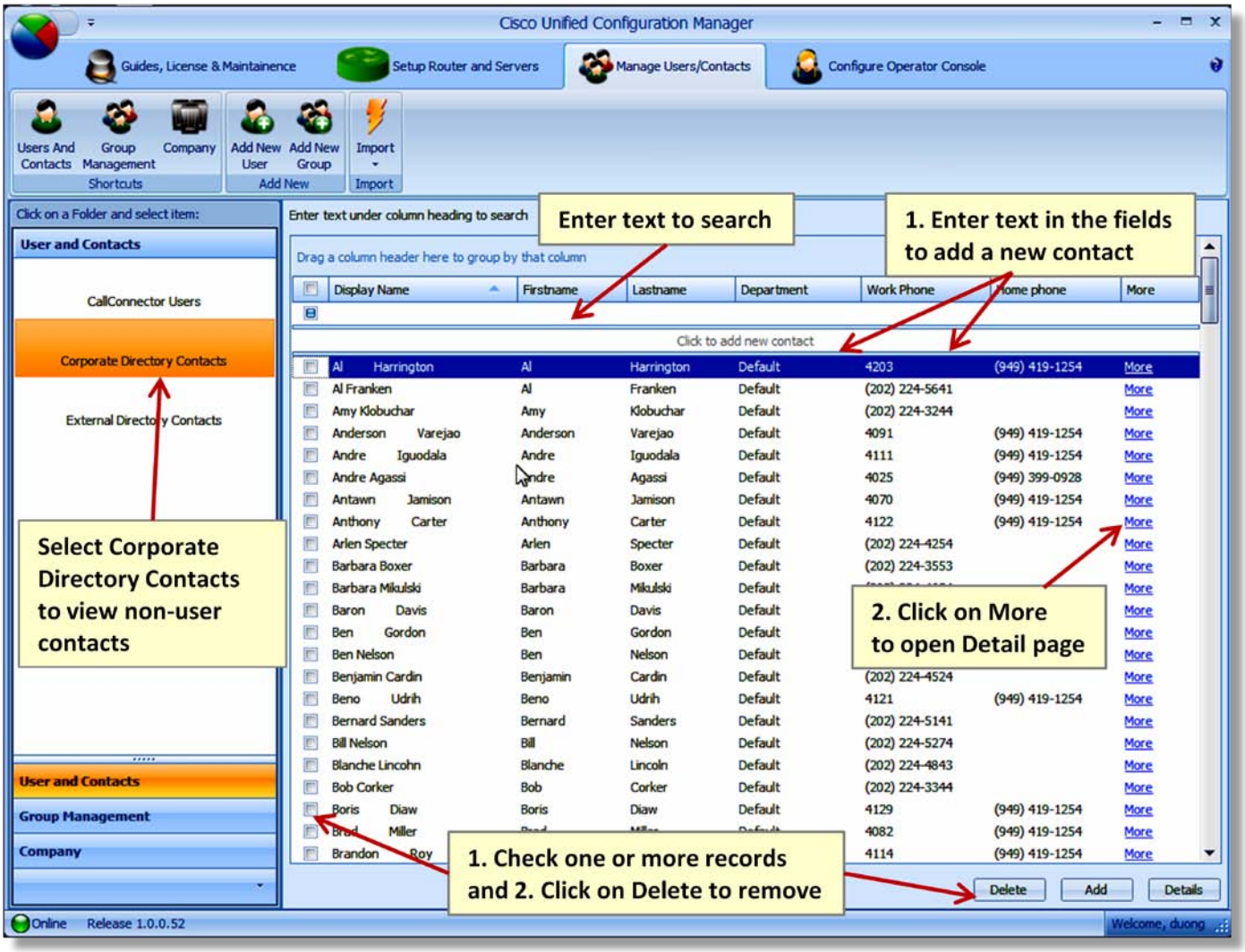


Figure 7-12 Managing Corporate Directory Contacts

The Corporate Directory Contacts window displays a few of the fields in the directory. To see all the fields, click on the 'More' button to the right of each contact. The Details window as shown below is displayed.

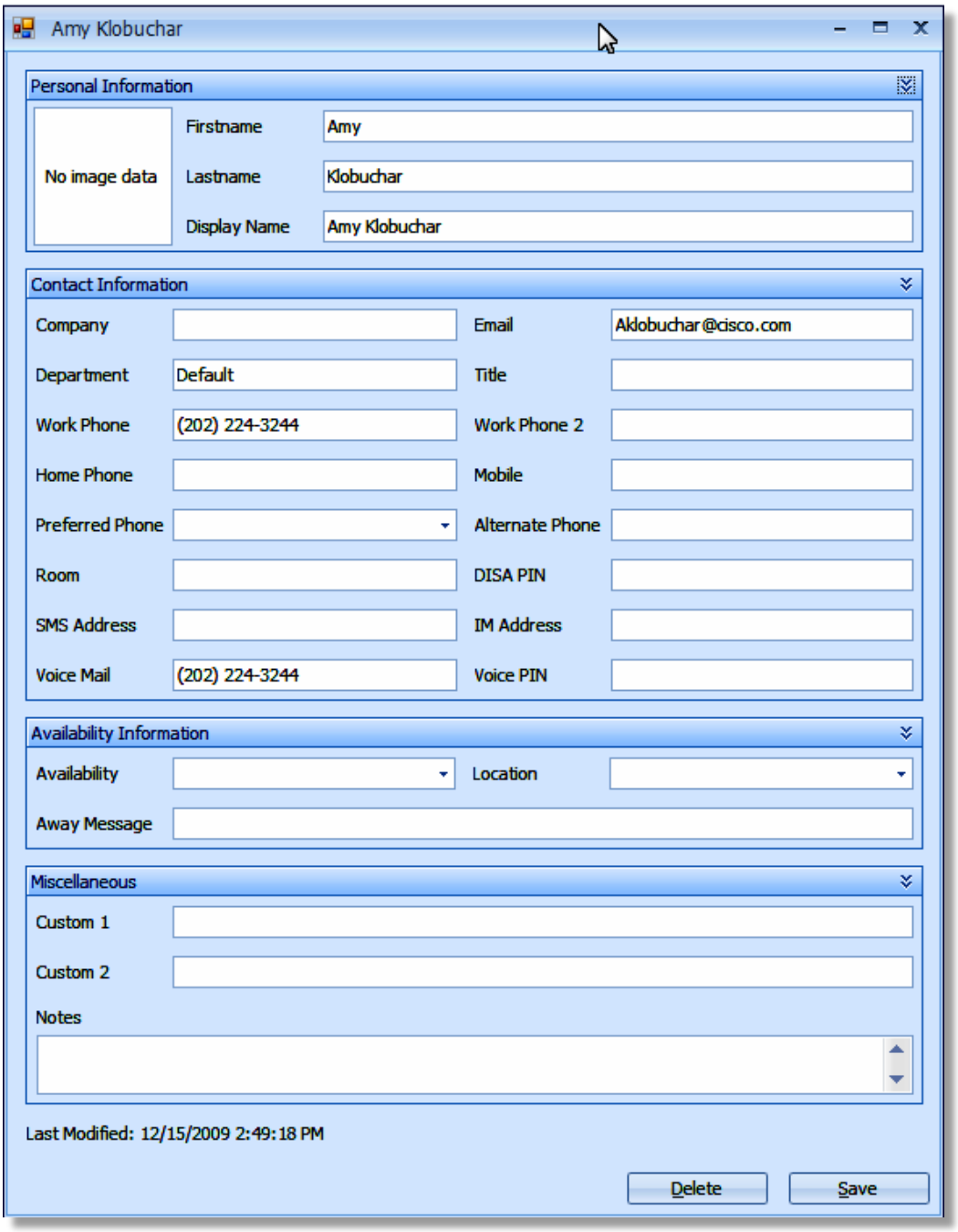


Figure 7-13 Corporate Directory Contacts Detailed Window

7.6.1 Types of Contacts

The CallConnector Directories support two types of contact:

Type	Description
CallConnector Users	These are the people in the organization who have the CallConnector account and can log into the CallConnector system. CallConnector users have to be added to the CallConnector server by the system administrator. They are assigned an account to log in and the PAK-ID to use the CallConnector client.
Non-user Contacts	These are directory contacts that do not have access to the CallConnector system. These contacts can be imported from the Exchange Server or an external source.

Table 7-10 Types of Directory Contacts

7.6.2 To Open and View the non-User Contacts in the Directory

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the Corporate Directory Contact item in the folder list. This will open and display the current non-user contacts in the Corporate Directory.

Step 3 Click on the “More” button for a specific contact to open the Detail window. The Detail window displays all the information fields for the selected contact.

Step 4 Click on a field label to sort the data alphabetically in that field.

Note

Make sure that an Administrator account is configured on your system. The Configuration Manager application can only be opened by users with Administrative rights.

During installation, a default administrator account is created with login name ‘admin’ and password ‘admin’. You can change the password and the first, last names as well as the contact information.

Standalone Operator Console deployments are limited to a maximum of two user accounts plus one administrative account. For this reason, for Standalone Operator Consoles, the Add New User becomes disabled after three accounts have been created.

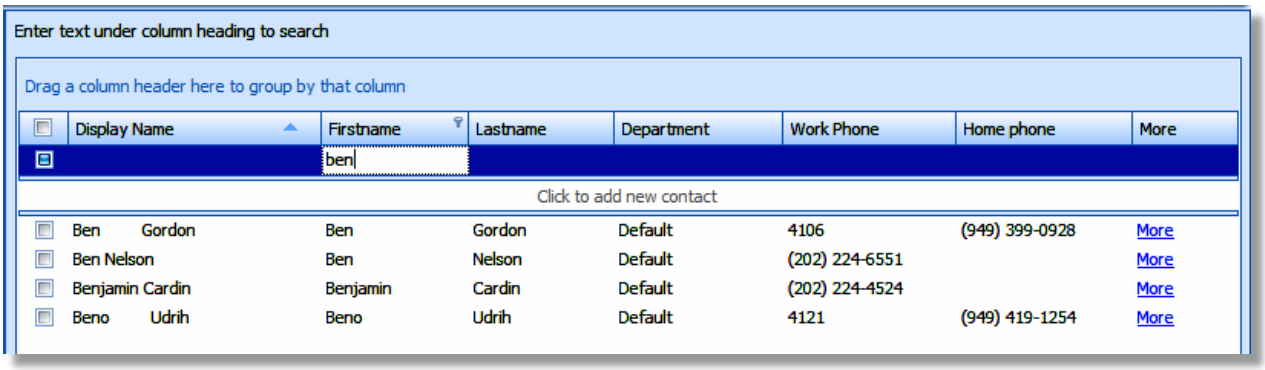


Figure 7-14 Search for contacts in the Corporate Directory Contacts Display

7.6.3 To Search for a Contact in the Corporate Directory List

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the Corporate Directory Contact item in the folder list. This will open and display the current non-user contacts in the Corporate Directory.

Step 3 Click on the field immediately below the field heading or label and enter the search text. The directory contact list will display only the contacts that match the text in that field. In the picture above, only the records with first names starting with Ben are listed.

Step 4 You can enter search text in multiple fields. The contact list will display only the records that have matching information for each of the fields with search text.

Step 5 Clear the search text to view all the contacts in the Corporate Directory.

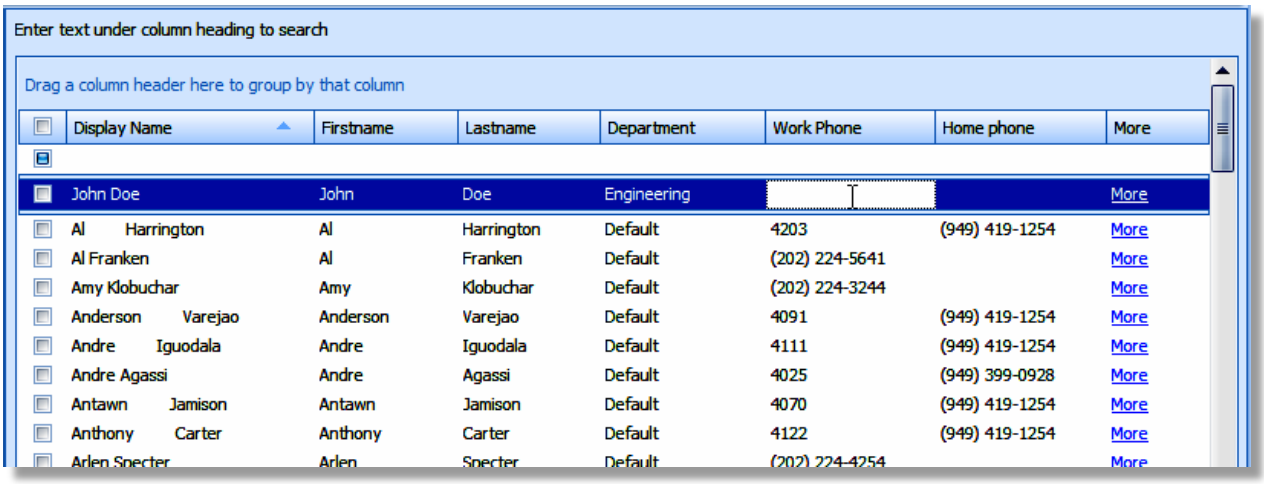


Figure 7-15 Enter Text in the second row to add a New Corporate Directory Contact

7.6.4To Add a New Directory Contact

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the Corporate Directory Contact item in the folder list. This will open and display the current non-user contacts in the Corporate Directory.

Step 3 Click on the fields of the second row below the field label. This is a blank field with text " Click to add new contact"

Step 4 Start entering the contact information. Press tab to move to the next field.

Step 5 Click on More button to open the Contact Detail Window. Enter information in all the desired fields.

Step 6 Click Save or press Alt + S to save the changes.

7.6.5To Update an Existing Directory Contact

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on the Corporate Directory Contact item in the folder list. This will open and display the current non-user contacts in the Corporate Directory.

Step 3 Click on the field for the contact that you want to change. You can also click on the "More" button for the contact that you want to update.

Step 4 Make changes to the contact information.

Step 5 Click Save or press Alt + S to save the changes.

7.6.6To Delete one or more Directory Contacts

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

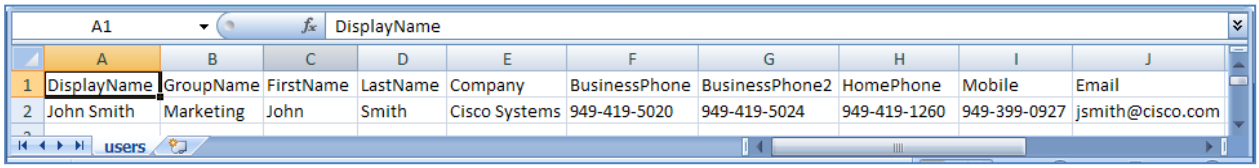
Step 2 Click on the Corporate Directory Contact item in the folder list. This will open and display the current non-user contacts in the Corporate Directory..

Step 3 Locate the contact(s) that you want to delete. For each contact, click on the checkbox associated with each contact record. Click on the Delete button to remove that contact. .

Step 4 You can also click on the More button for the contact and then press the Delete button to remove the selected contact.

7.7 Importing Directory Contacts

Non-user contact maintains information for people who do not have a CallConnector user account and cannot access to the CallConnector system from a client. The administrator can edit external contact information in a CSV file and import it to the CallConnector system.



DisplayName	GroupName	FirstName	LastName	Company	BusinessPhone	BusinessPhone2	HomePhone	Mobile	Email
John Smith	Marketing	John	Smith	Cisco Systems	949-419-5020	949-419-5024	949-419-1260	949-399-0927	jsmith@cisco.com

Figure 7-16 External Contact CSV file template

The format of the non-user contact data file is the same with the format of the CallConnector user data file except that the non-user contact data file does not have the following information:

1. Login Name
2. Password
3. User Type
4. Serial Number
5. User Phone Name
6. Voicemail Number
7. Tel PIN
8. DISA PIN

The template text file can be found in the Smart CallConnector Server Data folder. It is called users.csv. You can edit the data but the header fields and the order of the fields in the file cannot be changed.

You can import the external contacts into the following directory:

Corporate Directory: This directory contains the information on the employees of the organization. These contacts may be assigned an IP phone and have a CallConnector account.

External Directory: This directory includes other contacts information that is used by the organization. These contacts do not have an account in the CallConnector system and do not have access to the corporate phone system.

The CallConnector Configuration Manager allows the system administrator to import contact data from four external sources:

CSV File: System administrators can use Microsoft Excel to enter CallConnector user information and save the data in the Comma Delimited CSV format. The template text file can be found in the Smart CallConnector Server Data folder. It is called users.csv. You can edit the data but the header fields and the order of the fields in the file cannot be changed.

XML File: External user information can also be saved in XML file as follows. The template file can be found in the CallConnector Server Data folder. It is called users info.xml. You can edit the data but cannot change the data structure and the name of the data elements.

CME Router: Contact information can be imported to the CallConnector Server from the CME Routers. All ephone-DNs with provisioned name (First and Last) and a number value is considered to be a contact and is imported. The first name and last names are read from the name field of the ephone-DN. The telephone number is the number field of the ephone-DN. All additional contact details including the department/group need to be configured after the import has been completed.

Outlook Folder: Contact data can be imported from Outlook/Exchange. The information can be imported from any Outlook contact folder.

7.7.1Contact Import Wizard

The CallConnector provides wizards to simplify the process of provisioning directories. The Import Wizard is launched from the toolbar – select Contacts from the sub-menu.

The contact information can be written to either the Corporate Directory or the External Directory. The administrator can select the source from which to import the contact information.

The Import Wizard is launched from the toolbar.

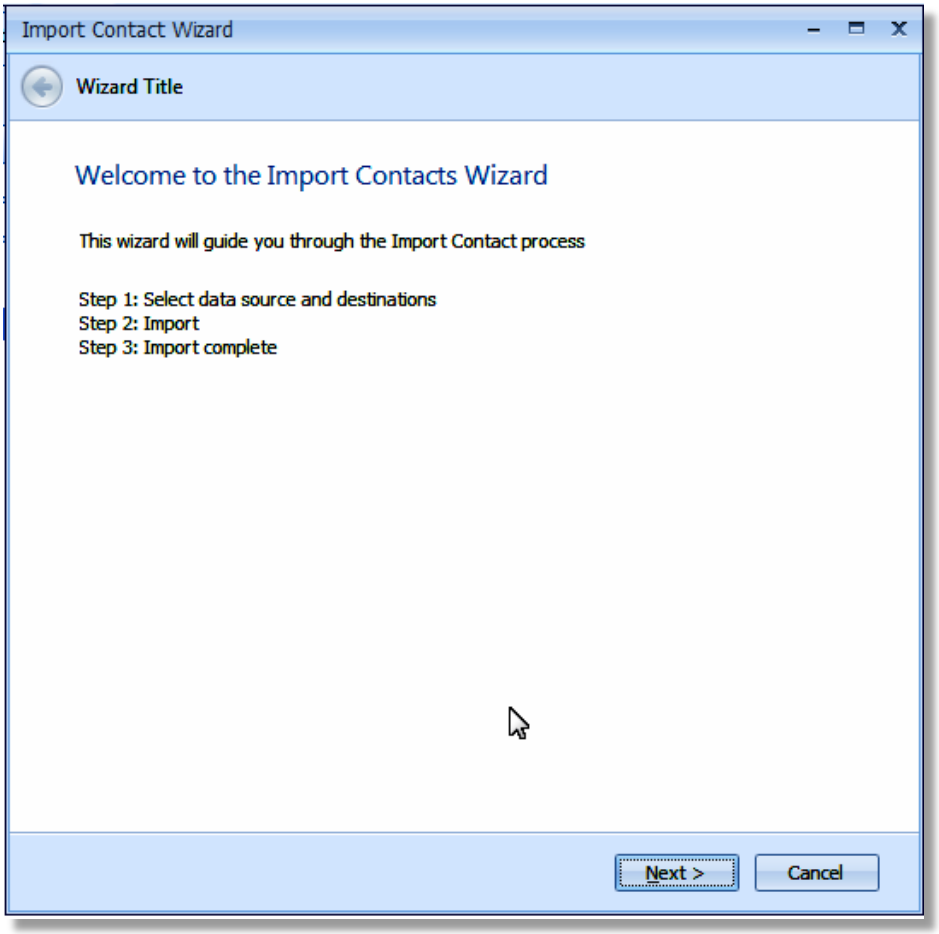


Figure 7-17 Import Contacts Welcome Page – Click on Next to Continue

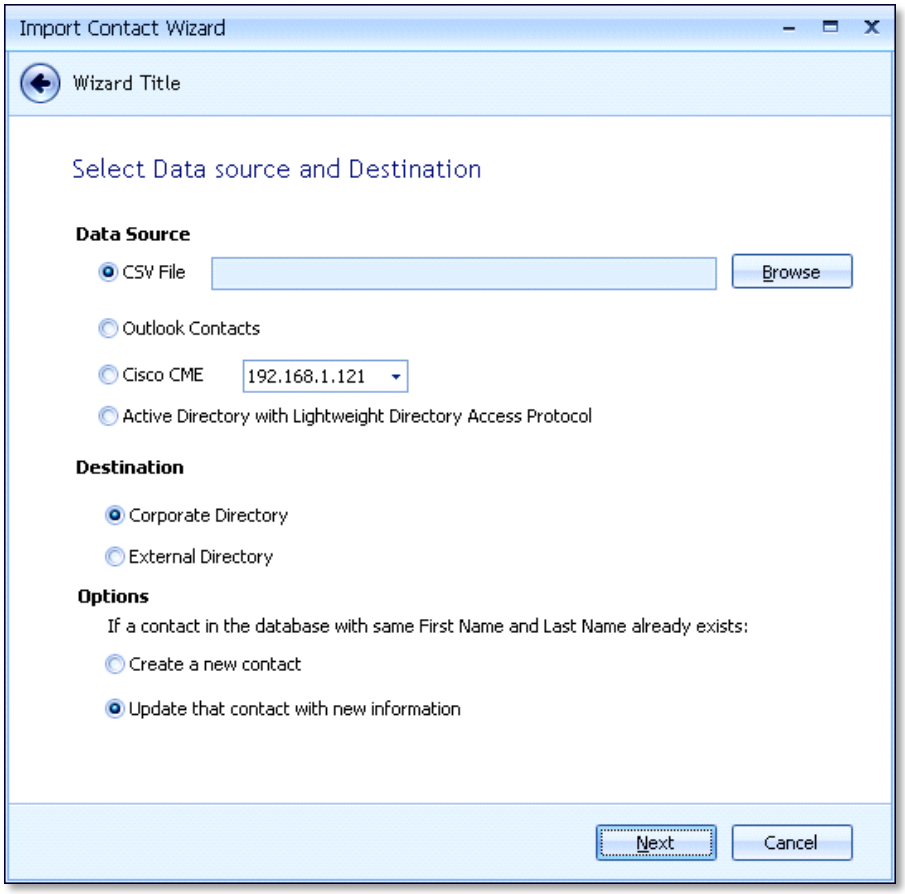


Figure 7-18 Import Contacts Data Source and Destination Page

7.7.1.1 Data Source- File

The data source can be a text file (CSV format text file or the CallConnector import xml file) or Cisco router. When a text file is selected, you can check to option to associate the user account with a phone from the specified router. In this case, the username on the ephone must match with the login name specified in the import record.

7.7.1.2 Data Source – Outlook

Lets you select the Outlook contacts folder from which to import the contact data.

7.7.1.3 Data Source – CME Router

When there are multiple routers, use the pulldown list to select the router from which to import the users. User information is derived from each ephone on the selected router with a username and password. The user name is pulled from the name field of the first ephone-DN configured on that phone.

7.7.1.4 Destination

There are two directories to which the non-user contacts can be imported. These are to Corporate Directory or the External Directory. During Import you need to specify the directory to which the contact data will be written.

7.7.1.5 Options

The rules specify handling of a import when the new contact has first and last name that already exists in the CallConnector. The two options are:

Update Contact: The existing user information is updated
Create New Contact: A new contact record is created. This will have duplicate first and last names,

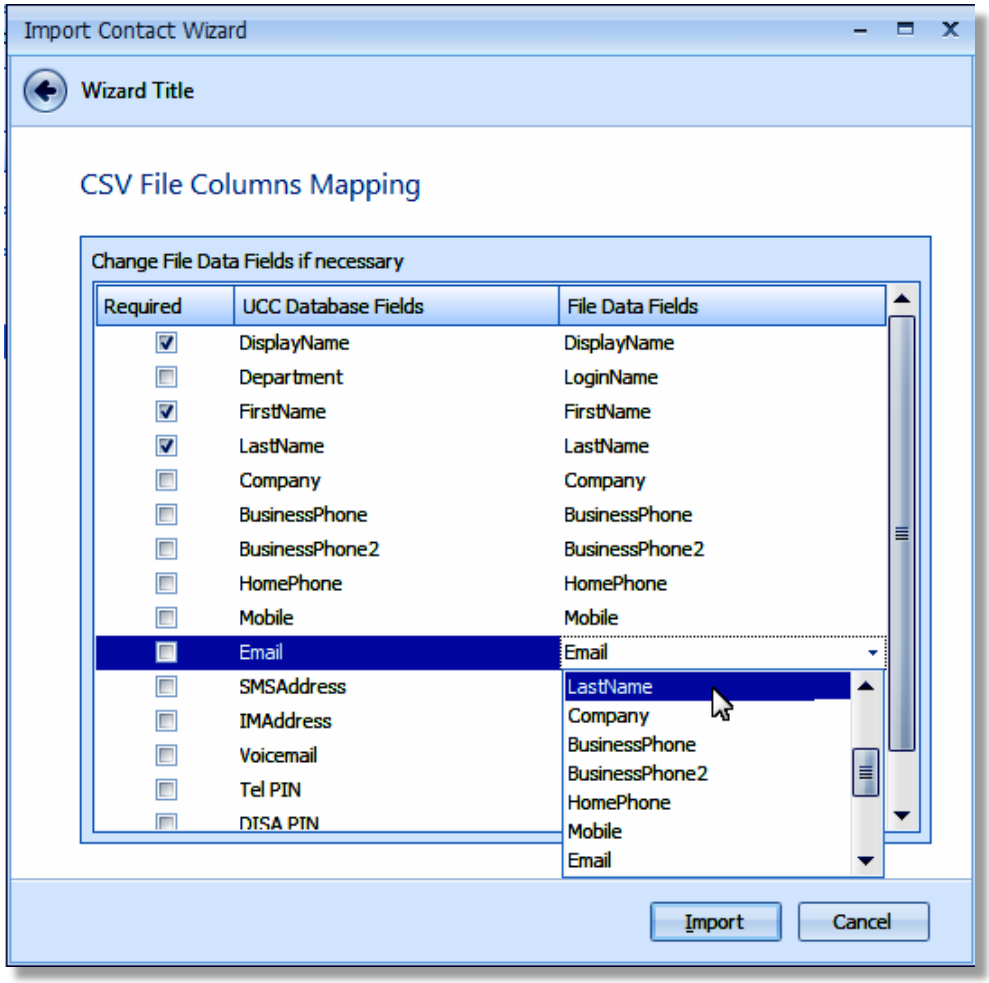


Figure 7-19 Import Contacts Data Source and Destination Page

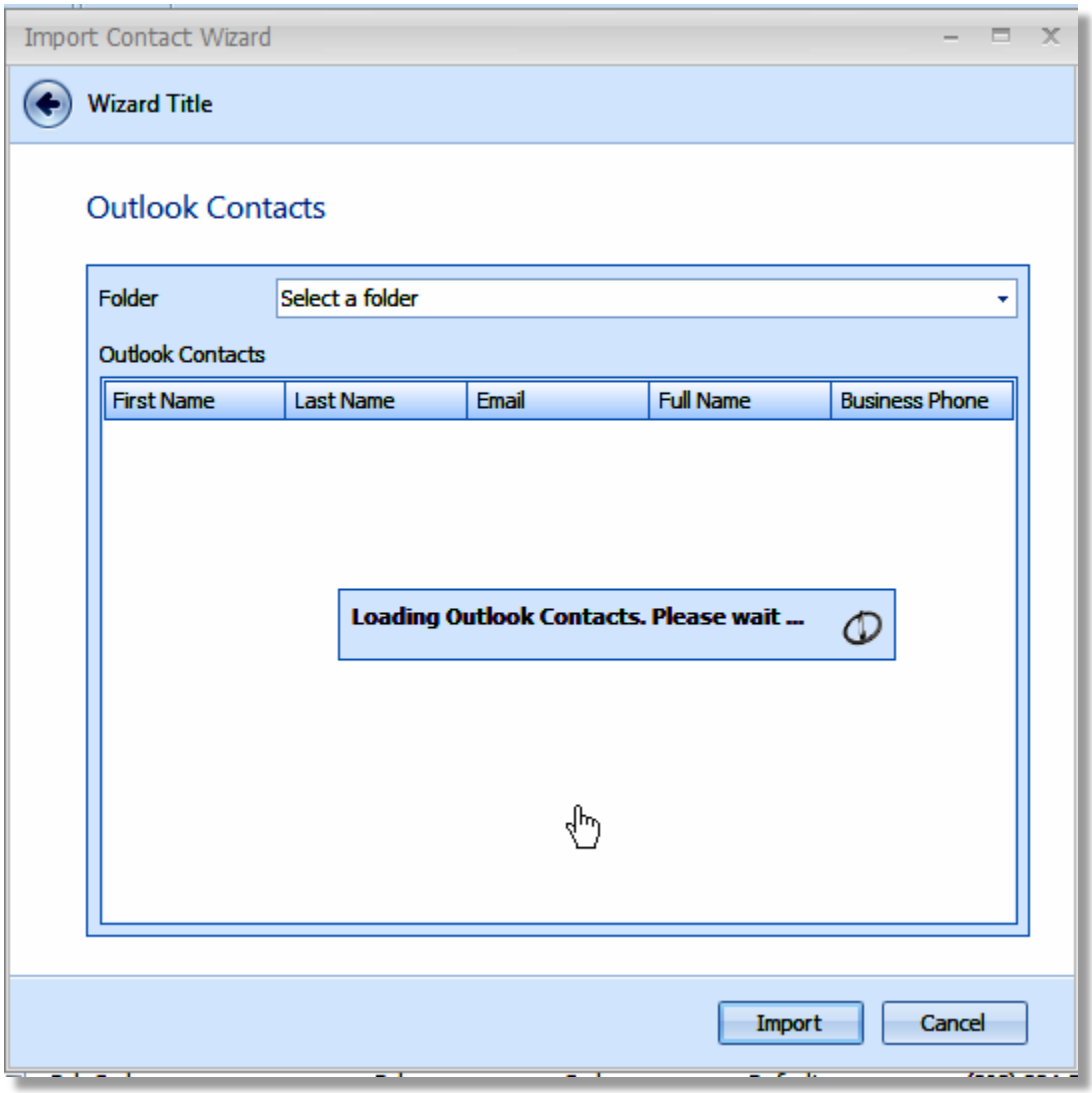


Figure 7-20 Import Contacts Data Source and Destination Page

7.7.2To Import Contacts

Step 1 Open the Manage Users/Contacts section by clicking on that tab in the menu bar.

Step 2 Click on Import button in the toolbar. A menu with two choices will display. Select Contacts.

Step 3 The Import User Wizard will display with the instructions on how to import contacts into the CallConnector Directories.

Step 4 Click on Next or press Alt + N to continue. The next screen allows you to select the data source, the target directory and the import rules. There are three options for data source: File (of type CSV file or XML file), Outlook or Cisco CME Router.

Step 5 If your data source is file, click on Browse… to select the file. With this option, you can associate the field from the Import file to the fields of the target database. For each database target field, click on the File Data field and select the import field. If the source file does not have data for the selected target field, then select Bank or Do Not Import,

Step 6 If your data source is Outlook, then in the next step you will need to select the contact folder from which to import the contacts. From the pulldown list select the Outlook contact folder.

Step 7 If you want to import user phone accounts from the Cisco CME router, check on Cisco CME. Then select the IP address of the Cisco CME router.

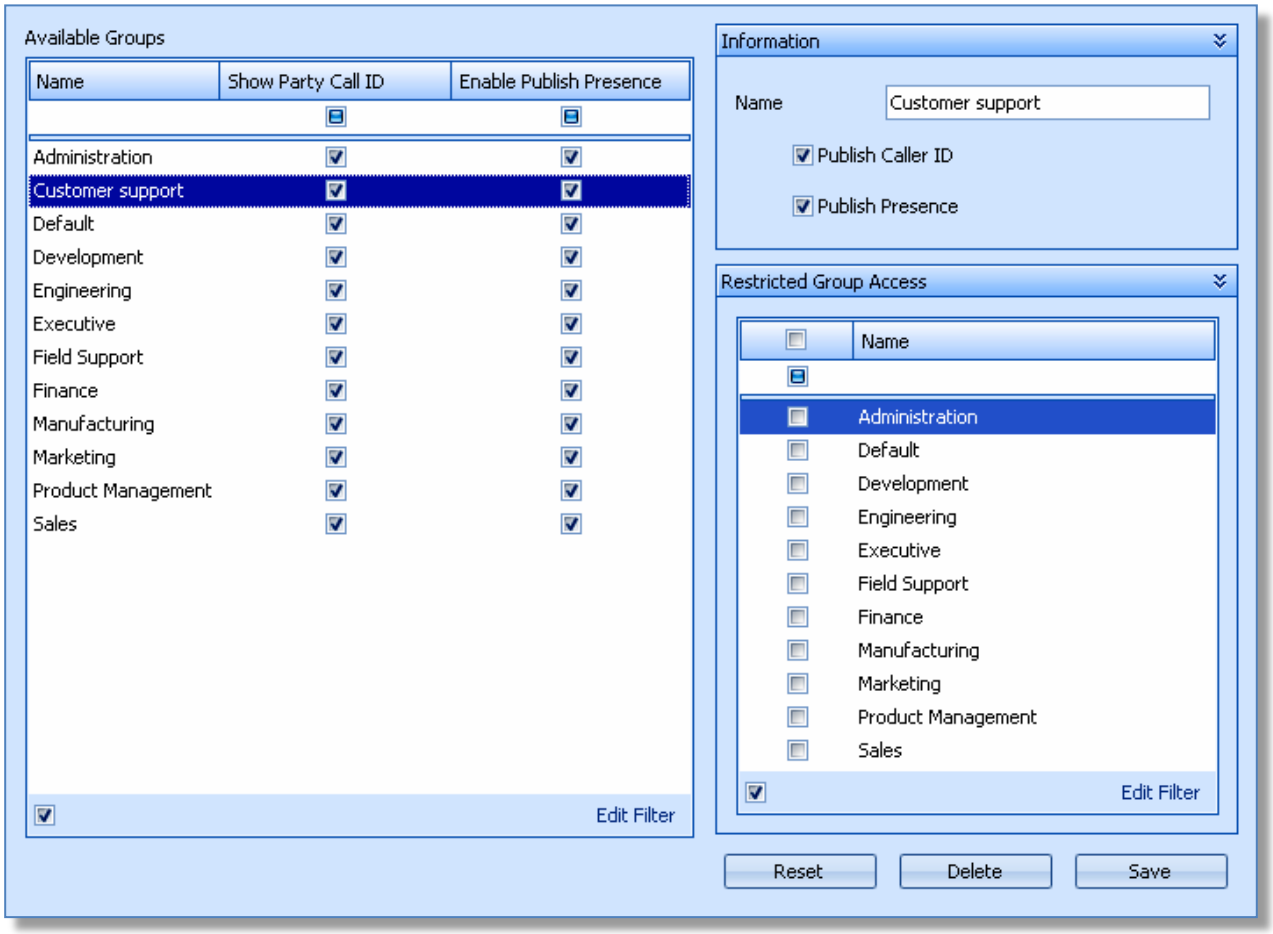
Step 8 Select the target directory. There are two choices – Corporate Directory and External Directory.

Step 9 If a imported contact has a first and last name that exists in the target database, you can select the ‘Update that Contact with new information’ option or the ‘Create a new Contact in the Options section.

Step 10 Click on Next or press Alt + N. The Import User Wizard will display the import options you selected.

Step 11 Click on Import or press Alt + I.

7.8 Maintaining Groups



Group List Group Details

Figure 7-21 Group Settings

The administrator needs to setup the groups or departments of the organization. By default, a list of groups is pre-installed. These can be used, modified or deleted based on your organization. The above figure shows all the default groups.

Each CallConnector user has to be placed within a group/department or the system will place them in the Default group.

7.8.1Group Window

7.8.1.1.1 The Group window contains two major components:

Available Groups: Lists the groups that have been defined for use within the Smart CallConnector system. Upon selecting a group entry, the details of the selected groups will be displayed in the Group Details window. Just like any other list in the CallConnector Configuration Manager, this list is highly user-customizable to suit your needs. Please see the Customization section of Chapter 2: Overview for more information.

Group Details : Displays the information of the selected group. From this window, you can change group name, publish caller id and presence status, and configure which groups have restricted access to your group.

7.8.2Maintaining Group Information

You can view and edit the following group information:

Field	Description
Name	The name of the department in the organization.
Publish Caller ID	This option enables the publication of the caller, called numbers with the call status. Uncheck this option to stop publishing caller/called numbers. Only the call state information will be displayed for users in this group.
Publish Presence	This option enables the publication of the user's availability status. Uncheck this option to stop publishing all status information for the users in this group.
Restricted Group Access	When checked, the users of the groups in this list cannot view the presence status of the members of the group currently selected in the Available Groups list.

Table 7-11 Group Information

7.8.3To Add New Group

Step 1 In the Directory page, click on New Group.

Step 2 Enter the new group information in the Directory page and click Save or press the shortcut key Alt + S.

7.8.4To Edit Group Information

Step 1 In the Directory page, select Group Management/Groups. The CallConnector Configuration Manager will load the list of available groups.

Step 2 Select the group to edit in the Available Groups list. The detailed information of the group will be displayed in the Group Details window.

Step 3 Edit the group information. You can click Reset or press Alt + R to delete all the group details.

Step 4 Click Save or press Alt + S to save the changes.

7.8.5To Delete A Group

Step 1 In the Directory page, select Group Management/Groups. The CallConnector Configuration Manager will load the list of available groups.

Step 2 Select the group to delete in the Available Groups list.

Step 3 Click Delete or press Alt + D.

7.8.6To Allow/Restrict Group Access

Step 1 In the Directory page, select Group Management/Groups. The CallConnector Configuration Manager will load the list of available groups.

Step 2 In the list of available groups, click on the name of the group to which you want to apply the access restrictions. The detailed information of the group will be displayed in the Group Details window.

Step 3 In the Restrict Group Access list, check on the groups which you do not want the members to view the presence status of the users in the group highlighted in the Available Groups list.

7.9 Setting up Company Work Schedule

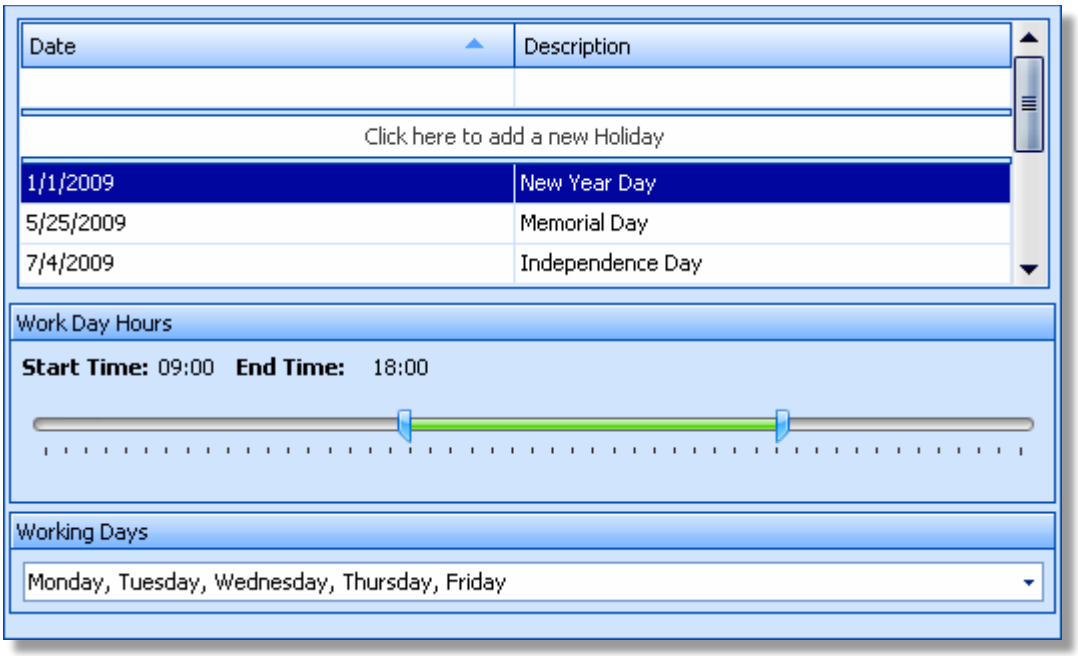


Figure 7-22 Company Settings

The Smart CallConnector Server uses the organization's work schedule to determine when to automatically forward incoming calls to night routing number. In the CallConnector Advanced Server, this information is used in the user specified rules for call routing. There are three areas system administrators have to setup in order to enable accurate call routing services:

Working Days: These are the days during the week when the attendants work on the CallConnector system. This information is counted towards every week throughout the year unless the specific day is defined as a holiday.

Work Day Hours: These are the hours that the CallConnector system treats as regular work hours for each workday. If incoming calls arrive during these hours, they will not be forward to the night routing number unless explicitly specified by the user rules.

Holidays: These are the special days during the week that the CallConnector system will automatically forward any incoming calls to the night routing number or to the voice mail system. There is no special order that system administrators have to follow when they configure these fields. However, they must make sure that all three areas are setup properly to allow accurate behavior of the system. Once entered, all the information will be saved automatically when the system administrators exit the Configuration Manager. The following sections will describe how to work with each area.

7.9.1Maintaining Holidays

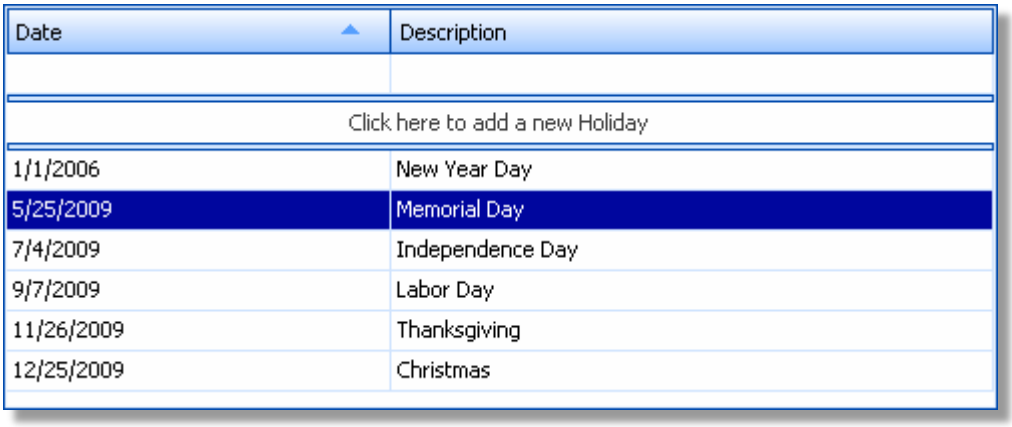


Figure 7-23 Manage Holidays

Holidays are the days during the week that should be treated as days off from work. System administrators should configure these days so that when there are incoming calls, the calls will be routed to the appropriate numbers.

When added, holidays are displayed in a list where you can:

1. Sort the holiday entries on ascending or descending order
2. Character-by-character search to retrieve the entries that match the search term
3. Drill down the information by entering the criteria in the Filter Editor
4. Decide which fields to display
5. Group the holiday entries by particular fields

For information on these features, please see the Customization section of Chapter 2: Overview.

7.9.2To Add New Holidays

Step 1 On the Directory page, select Company/Settings.

Step 2 Click on the second row of the list that says “Click here to add a new Holiday”.

Step 3 On the Date field, enter the new holiday or click on the arrow and select the date from the calendar. The format of the date is mm/dd/yyyy.

Step 4 Click on the Description field and enter the description of the holiday.

Step 5 Press Enter to add the new entry to the list.

7.9.3To Edit Holiday Entries

Step 1 On the Directory page, select Company/Settings.

Step 2 Select an existing holiday entry.

Step 3 On the Date field, enter the new date or click on the arrow and select the date from the calendar. The format of the date is mm/dd/yyyy.

Step 4 Click on the Description field and enter the new description of the holiday.

Step 5 Press the arrow keys or click on another entry to edit that entry. The edited information will be saved automatically when you move to another entry.

7.9.4To Delete Holiday Entries

Step 1 On the Directory page, select Company/Settings.

Step 2 Select an existing holiday entry.

Step 3 Press Ctrl + Del to remove the selected entry.

7.9.5Configure Work Day Hours

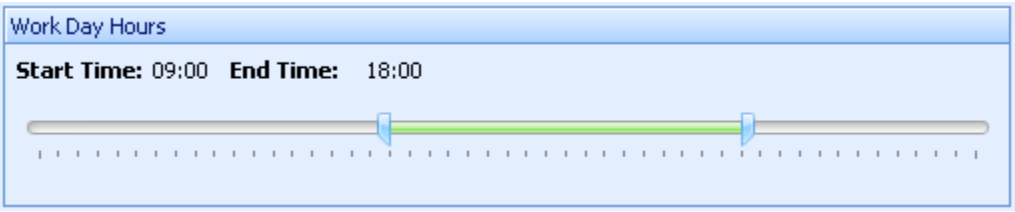


Figure 7-24 Configuring Work Day Hours

Work Day Hours is a continuous period of time during the work days when the CallConnector users receive and answer calls. On the Company Settings page of the CallConnector Configuration Manager, it is displayed as a time bar where each time period is 30 minutes starting from the point 00:00 to the point 24:00. Two blue markers indicate the start time and end time of the work hour period. Any time period inside the green area is considered work hours.

System administrators can click on the start time or end time markers and drag them along the time bar and drop them at the desired time to adjust the work hour time period. While being dragged, the markers will tell you the current start time and end time.

7.9.6Configure Work Days

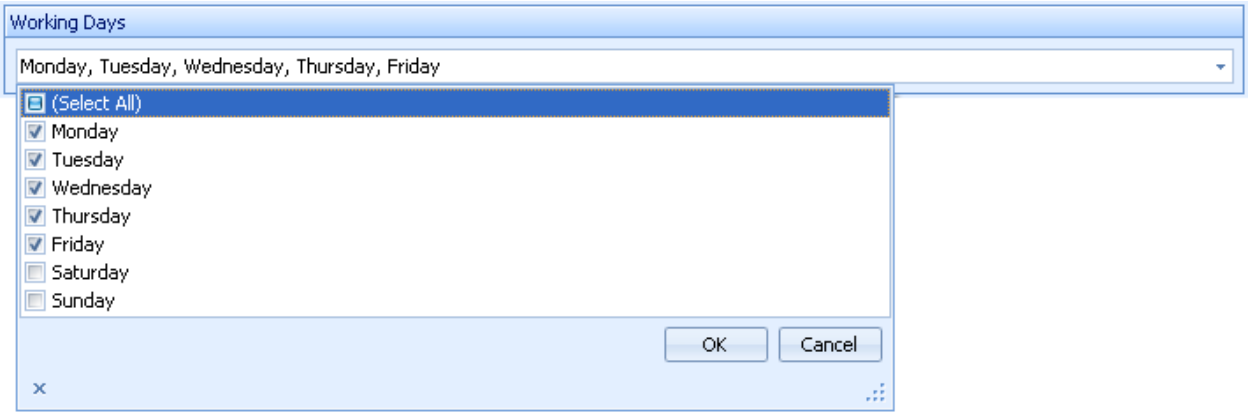


Figure 7-25 Configuring Work Days

7.9.7 To Setup Working Days

Step 1 On the Directory page, select Company/Settings.

Step 2 Click on the Working Days field and check the days which are the working days for your organization or Select All to select all days in the week.

Step 3 Click OK to save the changes.

CHAPTER 8

8 Configuring Operator Parameters

The Configuring Operator Parameters section allows the administrator to configure the call queues for the CallConnector Operator application. This section also lets the administrator to create and maintain the list of system speed dials and page numbers for the organization.

This chapter explains different parameters required for configurations for the CallConnector Operator and the steps for making these changes:

Operator Parameters Overview -	Provides an overview of the steps for configuring the CallConnector Operator, and describes the required information and router configurations.
Configuring the Router for Operators	Provides an overview of the phone configuration required on the router for the operator call queues and park/page setup.
Navigating the Windows -	Describes how to open the different pages available in the Configure Operator Parameters section.
Configuring Call Queues -	Describes different types of incoming call queues and explains how to configure them.
Updating Predefined Queues Parameters and Park Numbers -	Describes different pre-defined call queues and explains how to configure them. This section includes description of the list of available park numbers and how to select them for the operators
Maintaining the Speed Numbers -	Provides an overview of the Speed Dials page and explains how to create and configure these numbers.
Setting up the Page Numbers -	Provides an overview of the Page Numbers pages and explains how to create and configure these numbers.

8.1 Operator Parameters Overview

In addition to setting up the operator user-account and entering the directory information, the configuration of the CallConnector Operator requires additional parameters to be setup as displayed in the Operator user interface shown below – specifically relating to the Queue window on the right and the features on the call control toolbar.

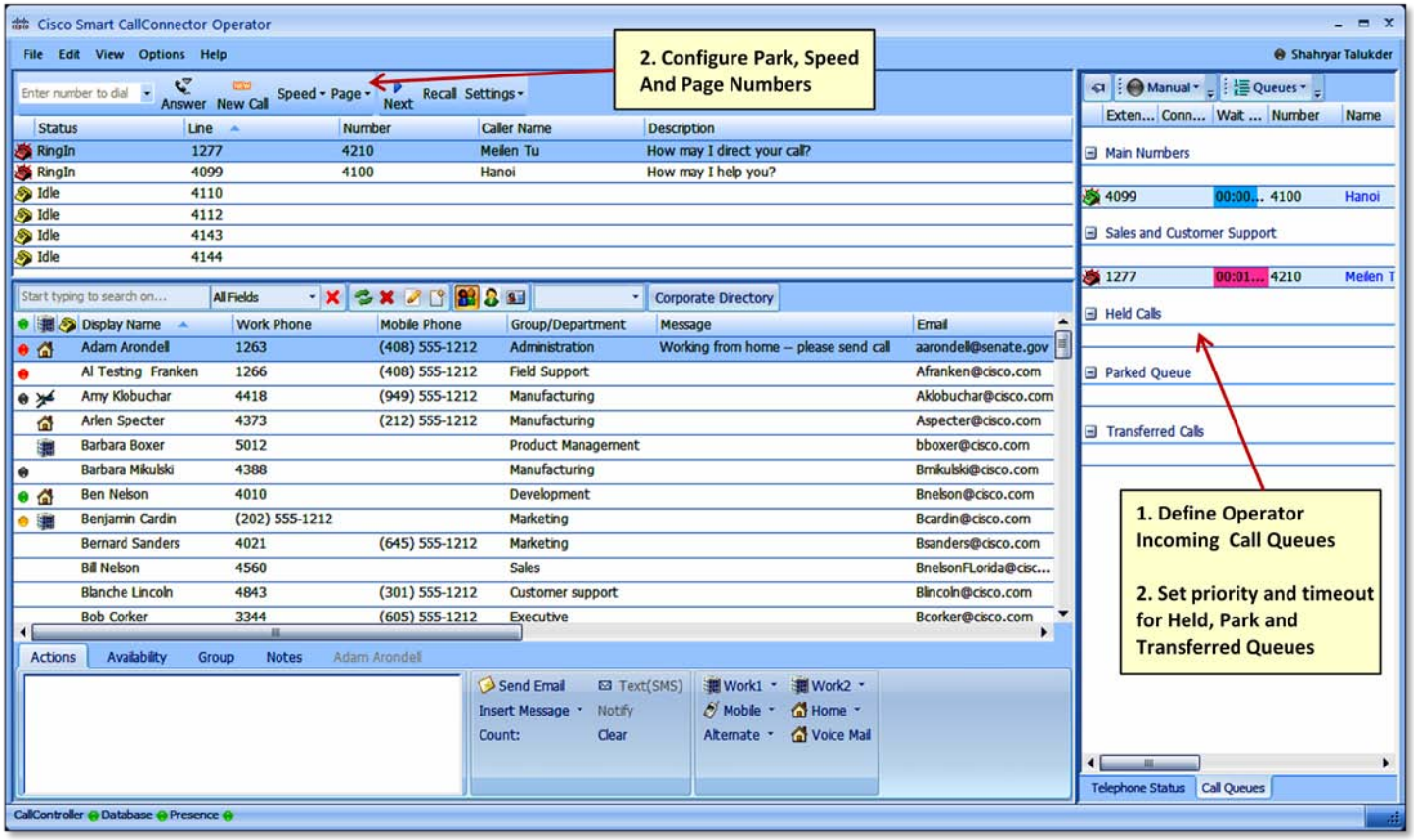


Figure 8-1 CallConnector Operator Console require configuration of Call Queue parameters and specification of Speed, Page and Park numbers

The configuration of these CallConnector Operator features includes setting up the following:

Incoming Call Queues: Incoming call queues need to be configured and assigned numbers from the operator's IP Phone. Defining a queue involves giving the queue a name, selecting the queue type, setting the queue priority, entering the busy and night routing numbers and the greeting text. The numbers from the operator's phone also have to be added to this queue.

Predefined Call Queues: There are three predefined or fixed call queues for a) calls placed on hold by the operator console and for the calls that have been b) Parked or c) Transferred by the operator. These fixed queues cannot be deleted or renamed. Only the queue priority and timeout settings can be modified.

Operator Park Numbers: The administrator can select the operator's park numbers from the available park slots configured on the router. The operators can park calls at these numbers. Calls parked at these numbers are displayed in the Park Queue and the selected park numbers are displayed in a menu when the Park button is pressed.

Speed Numbers: The speed button in the call control toolbar displays a list of speed numbers. These numbers can be configured by the administrator for all the operators.

Page Numbers: Organizations with overhead paging can specify these page numbers during configuration. These numbers are displayed when the page button is pressed and allows a call to be made or transferred to the selected page number.

8.1.1 Operator Console Configuration Tasks

A system administrator can perform the following tasks from the Configuring Operator Parameters section of the Configuration Manager:

1. Adding the incoming call queues for the operators. This involves configuring the queue parameters including the queue name, greeting text, priority, busy/night routing numbers and the queue type.
2. Add and remove the operators from the call queues.
3. Specifying the operator's phone numbers that will belong to the call queue.
4. Update the priority and timeout values for the predefined cal queues (Held, Parked and Transferred calls)
5. Select the park numbers for the operators from the list of the park numbers configured on the router.
6. Add, Modify and Delete the Speed Numbers for the operators
7. Add, Modify and Delete the Page numbers for the operators.

This chapter will provide detailed steps for performing these tasks.

The operator user account has to be setup first before the console parameters can be configured. Configuring the operator user account and entering the directory information is described in the chapter on Managing Users and Contacts.

8.1.2Notes

The first step for configuring the operator console is to provision the required router parameters. Most of the operator parameters involve selecting options from the router phone configuration after they have been downloaded for the CallConnector. If these router configurations change, then the CallConnector configuration will be out of sync with the router. The changes in the router configuration will have to be downloaded again and these operator parameters reviewed for impact. The CallConnector Services may need to be restarted to apply the changes.

The configuration changes required on the router for the Operator parameters should be completed first to make them available to the Configuration Manager application after download. These router changes can include:

1. Setup of the operator's phone with the directory numbers required to process the organization's incoming calls.
2. Setting up the routing of the incoming calls to come to the appropriate operator's directory numbers.
3. Setting up the routing to alternate numbers for these incoming calls when the operator's are not available.
4. Setting up the park number
5. Setting up the paging system and page numbers

Prior to configuring the Operator Console parameters, the following CallConnector configuration steps have to be competed:

Router phone configuration has to be downloaded and the operator's phones selected for connection and control by the CallController.

Radius accounting parameters for the CallConnector telephone status have to be setup on the router. These changes can be programmed from the Configuration Manager → Setup Radius page.

The CallConnector Dial plan has to be setup. Note - the Configuration Manager does not download the router dialing configurations.

The CallConnector users have to be setup, specifically the operator's user accounts have to be configured and their phones assigned to them. Note - only the user account of type 'Operator' or 'Administrator' can login to the CallConnector Operator application.

The CallConnector directory information should be imported and configured. The directory contact details can be imported from the router, for a text file or from Outlook folders.

The CallConnector Operator application can display information from three directory databases. The contact information for each of these directories should be imported or configured for use by the operators

Outlook directory information is accessed using the Operator's outlook account information on the local PC.

8.2 Router Configuration for Operator Consoles

8.2.1 Overview

The CallConnector solution downloads the router phone configurations and makes the information available during the setup of the CallConnector server.

In general, for a CallConnector Server solution, the following phone parameters should be configured on the router. These changes should be made prior to configuring the CallConnector solution:

Configure all Ephones with usernames and passwords: This allows the phones to be controlled from the CallConnector.

Configure all Ephone-DNs with the name field populated with first and last name: This allows the CallConnector directories to be imported from the router.

Radius accounting parameters: This allows display of telephone status. Notes - The Radius parameters can be programmed from the Configuration Manager Setup Radius page.

For the Operator Console, additional configuration is required on the router. These include:

8.2.1.1 Configuration of the Operator's Phone

Configuration of the directory numbers on the operator's phone to receive the incoming calls. This requires provisioning the ephone with sufficient ephone-DNs (preferably octal channel DNs) to receive the peak incoming call traffic.

If the operators receive more than one type of incoming calls, for example Main Number and Customer Service calls, then ephone-DNs for each of these call types should be provisioned.

If there are more than one operator positions then all the operator phones need to be provisioned with their directory numbers to receive the incoming calls.

Setup the default ephone-templates with the required operator phone features including Transfer-to-Voicemail.

8.2.1.2 Routing of Incoming Calls to the Operator Numbers

Once the directory numbers have been configured on the operator's phones, the incoming calls need to be routed to these directory numbers.

Calls can be routed directly to the operator's numbers, or routed via the Auto-Attendant, or through Hunt Groups. These call routing examples are described in more detail below.

For multiple operator positions, the router should be configured to send call only to the available operators.

8.2.1.3 Routing of incoming calls when operators are Busy or Not Available (Night time/Off-hours periods)

When operators are not available to take calls, the organizations incoming calls need to be re-routed to alternate numbers or allowed to leave voice messages.

Busy condition is when there are no operators available to take calls during business hours.

Night condition is for call routing during non-working hours.

The re-direction methods vary depending on the incoming call routing methods.

8.2.1.4 Setting up voice mailboxes and direct-transfer-to-voicemail feature.

In an employee is not available or is busy on a cal, then their calls can be sent to their voice mailbox. The CallConnector uses the Transfer-to-Voicemail feature

1. Setup the voice mailboxes for the employees
2. Enable the Direct Transfer to Voice Mail feature

8.2.1.5 Setting up the Park Numbers to allow calls to be parked for users.

The park numbers are provisioned in the router and available to the Configuration Manager after download of router phone configuration. Administrators can select the operator park numbers from this list.

8.2.1.6 Setting up the overhead or zone paging for parking calls and announcing the call.

If overhead paging is setup in the router, the administrators can specify the Page DNs for display in the operator page menu button.

8.2.2 Configuration Examples

Two operator console configurations will be used to describe the router configuration requirements

a) Single Operator console position and
b) a customer site with multiple operator console positions with a hunt-group distributing the calls to these operator positions.

Also each operator position in the example shall handle two types in incoming calls

a) Main Number calls and
b) Customer Service calls.

8.2.3 Operator’s Phone

8.2.3.1 Phone Type

The operator’s phone needs to have the processing capacity to handle the expected volume of incoming calls. The operator phone must be one of 796x, 797x or a SPA525 with the required number of buttons.

8.2.3.2 Number of DNs on the Operator Phone

The incoming calls are directed to the directory numbers on the operator's phone. For each type of incoming calls there need to be sufficient number of 'channels' to receive the peak call traffic plus some additional capacity for transferring calls and making outgoing calls. In the single operator example shown below, the directory numbers are configured for two call queues – Main Number and Customer Service, plus there is a personal DN for the operator's private calls. The operator DNs are octal lines, providing a capacity of 15-18 peak calls per queue.

Button 1: 4300 (dual) ← Personal Number

Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)

Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ← Customer Service Calls
Button 8: 4308 (octal)

Figure 8-2 Configuration of DNs for a Single Operator Position

When multiple operator positions are deployed at a customer site, following requirements need to be considered in determining how the calls with be routed:

Distribution of the incoming calls to the operators. Calls can be evenly distributed to between the operators or in the case of primary and backup, calls could first be sent to the primary position and then to the backup for overflow or when the primary position is not available.

Calls send only to available operators. The incoming calls should be sent only to the operators that are currently available. Operators can be on break or otherwise not available to take calls.

Overflow and not available routing. When no operators are available, including during off-hours incoming calls need to be handled.

An example of two operators with hunt groups for distributing calls is shown below:

Primary Attendant

Button 1: 4300 (dual) ← Personal Number

Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)

Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ←Customer Service Calls
Button 8: 4308 (octal)

Backup Attendant

Button 1: 4310 (dual) ← Personal Number
Button 2: 4311 (dual)

Button 3: 4312 (octal)
Button 4: 4313 (octal)← Main Number Calls
Button 5: 4314 (octal)

Button 6: 4315 (octal)
Button 7: 4316 (octal) ←Customer Service Calls
Button 8: 4317 (octal)

Figure 8-3 Configuration of Operator Phone DNs for Primary and Backup Operators

The difference between the single position and the multiple operator positions is that the main number and customer service directory numbers belong to hunt groups' setup in the router.

An example of the Main Number hunt group is shown below:

8.2.4Incoming Call Routing

Incoming calls need to be routed to the operator's directory numbers. The Cisco routers provide a numbers of methods for directing the incoming calls to the appropriate directory numbers. An overview of some of these methods is provided below. Please refer to appropriate Cisco documentation for more details.

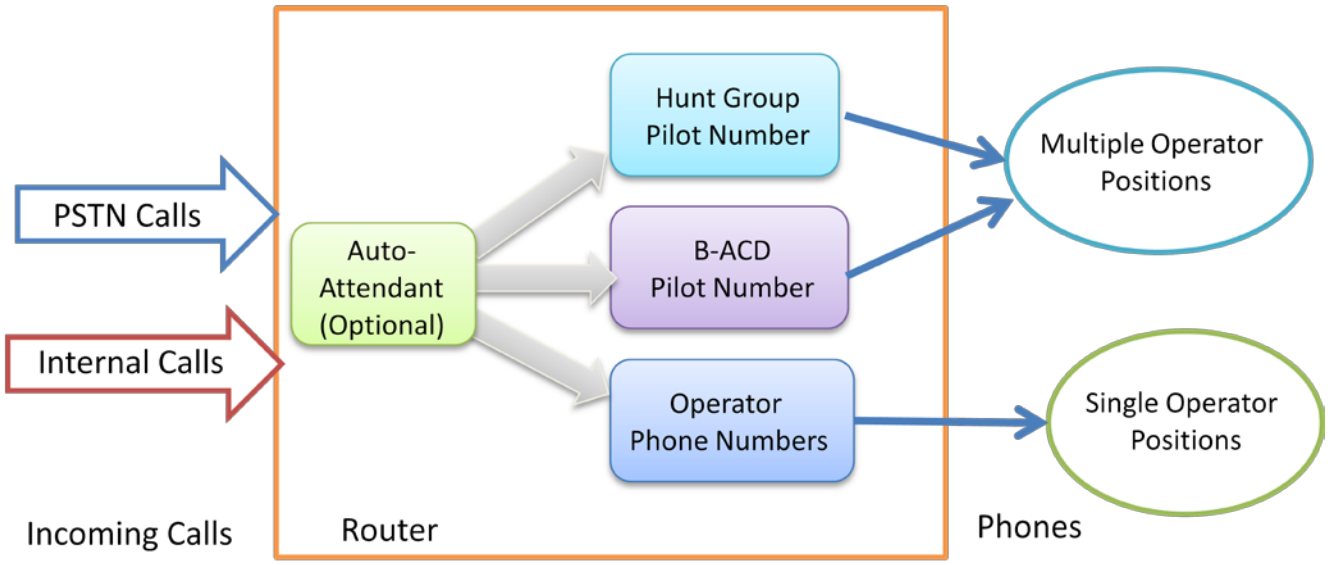


Figure 8-4 Routing of incoming calls to the operators

8.2.4.1 Selection and Forwarding of Incoming Calls

Incoming calls can be originated from extension numbers (internal) or from the outside the router (PSTN calls). Administrators can use dial transforms, connection plars or dial peers to direct the calls to the next layer of routing.

8.2.4.2 Manual (user selected) Direction of Calls

The Cisco Unity Express Auto-Attendant feature can presents a prompt to the caller and a list of options to the caller. The callers can make their selection for the type of service they need by pressing DTMF keys. The Auto-Attendant can send the calls directly to the Operator's phone number or to a hunt groups,

8.2.4.3 Distribution of Calls to an Available Operator

Hunt Groups in the router can be used to distribute the calls to a list of directory numbers, in this case the operator's directory numbers. A hunt group consists of a list of directory numbers and a call distribution algorithm. Peer, sequential or round-robin algorithms can be used to determine the order in which the hunt group's list of numbers receive the incoming calls. The hunt group is aware of the busy/idle status of the directory number. A user e.g. operator, needs to be logged in to the hunt group to receive the calls.

If no one is available, the hunt groups can route the caller to alternate number or voice mail box.

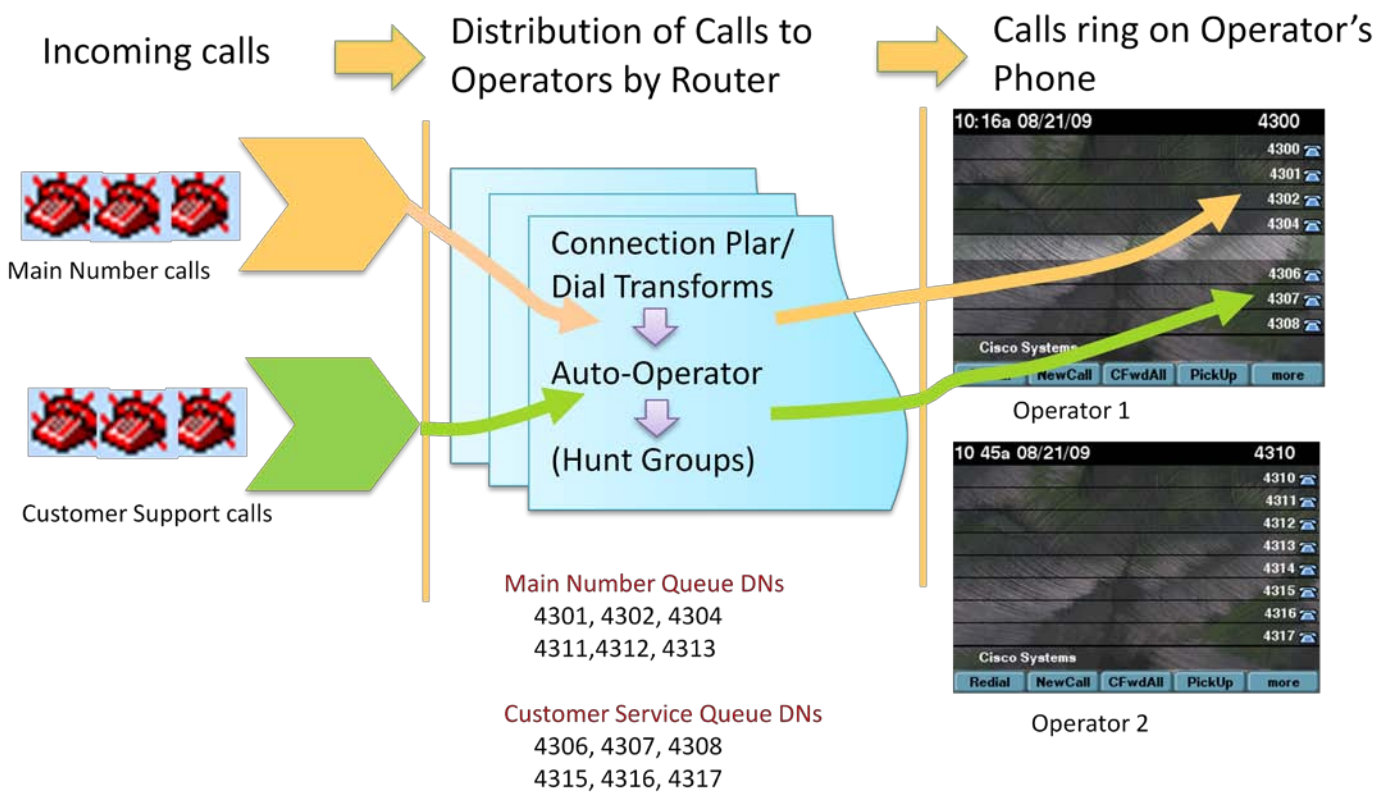


Figure 8-5 Routing of Incoming Calls to the Operators

8.2.5Busy/Night Routing

When the operator(s) are not available to take the calls, either because they are busy or on calls or because it is off-working hours, the incoming calls to the business still need to be handled. The routing of calls for operator busy or not available varies depending on the call distribution methods used to send the calls to the operator's directory numbers.

Auto-attendant can be setup to send calls to the night/off-hours numbers. Hunt groups have a final number option to direct the incoming calls when there is no number in the list available to receive the calls. This final number option can be used for directing calls when there are not operators available or all the numbers are busy.

Calls routed directly to the operator's directory numbers can be forwarded to busy or night handling numbers. The CallConnector Operator console call queues can be configured with these busy and night numbers. When the operator places themselves in either Busy or Unavailable state, then the application automatically enabled the call forwarding.

Operator State	Auto-Attendant	Hunt Group Final Number	Call Forward on Operator's DN
All Operators Busy	N.A.	Voice Mail or Other Number	Call Forward to Busy Number
Night or Not Available	Route to Voice Mail or Other Number	Voice Mail or Other Number	Call Forward to Night Number

Table 8-1 Summary of Routing Options for Busy and Night Conditions

8.2.6 Routing to Voice Mail

The CallConnector Operator Console provides a Transfer-to-Voice Mail feature. This requires the following configurations on the router and in the CallConnector directory:

Voice mail boxes need to be configured for the user's primary directory numbers
The default ephone-template should have Transfer-to-Voicemail enabled. This is not a requirement, but recommended.
In the Corporate directory, the Voice Mailbox field needs to be configured with the contacts voice mailbox number. Generally this is the same as their primary directory number.

The transfer-to-voice mailbox feature is implemented using the Transfer-to-Voicemail softkey on the operator's phone. When the feature is selected, the CallConnector Operator initiates the Transfer-to-Voicemail softkey and enters the number of the mailbox to which the call needs to be transferred.

8.2.7 Setup for Park Numbers

The CallConnector Operator Park Queue displays the calls that are parked on the numbers that have been selected for the operators to monitor. This requires the following configuration on the router and in the CallConnector.

The Park directory numbers have to be defined in the router.

Once the router configuration has been downloaded, the administrator has to select the park numbers that operators will monitor.

Notes:

Only the directory numbers that have been configured as Park slots can be selected in the Park queue.
The Administrator can select some or all or none of the park numbers on the router.
Only the selected park numbers are monitored. The Park Queue displays the details on the calls that are currently parked on these numbers.
In multi-router deployments, park numbers from multiple routers can be selected.
The selected park numbers are also displayed in the Park menu in the Call Control toolbar.

8.2.8 Overhead Paging

The CallConnector Call Handling toolbar provides a Page button to display a list of page numbers. The operators can speed dial these page numbers and make announcements. For example once a call has been parked, a page announcement can be made for the call to be picked up.

These page numbers need to be configured on the router and during the server configuration. The CallConnector Operator expects that the calls made to the page numbers will be auto-answered. This requires the following configuration on the router and in the CallConnector.

Setup the overhead paging system and assign the Ephone-DN to the paging circuits.
Once the router configuration has been downloaded, the administrator has to select these page numbers to configure the Page Number menu.

Notes:

Only directory numbers can be selected as Page numbers. The administrator cannot enter a directory number – the number is selected from the list of ephone-DNs

8.3 Navigating the Operator Console Window

This section describes the methods for opening the pages associated with configuring the different operator console parameters. You can use the toolbar buttons to jump to a particular page. You can also select a folder and an item within the folder to go to that page.

The Configuring Operator Parameters window consists of three folders. The contents of these folders and the parameters that can be configured in each window are summarized below.

Manager Call Queues: Displays a list of the configured incoming call queues and lets the administrators add queues or modify their attributes and delete the unused call queues. Administrators can select a call queue in the list to view their attributes in the Call Queue window.

Held, Park, Transferred Queues: This folder opens the Predefined Call Queue Parameters window which displays a table of the selected park numbers and the priority and timeout values for the predefined call queues. From this window the administrator select the park numbers for the operators and the park queue. They can also change the parameters of the predefined call queues.

Speed Dials and Pages: The Speed Dial and Pages folder contains two items – Speed Dial and Pages.

Selecting the Speed Dial item in the list displays the Speed Dial window. The system speed dial numbers can be added, deleted and updated from this window.

Selecting the Pages item in the folder displays the list of page numbers specified for the operators. These page numbers are displayed when the Page button is pressed in the Call Control toolbar. The operator's page numbers can be added, deleted and modified from this window.

8.3.1.1 Operator Console Toolbar

Figure 8-6 Configuration Manager Operator Console Parameters toolbar

Toolbar Button	What does the button do
Manage Call Queue	Opens the Manage Call Queues page to add, modify or delete the incoming call queues
Predefined Queue Settings	Opens to the Predefined Queue Settings page for configuring the Park Numbers and the Held, Park and Transferred queue priority and timeouts
Manage Speed Dial and Page	Opens to the Speed Numbers page for configuring the Operator Speed Numbers. This folder also provides access to the Page configuration.
Add New Queue	This button is used to configure a new incoming call queue. You need to be in the Manage Call Queues page.
Add New Speed Dial	This button is used to add a new Speed number. You need to be in the Speed Dial page.
Add New Page	This button is used to add a new Page number. You need to be in the Page window.

Table 8-2 Configure Operator Console Parameters toolbar buttons

8.3.1.2 Operator Console Parameters Folder

The Operator Console Parameters is comprised of a number of configuration pages. These pages can be accessed from the folder to the left of the configuration pages. The selected folder is highlighted in orange. Click on a folder and then the item in the folder list to view and make changes to those console parameters.

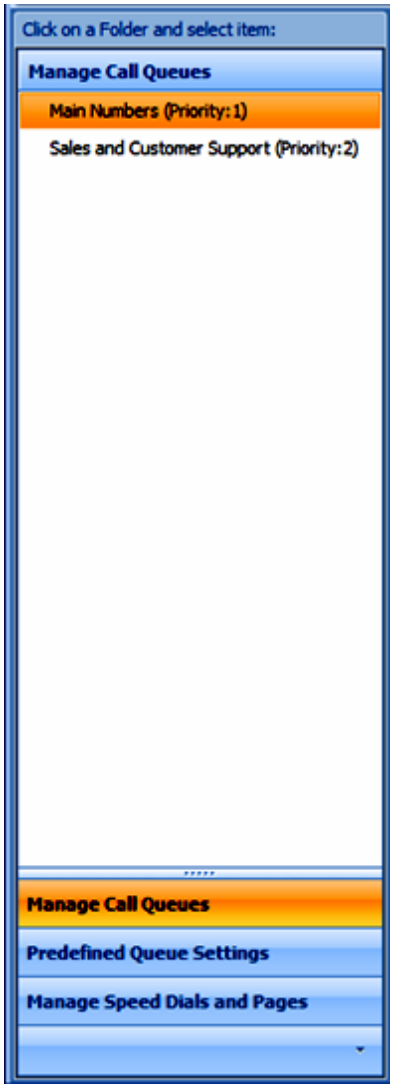


Figure 8-7 Configuration Manager Operator Console Parameters Folders

Folder	Folder Item	Configuration Page
Manage Call Queues	List of Incoming Calls Queues Click on a queue name to view the parameters	Displays the parameters for the selected call queue. Click on a queue name in the folder to make changes.
Predefined Queue Settings	Predefined Queues	Displays a table of the selected Park Numbers and the predefined queue parameters
Manage Speed Dials and Pages	Manage Speed Dials	Opens the Speed Dial Number configuration page. You can add, delete and update the speed numbers
Manage Speed Dials and Pages	Manage Page Numbers.	Displays the selected Page numbers. Allows you to add, delete and update page numbers

Table 8-3 Console Parameters Folders and Folder items

8.3.2 Pre-requisite Information for Configuring Console Parameters

Prior to setting up the call queues, system speed dials and page numbers, the administrator has to download the CME configuration data and select the ephones to be used, setup dialing parameter and radius, define company working schedule, and configure groups and users. The administrator needs to have the following configuration data before working on the Operator page.

Item	Description
Incoming Call Queues Data	The administrator may need to setup multiple call queues. For each call queue, the following information is required: The name of the call queue Whether the call queue is of type local or hunt group The priority level of the queue The alert timeout value of the calls in the queue The busy and night routing numbers Greeting text The directory numbers that should belong to the queue. These numbers can belong to a single Operator or multiple Operators. The details of the queue configuration data will be explained in the Call Queue section.
Monitored Call Queues	These include park, held and transferred call queues. For each of them, the administrator needs to know the priority level and timeout value of the call queue. For the park queue, the administrator needs to have the list of park numbers to be used by the operators.
System Speed Dials	The following information is required for system speed dials: Category Name Number
Page Numbers	The list of page numbers. Each page number entry includes the name and the directory number.

Table 8-4 Pre-requisite information for configuring Operator

8.3.3 Operator Configuration Steps

The following lists the steps for configuring the CallConnector Operator in the order of the recommended configuration process:

Steps	Description	Where to setup
Add CME routers	Adding CME Routers to the CallConnector Server allows the system administrator to download and import user phone accounts to the CallConnector directory.	Servers → Manage Cisco Routers → Navigation Bar
Download and select ephones to be used	The list of all ephones to be controlled by the Operators have to be downloaded from the CME routers and added to the Selected Phones tab.	Servers → Manage Cisco Routers → Download Router Info
Define dial plans	Dial plans must be configured to convert a number into a dialable number and to support directory lookup.	Servers → Manage Cisco Routers → Dial Plans
Setup Radius	Setup the Radius parameters to receive Radius accounting messages that contains call and presence information.	Servers → Setup Radius
Configure group information	Define the groups/departments in the organization and the access of other groups to the presence status and call ID information of the Operators in the group.	Directory → Group Management → Groups
Configure Operator information	Add or import CallConnector Operators. For each Operator: Assign a user account including username and password Add the user to a group and assign user type Add user's corporate information Select the IP phone to be controlled by the user Add the user's contact information Associate the user with the manager, assistant and backup	Directory → User Management → Users
Configure external contact information	Add or import external contacts to the CallConnector system.	Directory → User Management → Contacts
Setup company work schedule	Specify the following corporate information: Annual holidays Regular work hours Regular work days	Directory → Company → Settings
Configure the Operator call queues	Create incoming local and hunt group call queues for the Operators.	Operator → Call Queues
Configure monitored call queues	Select the park numbers to be used by the Operators and verify the priority level and timeout value of the park, transferred and held call queues.	Operator → Predefined Queues

Enter system speed dials	Create the system speed dials that allow quick access to directory numbers of other Operators. The system speed dial numbers can be grouped into category.	Operator → Speed Dials and Pages → Manage System Speed Dials
Define page numbers	To allow the Operator to make page announcement, configure the list of page numbers for the organization.	Operator → Speed Dials and Pages → Manage Pages

Table 8-5 Steps for setting up the CallConnector Operator

8.3.4To Open the Console Parameters Window

To configure a specific operator parameter:

Click on the menu item ‘Configure Operator Parameters’. This will display the Operator Parameters toolbar and the folders.
Click on the toolbar button or the desired folder to open the window for that parameter:
To configure the incoming call queues, click on the Call Queues folder
To setup the operator’s park numbers or to change the pre-defined queue parameters, click on the Held, Parked & Transferred Queue folder.
To setup the page numbers, click on the Speed Dials and Page folder and select the Page item from the list.
To setup the Speed numbers, click on the Speed Dial folder.

8.4 Configuring Incoming Call Queues

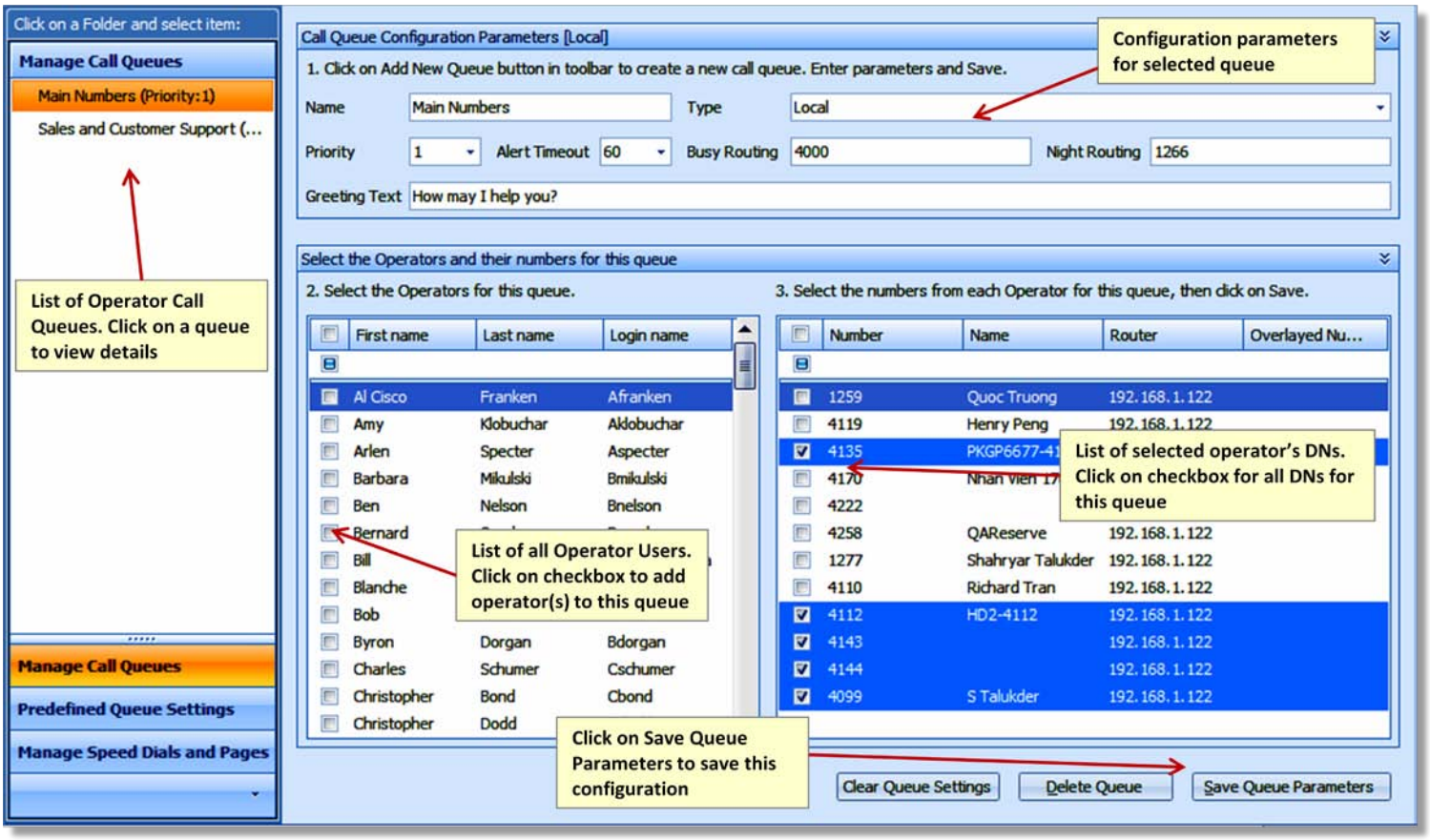


Figure 8-8 CallConnector Console Incoming Call Queues Page

The Manage Call Queues page allows the administrator to create and configure multiple incoming call queues for the CallConnector Operators. An incoming call queue can be configured for a single operator position or for multiple operators. In case of the CallConnector Standalone Operator, the administrator can setup the call queues for a maximum of two operators – the primary operator and the backup operator.

8.4.1What is an Incoming Call Queue

An Incoming Call Queue is a grouping of some of the directory numbers in the Operator's IP phone so that they can be given uniform call handling treatment.

The CallConnector Operator Console supports two types of call queues – Local Call Queue and Hunt-Group Call Queue. The administrator can view and redefine the priority level and timeout values of these queues.

8.4.1.1 Local Cal Queue

The Local Call Queue is comprised of directory numbers from the operator's phones. Local Call Queues are normally used with single operator positions. The CallConnector Operator Console software automatically sets up call forwards to the Busy/Night numbers when the operator is unavailable to take calls.

8.4.1.2 Hunt Group Call Queue

The Hunt Group Call Queue is also comprised of the directory numbers from the operator's phones. However these directory numbers also have to be in a router hunt group. The Hunt Group Call Queue would normally be used for multiple operator console deployments. The incoming calls are distributed by the router to the operators logged in to the hunt group. The CallConnector Operator Console software automatically logs in to the hunt group when the operators make themselves available to take calls. And conversely, they are logged out with they set their status as Busy or Unavailable. The Busy/Unavailable routing is implemented using the hunt group final number feature.

8.4.1.3 Comparison of Local and Hunt Call Queue Features

Queue Feature	Local Call Queue	Hunt Call queue
What is it?	List of directory numbers from the operator's phone	List of directory numbers from the operator's phone that belong to a hunt group
Operator Deployment Mode	Single Operator Console	Multiple Operator Positions
When Operator is available to take calls	Software automatically clears all call forwards on the DN in this queue	Software automatically logs in all the DN in the queue to their hunt group
When the operator status is Busy	Call forward is set to the configured Busy number for all the DNs in the queue	All the DNs in the queue are logged out of the hunt group
When the operator status is Unavailable	Call forward is set to the configured Night number for all the DNs in the queue	All the DNs in the queue are logged out of the hunt group
Common Queue Attributes	Queue Name, Priority, Timeout, List of DNs, List of operators, Greeting text	Queue Name, Priority, Timeout, List of DNs, List of operators, Greeting text
Different Queue Attributes	Busy Forward Number, Night Forward Number	Associated with a Hunt Group in the router

Table 8-6 Comparison of Local and Hunt Queues

If an Incoming call queue is configured for multiple operators, it contains some of the directory numbers from each operator's phone. The incoming calls to the organization can be routed through an auto-attendant or hunt groups to the corresponding call queues.

An incoming call queue can have the following attributes:

A Call Queue is comprised of a list of directory numbers from the Operator's phone. The directory number can be octal, dual or single channel numbers.

Each queue has the following properties:

Field	Description
Name	A descriptive label for the calls directed to that queue.
Type	The incoming call queue can be local or hunt group based call queues. The description of each type will be discussed in the following section.
Priority	The priority level (1-5 with one being the highest) determines the order in which the calls are answered.
Alert Timeout	This value provides visual feedback to the Operators for how long the calls have been waiting.
Busy and night routing numbers	When the operator is busy or unavailable, the operator directory numbers can be forwarded to these numbers.
Greeting text	Provides operators with the text for how the call should be answered.

Table 8-7 Call Queue Attributes

Calls requiring similar operator call treatment should be routed to one call queue. For example, the organization's main number calls should be routed to the directory numbers in the Main Number queue and the Customer Service calls to the Customer Service queue directory numbers.

The incoming call queue displays only the unanswered ringing calls. For each call, it can display the calling number, name (if available) and duration of the call.

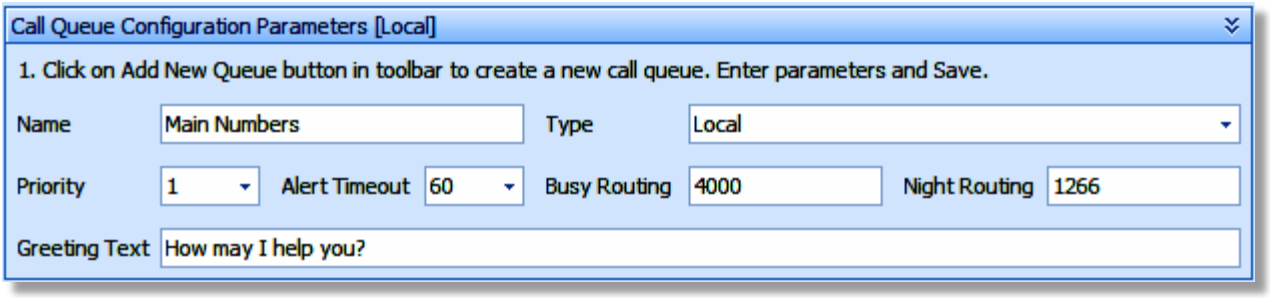


Figure 8-9 Parameters for Local Incoming Call Queue

8.4.2Local Call Queue Example

The local call queues allow the administrator to add some of the directory numbers from the Operator's phone to a specific call queue so that they can monitor the e incoming calls to these numbers and quickly answer these calls. The calls are listed in the order of arrival. There are three different configurations for the local call queues:

Local Call Queues for Single Operator

Button 1: 4300 (dual) ← Personal Number
Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)

Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ← Customer Service Calls
Button 8: 4308 (octal)

Figure 8-10 Example Queue Configuration for Single Operator

The example configuration shown above shows an operator IP phone directory numbers and the call queue configurations for a single operator position. One directory number is assigned as the operator personal number. Three octal channel directory numbers with a total capacity of twenty four calls are configured to receive the organization's main number calls. These three directory numbers are configured in the Main Number call queue. Button 6, 7 and 8 receive the customer service calls. As octal-channel directory numbers, each of them can receive up to eight calls.

Example of Parameters for Local Queue

Configuration Manager Queue Attribute	Queue Attribute Value Example
Queue Name	Main Number
Queue Type	Local
Answer Timeout	60 seconds
Busy Routing	4000 – voice mailbox
Night Routing	1266 – voice mailbox
Greeting Text	How may I help you?
Operators	Joan, Jenny
List of DNs	4433, 4302, 4301
Associated Hunt Group	None

Table 8-8 Local Call Queue Attributes

8.4.3Hunt Call Queue Example for Multiple Operators

In the example below, incoming calls to the organization are routed through an auto-attendant to the Main Number and Customer Service queues. Those queues are served by three operators. The Main Number hunt group has eight directory numbers from the three operator positions. The Customer Service hunt group has ten directory numbers from the operator IP Phones.

The queues for the Main Number and Customer Service have to be configured with the respective directory numbers as a part of the operator queue configuration. Calls are only delivered to the operators that are logged in.

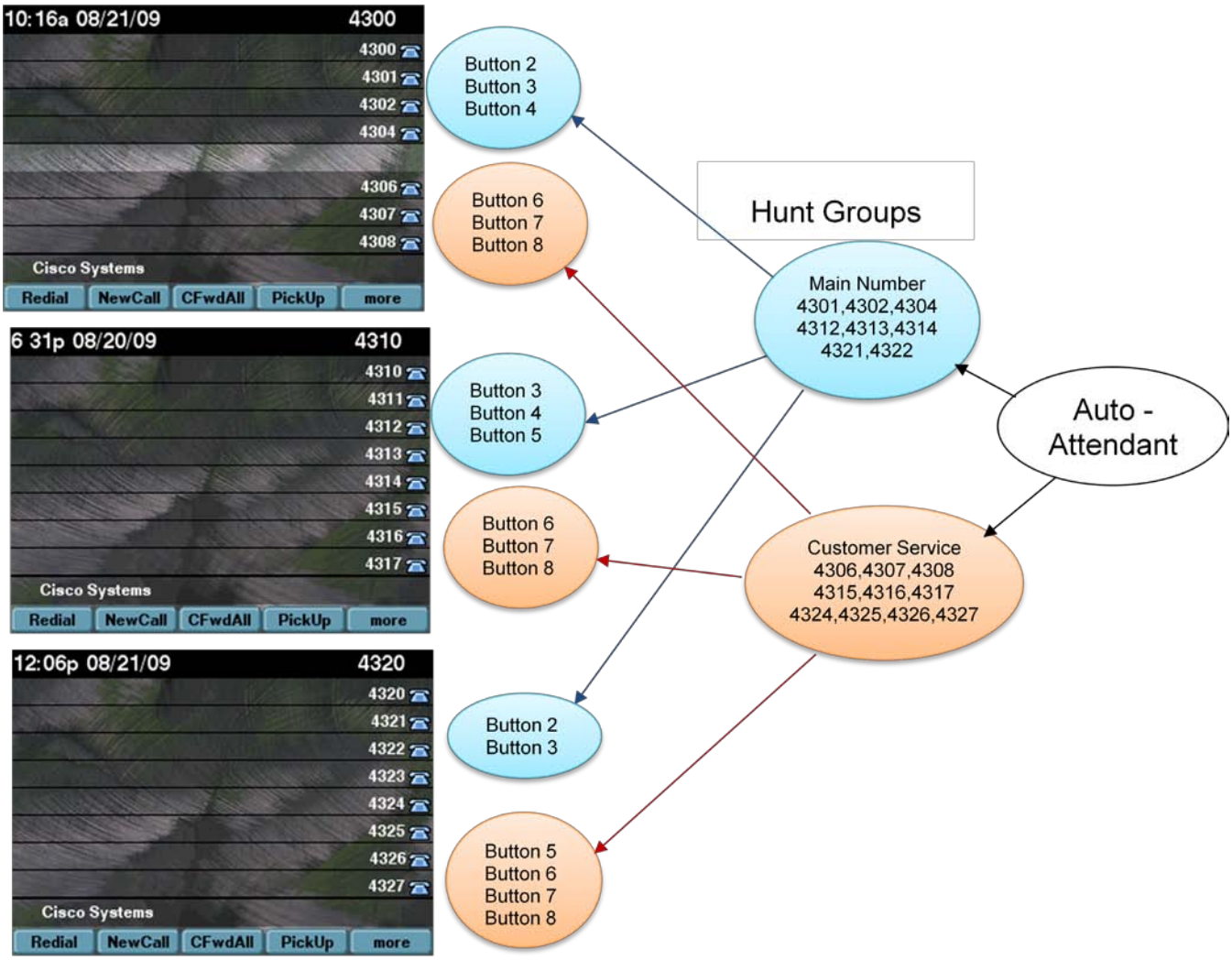


Figure 8-11 Example Queue Configuration for Multiple Operators

The directory numbers in an operator call queue have be provisioned in a hunt group configured on the router. The hunt group distributes the calls to the different operators. When the operator is in the 'Available' state, the console software automatically logs in the operator's directory numbers into the hunt groups. When they are busy or unavailable, those directory numbers are logged out of the hunt groups.

8.4.3.1 CME Hunt Group Parameters

The Cisco CME hunt group should be configured with the following options to support the routing of the calls to the Operators.

Cisco CME hunt-group properties for Operator call routing:

One or more directory numbers from each Operator's phone should be added to the hunt group list.

The hunt group should be setup to route the calls to support the following requirements:

a) Allow all logged-in Operators to uniformly share the calls. The hunt group should be setup for 'Peer' or round-ribbon call routing.
b) Support a primary and backup Operator position. For this, the hunt group should be configured with 'sequential' routing with the primary Operator's directory numbers first in the list followed by the backup Operators' directory number.
c) Multiple hunt groups can be configured one for each Operator call queue.

The hunt groups can be preceded by an auto-attendant to route the calls to the selected call queue.

Example of Parameters for Main Number Hunt Queue

Configuration Manager Queue Attribute	Queue Attribute Value Example
Queue Name	Main Number
Queue Type	Hunt
Answer Timeout	20 seconds
Busy Routing	Not Applicable
Night Routing	Not Applicable
Greeting Text	ABC Company, How may I direct your call
Operators	Joan, Jenny, Mary
List of DNs	4301, 4302, 4304, 4312, 4313, 4313, 4321, 4322
Associated Hunt Group	Main Number Hunt Group

Table 8-9 Hunt Call Queue Attributes

8.4.4 Example of Call Queues for a Primary Operator and a Backup Operator

Primary Operator

Button 1: 4300 (dual) ← Personal Number

Button 2: 4301 (octal)
Button 3: 4302 (octal) ← Main Number Calls
Button 4: 4303 (octal)

Button 5: not configured

Button 6: 4306 (octal)
Button 7: 4307 (octal) ← Customer Service Calls
Button 8: 4308 (octal)

Backup Operator

Button 1: 4310 (dual) ← Personal Number
Button 2: 4311 (dual)

Button 3: 4312 (octal)
Button 4: 4313 (octal) ← Main Number Calls
Button 5: 4314 (octal)

Button 6: 4315 (octal)
Button 7: 4316 (octal) ← Customer Service Calls
Button 8: 4317 (octal)

Figure 8-12 Example Queue Configuration for Operator and Backup

The example queue configuration above shows the IP phone directory numbers for two operators: the primary operator and the backup operator. The first directory number from the primary operator phone and the first two directory numbers from the backup operator phone serve as the operators' personal numbers. Each operator assigns three octal directory numbers to receive main number calls. These six directory numbers should be added to the Main Number call queue and have the capacity of receiving forty eight calls in total. The example configuration routes the Customer Service calls to the last three directory numbers of each Operator IP phone. Therefore, six lines with the total of forty eight calls are configured to receive Customer Service calls.

Each queue is of type Hunt Group to allow incoming calls to be distributed by the router to the available operators.

8.4.5Fields in the Call Queues Window

The Call Queues page displays the list of configured call queues and allows the administrator to view the details of each queue. For each queue in the list, the administrator can:

1. View and make changes to the call queue properties
2. If the selected call queue is of type hunt group, the Call Queue page allows the administrator to choose which hunt group will be used in the call queue.
3. View the list of available operators and select the operator to calls from this queue.
4. Select the directory numbers to be added to the call queue from each operator.

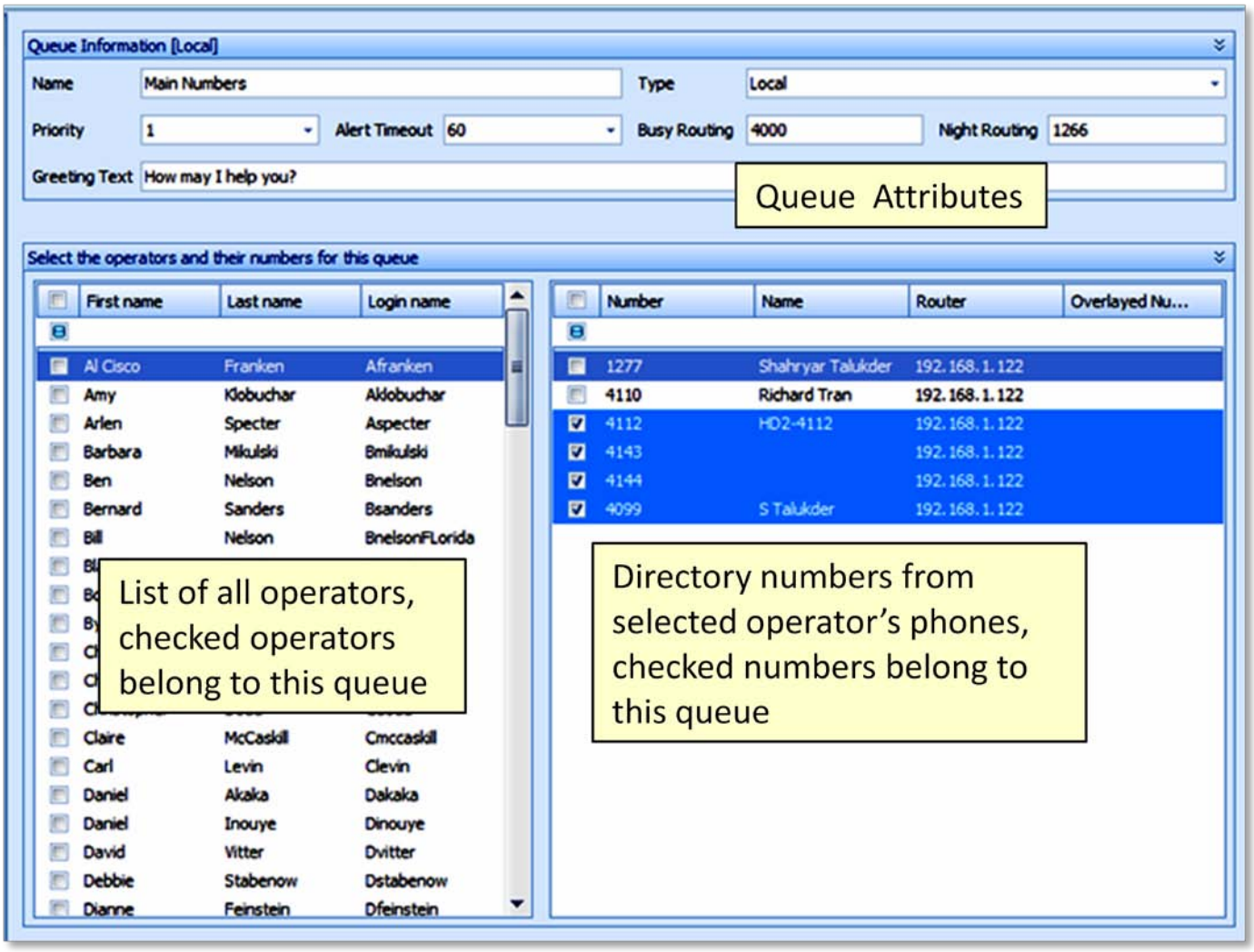


Figure 8-13 Display of the Incoming Call Queue Configuration Window

8.4.5.1 Description of the Queue Attributes

Field	Description
Name	A descriptive label for the calls directed to that queue.
Type	The incoming call queue can be local or hunt group based call queues.
Priority	The priority level (1-5 with one being the highest) determines the order in which the calls are answered.
Alert Timeout	This value provides visual feedback to the Operators by turning red for calls that are waiting longer than this interval.
Busy and night routing numbers	When the operator is busy or unavailable, the operator directory numbers can be forwarded to these numbers.
Greeting text	Provides operators with the text prompt for greeting the callers when the call is answered.

Table 8-10 Call Queue Attributes

The table below describes the fields in the table listing the operators. The information displayed for each operator can be modified from the Users page of the Manager Users and Contacts section.

Field	Description
First Name	The first name of the CallConnector Operator.
Last Name	The last name of the CallConnector Operator.
Login Name	The login name of the CallConnector Operator.
Department	The CallConnector Operator belongs to this group/department.

Table 8-11 CallConnector Operators

When the administrator selects an Operator, the directory numbers of the IP phone, which the Operator controls, displays and includes the following fields:

Field	Description
DNID	The ID of the directory number in the Cisco CME system.
Number	The primary extension number of this directory number.
Name	The name of the directory number. The name is used for caller-ID displays and in the directory listings.
Router	The IP address of the router where the directory number resides.

Table 8-12 Directory Number Information

If the administrator selects Hunt Group as the type for the call queue, the Call Queues page will show the list of hunt groups configured in the Cisco CME routers including the information in the table below:

Field	Description
Router IP	The IP address of the router where the hunt group resides.
Group ID	Each hunt group has a unique ID in the CME router.
Type	The type of the hunt groups. The CallConnector Server supports 3 hunt group types: sequential, peer and longest-idle.

Table 8-13 Hunt Group List Details

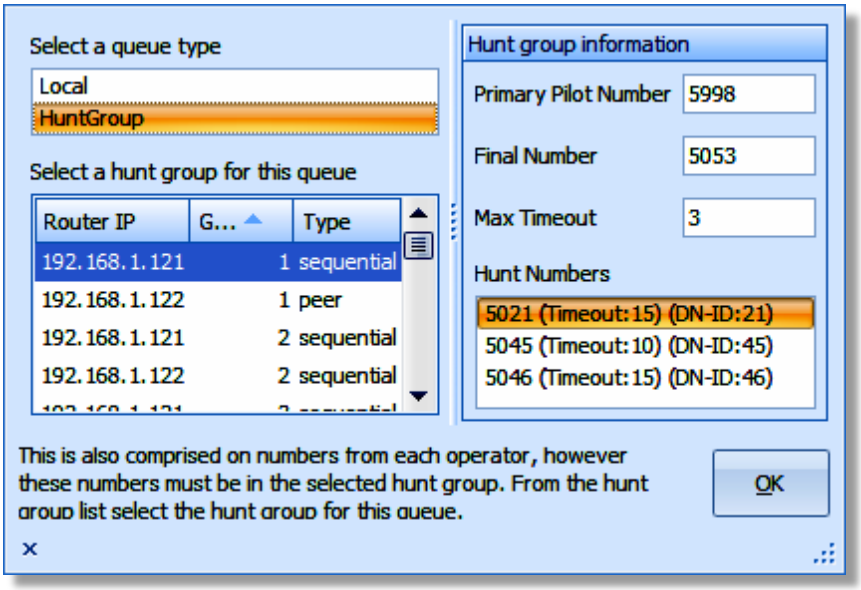


Figure 8-14 List of Router Hunt Groups for association with a, operator call queue

The administrator can select only one hunt group for a particular call queue. The attributes of the selected hunt groups is displayed to the right.

Field	Description
Primary Pilot Number	The primary pilot number which the callers dial to reach the hunt group.
Final Number	The last number in the hunt group, after which the call is no longer redirected.
Max Timeout	The maximum combined timeout in seconds for the no-answer periods for all directory numbers in the hunt list. The call proceeds to the final destination when this timeout expires, regardless of whether it has completed the hunt cycle.
Hunt Numbers	The list of directory numbers participating in the hunt group. The hunt numbers are displayed in the format: <<directory_number>>(Timeout:<<timeout_value_in_seconds>>)(DN-ID:<<directory_number_identifier>>)

Table 8-14 Hunt Group Information

8.4.6 Configuring Call Queues

From the Manage Call Queues page, the administrator can create a new incoming call queue, modify the configuration of the existing call queue or delete a particular call queue.

8.4.7 To Create New Call Queues

Step 1 Click on the Add New Queue button in the toolbar. A new entry will be created in the Call Queues list.

Step 2 Enter the attributes for the new call queue. You can delete the default values by clicking on Reset or pressing Alt + R. Then enter the correct values.

Step 3 If the type of the call queue is Hunt Group, select the hunt group you want to use in the list of available hunt groups.

Step 4 Click on the checkbox beside the operator that you want to add to this queue. The list of directory numbers for each of the selected operators will be displayed.

Step 5 Click on the checkbox beside the directory numbers that you want to add to this call queue.

Step 6 Click on Save or press Alt + S.

8.4.8 To Edit Existing Call Queues

Step 1 On the list of available call queues, highlight an entry.

Step 2 Edit the information of the call queue. You can delete the current values by clicking on Reset or pressing Alt + R. Then enter the new values.

Step 3 If you change the type of the call queue to Hunt Group, select the hunt group you want to use in the list of available hunt groups.

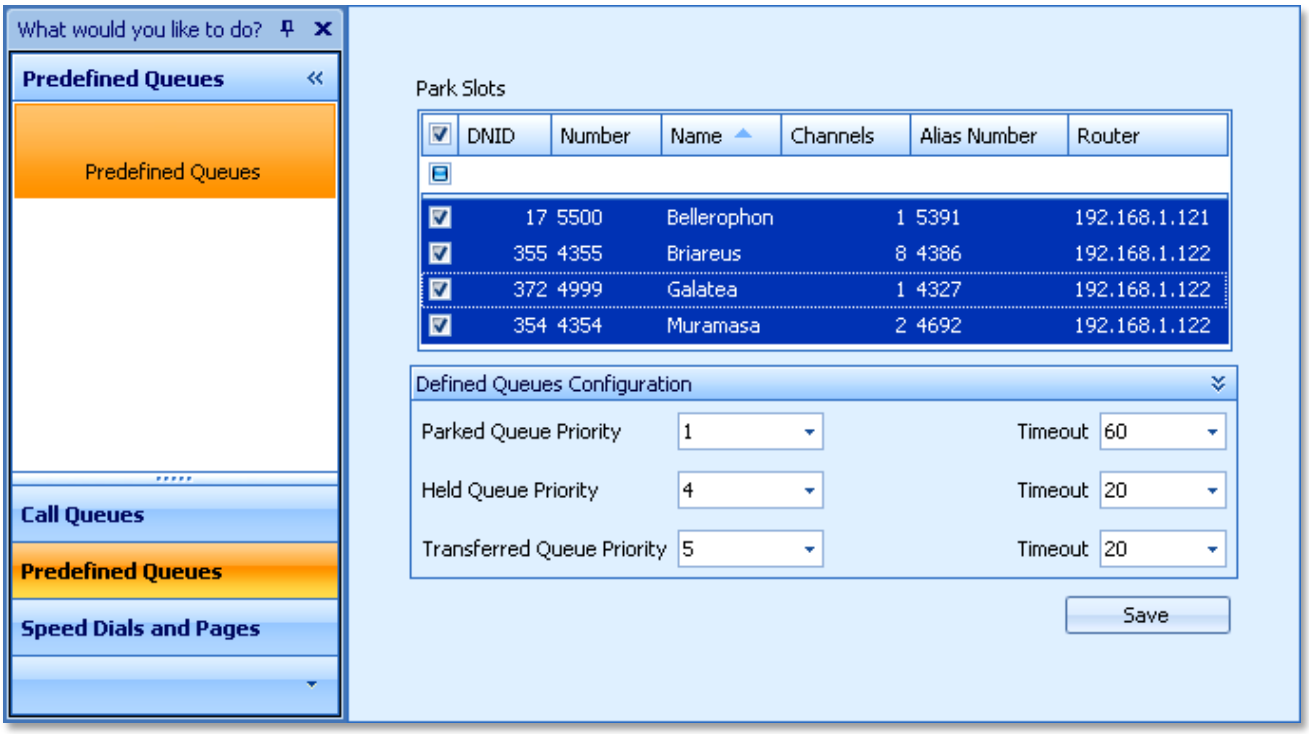
Step 4 Click on Save or press Alt + S.

8.4.9 To Delete Call Queues

Step 1 On the list of available call queues, highlight an entry.

Step 2 Click on Delete or press Alt + D. The Configuration Manager will ask for your confirmation to delete the call queue. Click on Yes to remove the call queue.

8.5 Configuring Held, Parked and Transferred



Queues

Figure 8-15 Monitored Queues

The CallConnector Operator provides three types of predefined call queues that help the operator to monitor the status of the calls that have been processed and in the waiting state.

Parked Call Queue: Shows the calls that have been parked by the operator. The administrator has to define the park slots in the Cisco CME router and select the park numbers that are going to be monitored and displayed by the operator console.

Held Queue: Displays the calls placed on hold at the operator position.

Transferred Call Queue: This queue displays the calls that were transferred by the operator. Only the calls in the ringing state are displayed in the Transferred Call Queues. Once the call connects, it is removed from the queue.

The Held, Parked and Transferred Queues Window allows the administrator to configure the priority level and timeout value of these predefined call queues and determine which park slots can be used by the Operator.

8.5.1 Selecting Park Slots

The CallConnector Operator console monitors the status of the park number that have been selected for use by the operators. Calls that are parked at these numbers by the operators are displayed in the CallConnector Operator Park Queue and are listed in the Park menu. The administrator needs to select the operator park numbers from the list of all the park numbers configured on the routers.

The Held, Parked and Transferred Queues Window displays a list of the park numbers configured on the routers and allows the administrator to select the park numbers to be used by the operator.

Each park slot contains the following information:

Field	Description
Checkbox	Allows the park number to be selected for the operators
Number	The directory number of the park slot
Name	The name of the directory number. The name is used as the caller-ID.
Channels	The number of channels (lines) this directory number supports: A single-line directory number has 1 channel. A dual-line directory number has 2 channels. An octal-line directory number has 8 channels.
Alias Number	The secondary extension number for this directory number. Configuring an alias secondary number supports features such as call waiting, call transfer, and conferencing with a single line.
Router	The IP Address of the router where the directory number resides.

Table 8-15 Park Slot Table Attributes

8.5.2To Select Park Numbers for the Operators

Step 1 Click on the checkbox at the park slot entry to select that entry.

Step 2 Repeat step 1 to select additional entries. You can click on the checkbox in the column header to select all park slot entries.

Step 3 Click on Save or press Alt + S.

8.5.3To Deselect Park Numbers for the Operators

Step 1 Click on the selected checkbox of the park number you want to remove from the operators.

Step 2 Repeat step 1 to uncheck additional entries. You can click on the checkbox in the column header to de-select all park slot entries.

Step 3 Click on Save or press Alt + S.

8.5.4Configuring Predefined Queues Parameters

The priority level and the timeout value together determine two features of the Operator console:

Providing feedback to the operator that calls in the Held, Parked or Transferred queues have been there longer than the administrator specified quality of service value. The console changes the queue progress bar to red to indicate timeout.

The order in which the calls are reconnected to the operator when the Recall button is pressed. The highest priority longest waiting parked or transferred call is reconnected when the Recall button is pressed.

The administrator can configure only the following parameters of the predefined call queues:

Priority: The priority level (1-5 with one being the highest) determines the order in which the calls are recalled.

Timeout: This value determines how long the CallConnector Operator should wait before turning the call status to red to alert the operator the timeout condition. The available range is from 10 seconds to 60 seconds.

Note the Recall button in the toolbar connects to the highest priority, timed-out call from the Parked or Transferred queues.

8.5.5 To Configure Predefined Queue Parameters

Step 1 Select the priority level from the Held, Parked or Transferred call queues. One being highest priority and five is the lowest priority.

Step 2 From the pulldown list select the timeout duration for each queue. The value ranges from 10-60 seconds.

Step 3 Click on Save or press Alt + S.

8.6 Speed Dials and Pages

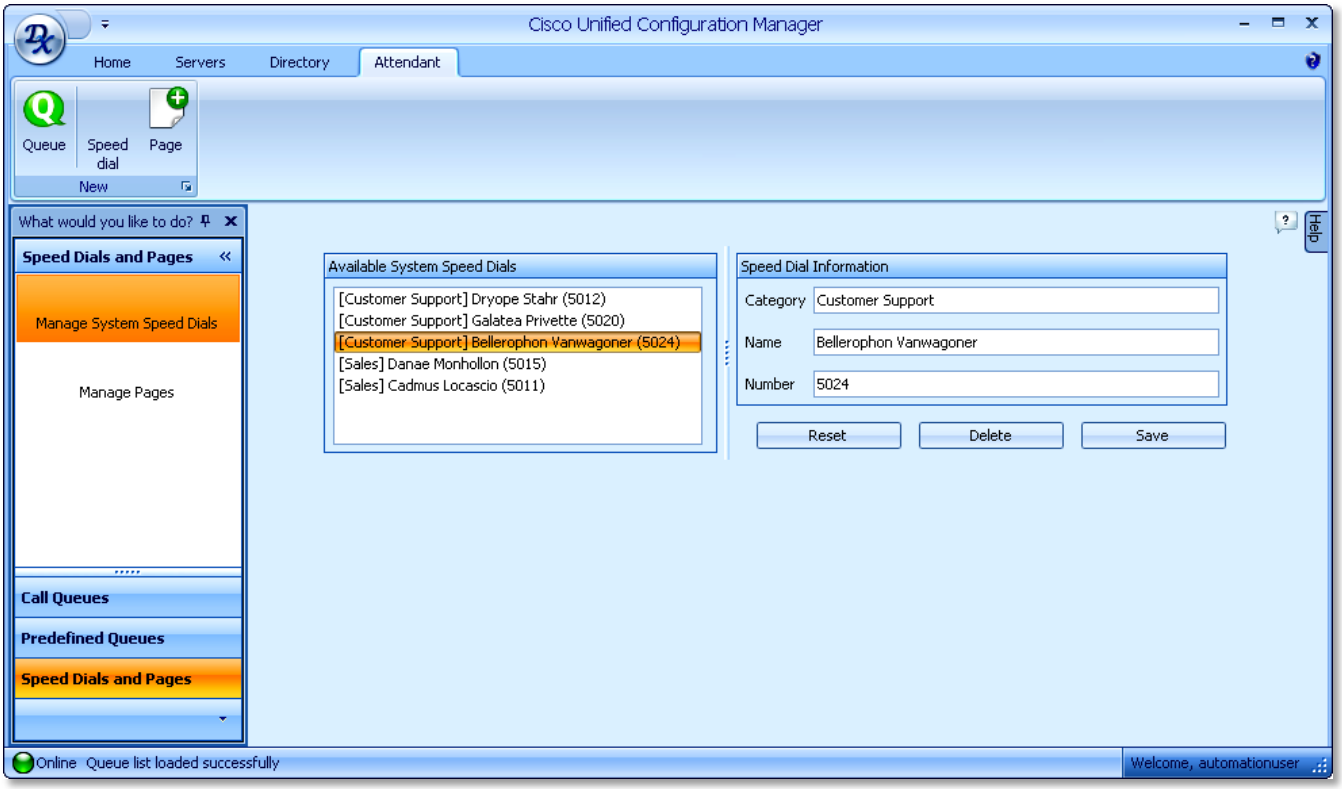


Figure 8-16 Managing Speed Dials and Pages

The administrator can setup speed dial and page numbers to be shared by all CallConnector Operators. The speed dial numbers provide the operator the shortcut to access a directory number quickly and can be grouped into different categories.

The page number is used to make announcement.

8.6.1Maintaining Speed Dials

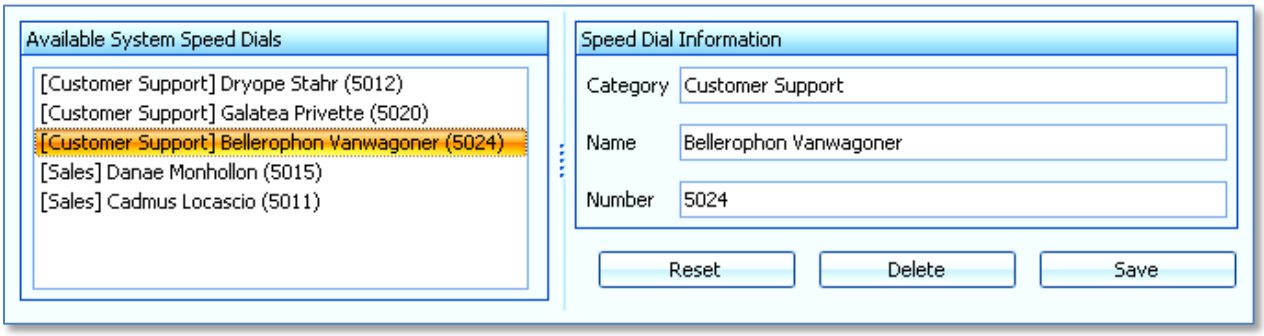


Figure 8-17 Speed Dials Page

The Speed Dials page displays the list of configured system speed dials. Each speed dial contains the following information:

Field	Description
Category	Organizing the speed dial numbers into categories will make it easier for the Operator to access to the number because the speed dial numbers in the Call Control window will be grouped by category name.
Name	The name of the person associated with the speed dial number.
Number	The telephone number

Table 8-16 System Speed Dial Attributes

The following button functions are provided for maintaining system speed dial numbers are available:

Button	Description
New	Allows the system administrator to create the new system speed dial entry. This button can be accessible from the Toolbar.
Reset	Clears all the values of the selected system speed dial entry and allows the administrator to enter new values.
Delete	Remove the selected system speed dial entry from of the CallConnector database.
Save	Save the information of the selected speed dial entry to the CallConnector database.

Table 8-17 Speed Dial Functions

8.6.2To Open System Speed Dial Page

Step 1 On the Configure Operator Parameters page, click on Speed Dials and Pages. Then click on Manage Speed Dials.

Step 2 On the Home page, click on Navigation Guides/Configure Standalone Operator. Then click on Add the Speed Numbers.

8.6.3To Create New Speed Dials

Step 1 Click on the New Speed Dial button of the Operator toolbar. A new entry will be created in the Speed Dials list.

Step 2 Enter category, name and number of the speed dial number. You can delete the default values by clicking on Reset or pressing Alt + R. Then enter the correct values.

Step 3 Click on Save or press Alt + S.

8.6.4To Modify System Speed Dials

Step 1 On the list of available speed dial number, highlight an entry.

Step 2 Edit the category, name and number of the speed dial number. You can delete the current values by clicking on Reset or pressing Alt + R. Then enter the new values.

Step 3 Click on Save or press Alt + S.

8.6.5To Delete System Speed Dials

Step 1 On the list of available speed dial number, highlight an entry.

Step 2 Click on Delete or press Alt + D.

8.6.6 Maintaining Page Numbers

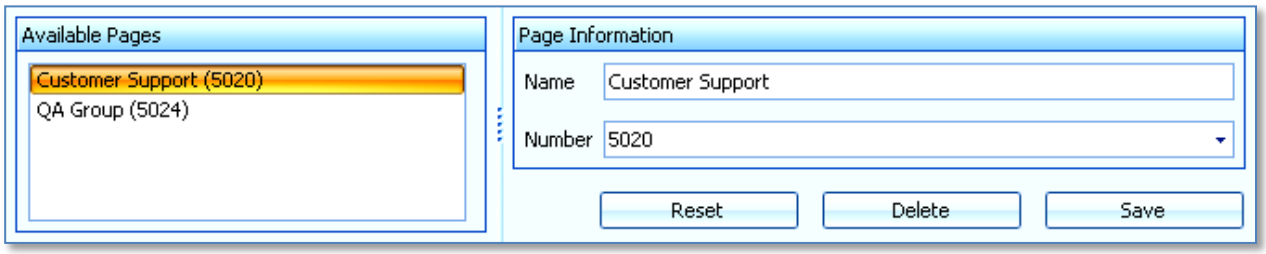


Figure 8-18 Page Numbers Page

The CallConnector Operator Console allows the operators to make overhead announcement by dialing the page number in the Call Control window. In order to enable this feature, the administrator has to define the list of organizational page numbers. Each page number has the name and the directory number. The configured page numbers will be displayed in the Call Control window of all CallConnector Operator connecting to the CallConnector Server.

The following functions for maintaining page numbers are available:

Button	Description
New	Allows the system administrator to create the new page number entry. This button can be accessible from the Operator Navigation Bar.
Reset	Deletes all the values of the selected page number entry and allows the administrator to enter new values.
Delete	Remove the selected page number entry out of the CallConnector database.
Save	Save the information of the selected page number entry to the CallConnector database.

Table 8-18 Maintaining Page Numbers

8.6.7 To Open Manage Page Numbers Window

Step 1 In the Configure Operator Parameters section, click on Speed Dials and Pages folder. Then click on Manage Pages.

Step 2 From the toolbar, click on the Speed Dial button and then select the Manage Page item from the folder list.

8.6.8 To Create New Page Numbers

Step 1 Click on the New Page button of the toolbar. A new entry will be created in the Available Pages list.

Step 2 Enter the name and directory number of the page number. You can delete the default values by clicking on Reset or pressing Alt + R. Then enter the correct values.

Step 3 Click on Save or press Alt + S.

8.6.9 To Modify Page Numbers

Step 1 On the list of available page numbers, highlight an entry.

Step 2 Edit the name and directory number of the page number. You can delete the current values by clicking on Reset or pressing Alt + R. Then enter the new values.

Step 3 Click on Save or press Alt + S.

8.6.10 To Delete Page Numbers

Step 1 On the list of available page numbers, highlight an entry.

Step 2 Click on Delete or press Alt + D.