

Cisco Unified CallConnector for Microsoft Windows (Server and Mobility Editions)

Administrator's Guide

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Cisco Unified CallConnector Administrator's Guide

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Preface

This chapter introduces Cisco Unified CallConnector Server for Microsoft Windows® (referred to as the Unified CallConnector Server or as the UCC Server), describes the purpose of this document, and outlines the required software. 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

Purpose

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

Unified CallConnector Server consists of a set of server applications that provide shared access to control of telephones, database and services to the Unified 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. The last chapter provides some troubleshooting information to allow you to isolate problems that you might be experiencing.

Audience

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

The user 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.

Organization

This guide contains nine 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 Unified CallConnector Solution and describes the configurations for the Unified CallConnector server.
Installation-	This chapter describes how to install and register the Unified CallConnector Server.
Configuring Server Apps -	This chapter describes how to setup and configure the Unified CallConnector server application and the users.
Configuring Cisco Unified CME-	This chapter provides instructions for setting up the required parameters on the Cisco Unified CME router.
Starting and Stopping -	This chapter describes how to start and stop the Unified CallConnector server applications which run as Windows services.
Managing Data -	This chapter describes how to manage the configuration and transaction data associated with the Unified CallConnector server.
Using Diagnostic Tool -	This chapter provides step-by-step instruction for running the diagnostic application and the problem isolation tests.
Troubleshooting -	This chapter describes the tools and procedures for troubleshooting problems with your the Unified CallConnector solution.

Related Documents

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

<http://www.cisco.com/go/unifiedcallconnector>

Required Telephone Systems

The Unified CallConnector supports the following Cisco Systems Unified Communications managers and telephones. Please visit the Cisco Systems site for the Unified CallConnector for the latest product compatibility list.

Cisco Unified Communications Manager Express version 4.1.

Supported Windows Platforms

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

Windows 2000 Server, Windows 2003 Server
Microsoft Internet Explorer version 6.0 and 7.0

Conventions

The following conventions are used in this guide:

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

Conventions Used

The following conventions are used in this guide:

Most of the operations of the Unified 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: Unified 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.

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 administration of the Unified CallController system.
UCC	Unified CallConnector.
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 agents.
Database	A database is a file that contains information in a tabular format.
Record or Entry	Each row of the database table is called an entry or a record.
Field	Each column of the database table is called a field.
Directory	A directory is a database that usually contains names and related information.
Presence	Real-time availability status of a user. Presence status can include availability, location , telephone status and away messages.
Server	Named directory containing control and data files.
Users	Individuals who are authorized to use the system.
Dialog	Popup window from which options are selected.
Window	An area of the screen where the application displays information.
SIP	Session Initiation Protocol – a standardized set of messages and methods for setting up communication sessions.
Service	An application running as a Windows Service. These applications do not present a user interface.
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.
Port	Sub-address used in setting up TCP connections.

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.

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.

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

Documentation DVD

Cisco documentation and additional literature are available in a Documentation DVD package, which may have shipped with your product. The Documentation DVD is updated regularly and may be more current than printed documentation. The Documentation DVD package is available as a single unit.

Registered Cisco.com users (Cisco direct customers) can order a Cisco Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

Cisco Marketplace:

<http://www.cisco.com/go/marketplace/>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

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.

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

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&export=on>

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly. To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definition of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

Cisco Press publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

Packet magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

iQ Magazine is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

<http://www.cisco.com/ipj>

World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.html>

Unified CallConnector Server Overview

This chapter provides an overview of the Cisco Unified CallConnector Server and the CallConnector solution. It describes the key features, the different modes of operations. It also describes each of the graphical user interface components of the Unified CallConnector.

This chapter describes the following in more detail:

Key Features -	Describes the key features of the Unified CallConnector.
CallConnector Models -	The CallConnector supports a standalone, server and mobility components. This section describes these UCC models.
CallConnector Personal -	Provides an overview of the features of the Unified CallConnector Personal model.
CallConnector Server -	Provides an overview of the additional features available from the Unified CallConnector Server model.
CallConnector Mobility -	Provides an overview of the features available from the Unified CallConnector Mobility.
CallConnector Toolbars -	Describes the components of the Unified CallConnector Toolbars in Microsoft Explorer and Outlook.
CallConnector Sidebar/View -	Describes the components of the Unified CallConnector Sidebars in Microsoft Explorer and View windows in Outlook.
Popup -	Describes the Popup applications and its menu.
QuickSearch -	Describes the QuickSearch user interface.
Monitoring Presence Status-	Briefly describes the Presence capabilities of the Unified CallConnector.
Getting Help -	Describes how to get Unified CallConnector help information.

Unified CallConnector Overview

Cisco Unified CallConnector 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 (your current availability), you will find greater productivity and business efficiency leveraging your PC-based data to initiate voice, messaging or collaboration sessions. Cisco Unified CallConnector is not just another application for the Windows, but is embedded within your line of business application such as Microsoft Outlook and Internet Explorer.

The Cisco Unified CallConnector offers these 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.
- Optional MobilityConnector add-on providing Single Number Reach call routing services to allow your business calls to reach you at any number based on the rules you have set.

Unified CallConnector Models

Cisco Unified CallConnector is available in three configurations:

Personal	Delivering call control features for the individual user using Cisco's Unified Communications Manager Express (Cisco Unified CME) TAPI TSP.
Server	Server based application installed at each site giving users call control plus Presence/Instant Messaging and Rules-based Automation Services based on a SIP Client Server architecture.
Mobility	Add-on to the server application, the Unified CallConnector Mobility provides single number reach to a number.

Unified CallConnector Personal

Cisco Unified CallConnector Personal is a separate install on each Windows workstation with a Cisco Unified IP Phone connected to Cisco Unified CME router. Each user of Cisco Unified CallConnector Personal delivers the call control features listed in the table below and is supported with any PC running Microsoft Windows..

Features with Cisco Unified CallConnector Personal

Unified CallConnector Personal Feature	Description	Benefit
Call Control toolbars within Microsoft Outlook and Internet Explorer	Toolbars for easy access to features without the need for any additional desktop applications. Can be used within Outlook or Internet Explorer	Provides easy to use features such as finding contacts, executing phone features, and streamlining communications for the user
CallConnector Contacts	Within Outlook & Internet Explorer brings together all personal, corporate and Outlook contacts, history of calls and speed dial lists.	Makes it easy to find contacts, view missed calls from your everyday applications
QuickConnect from any Contact	Easy click-to-dial or click-to-send on any contact with option to show all numbers (Work, Cell, Home) and send addresses (email, IM, SMS) associated with the Contact	Saves time where call is placed in a few seconds without manual dialing a number or starting other communication sessions.
Quick Transfer /Hold /Conference	Easily transfer, hold or setup conferences using context menus within Outlook or Explorer.	Ease of transferring or setting up conference calls using PC Mouse. Callback from email or conference to a number in the web page.
QuickSearch though Contacts	Use pause/break key on PC to quickly find contact and then quick dial number, or send email.	Easy way to search though all contacts without opening new applications or switching pages.
Speed dial	Option to create Icon based speed dials for frequently called numbers.	Common numbers are easy to find and dial quickly.
Call Popup with Outlook Caller ID Lookup	Incoming calls will show a screen pop with callers name lookup from Outlook contacts. Clickable Option to answer or send call to voice mail.	Always know who is calling with option to answer call or ignore and send to voice mail.
QuickDial from any application	Highlight a phone number in any application like Microsoft Word, PowerPoint, Email or web page, then double-click phone icon to place call.	Quick and easy way to place a call without reading number and manually dialing. Saves time, and improves productivity
CallConnector Call Logs	Missed, Received, and Dialed calls stored on PC in addition to the IP Phone. Use Quick Dial to return calls missed while out of the office	Save time returning calls missed while away from the office. History log of calls received and placed can be used for billing.

Cisco Unified CallConnector Server

The Cisco Unified CallConnector Server application delivers the features as described above with the added benefit of Presence and Instant Messaging. The Cisco Unified CallConnector Server gives your employee's information about colleagues location, availability, and phone status using the same CallConnector toolbars from within Outlook and Internet Explorer. Using simple icons and colors to show location and availability, users are able to reach colleagues quickly the first time and reduce phone tag – helping them to be more productive.

The table below lists the additional features available with Cisco Unified CallConnector Server.

Cisco Unified CallConnector brings together easy to use call control, presence, instant messaging, directories and call routing rules to simplify the communication experience, helping work teams and colleagues share information faster and communicate in real time.

Cisco Unified CallConnector provides status of co-workers if available or busy before trying to contact them. Similar to popular instant messaging status, the user can set his or her status from the Cisco Unified CallConnector toolbar. This status information is updated automatically to all users from the Cisco Unified CallConnector Server and can be accessed from the toolbars in Internet Explorer, Outlook or Quick search results window. By seeing who is online, offline, available, or busy or with custom message like "on vacation" or "in a meeting" can also be shared to let users know why someone is unavailable or busy. Knowing whether contacts are available helps to reduce communication delays between workers, thereby enabling faster decision making and enhanced productivity.

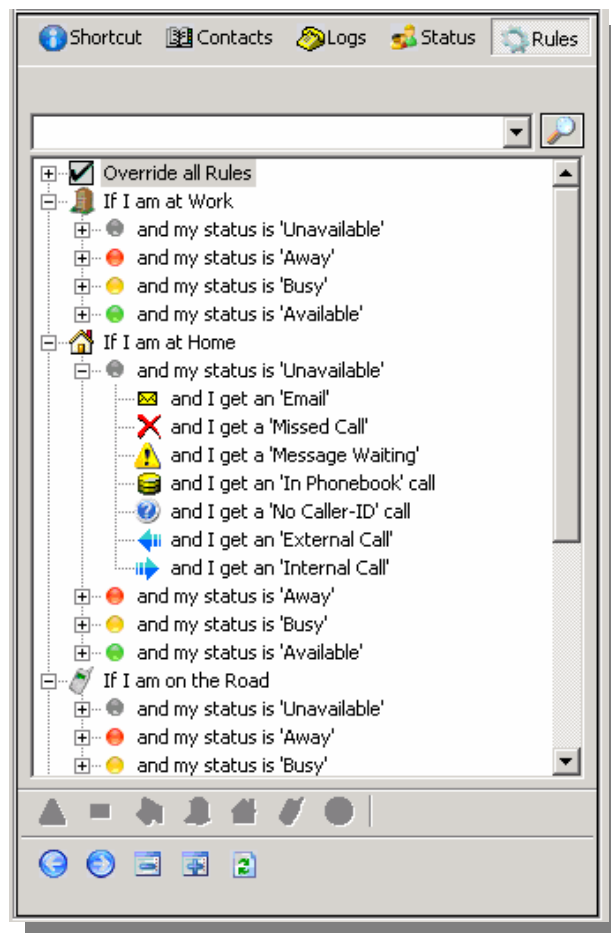
Features with Cisco Unified CallConnector Server

Unified CallConnector Server Feature	Description	Benefit
Dynamic Presence Information	Real Time display of users Location, Availability, IP Phone Status, plus optional custom message.	Reduces phone tag, and gives employee's information of who is in the office or on the road.
User Selectable Location	User can set their location shown by Icon (Work, Home, Travel, Vacation) or custom message displayed to other users.	Allows others (including operator) to see who is in office, out to lunch or away on travel.
User Selectable Availability	User can set their status shown by color, Available, Busy, Away, other.	Lets fellow employee's know who is available to receive calls or Instant Messages
Dynamic IP Phone Status	All phones Connected to the Cisco Unified CME router have status auto updated for others to see.	Reduces phone tag providing more efficient communications
QuickMessaging	Simple Instant Messaging for the Small Office launched though CallConnector Contacts Quick Dial. Option to launch other IM clients installed on PC though Contacts Quick Dial.	Easy to use Instant Messaging Client for productivity gains between employees. Alternative to use of external public IM Clients due to security concerns
Synchronization with Calendar	Updates your availability status automatically based on your Outlook calendar.	Automatically tracks your schedule and reduces the need to manually update availability.
QuickSearch with Presence information	Quick Search results bar shows Location, Availability and Phone Status for colleagues in addition to contact numbers.	Quickly find phone numbers for colleagues plus presence info to know if available before calling.
User Customizable Automation Rules	Set rules for basic call handling and notification though email or SMS when calls are received	Gives users option to send notification to pager, cellular or smartphones about important calls missed while away from the office.
Operator or Admin can change Location or Availability of others	Gives key personal option to change presence information shown to others	Provides up to date information to users to improve communications.
Easy Install without configuring TAPI TSP at each Workstation	Users receive email invite with clickable link for easy install from Server	Users are able to self-install for reduced installation costs

Cisco Unified CallConnector Mobility

Cisco Unified CallConnector Mobility brings the business calls to the workers at their current location and to a phone of their choice. An optional part of the Cisco® Unified CallConnector family of products, the CallConnector Mobility is an add-on server application that integrates with Cisco Unified CME router to monitor incoming business calls and then route or bridge them based on user-specified call handling rules. Whether at home or from remote locations, the workers can place or receive calls through the Cisco Unified CME router and leverage the business's Unified Communications infrastructure.

Cisco Unified CallConnector Rules Interface allows the workers to setup automation rules to bring the business calls to them based on their availability and location.



The Cisco Unified CallConnector Mobility is an add-on application to the Cisco Unified CallConnector for Microsoft Office Server. The solution monitors user's presence status (availability and location) and calls placed to their Cisco Unified IP phone. Users can associate rules with their presence status and location to route selected callers to a specified number, like a cell phone. As an option, calls can be bridged to both the IP Phone and the remote phone. When a call is bridged, it appears both at the user's IP Phone and the other phone allowing the call to be taken at either device. Calls routed to a remote phone are announced to the user who is given a choice to accept the call or send the caller to voice mail.

The Cisco Unified CallConnector Mobility offers the following features:

Single Number Reach

Cisco Unified CME router users can now provide a single phone number to their business contacts and be immediately connected to their business calls at the most convenient and available telephone. Callers can be routed to a home phone if tele-working or the mobile phone when in transit or any other accessible phone. With the Cisco Unified CallConnector Mobility, workers can provide more responsive service to customers without having to distribute multiple and private mobile phone numbers. .

Single Voicemail/ Box

If the user is unreachable at their specified single business number, the Cisco Unified CallConnector Mobility will forward the call to voice mail, using Cisco Unity Express or Cisco Unity. When calls are routed, an SMS (text message) or email can automatically send notification of the missed call to the user. The single voice mailbox allows the user to easily manage all business voice messages saving time and money.

User Customizable Rules for Routing

The Cisco Unified CallConnector Mobility is fully integrated with the Cisco Unified CallConnector toolbars to allow users to setup rules based on availability and location to specify the reach numbers and routing for business calls. Rules can be easily changed from everyday used business applications like Internet Explorer and Microsoft Outlook. The Cisco Unified CallConnector Mobility combines the power of Single Number Reach with user settable routing rules to provide a flexible and user controlled solution for the mobile workers.

Integration with Presence

Call handling automation rules can be based on the presence status of the user, where as the status changes, call routing rules are triggered automatically. The Cisco Unified CallConnector for Microsoft Office allows users to change both availability (available, busy, away, unavailable) and location (work, home, on-the-road, etc), which can also set call routing rules. Using location information, the Cisco Unified CallConnector Mobility will know if the user is at home and available, can route business calls to their home number, but when busy the call is sent to voice mail with notification to the user.

Reach At Any Phone

The user can specify any telephone number as their single number reach telephone. This can be the home phone, the mobile phone or the telephone at their current location. The different reach numbers can be specified for their different presence locations settings.

Validated Delivery

The Cisco Unified CallConnector Mobility verifies the user at the reach number using a password to ensure that the business calls are delivered only to the user. The users can set their own access passwords.

Device Switching without Interrupting Calls

With Cisco Unified CallConnector Mobility, single number reach calls can be bridged on the IP Phone to allow mobile workers to continue the call after they arrive at the office and take advantage of speakerphone or other IP phone services. The call can be continued at either device without interruption, and users can use the best available IP Phone or mobile device.

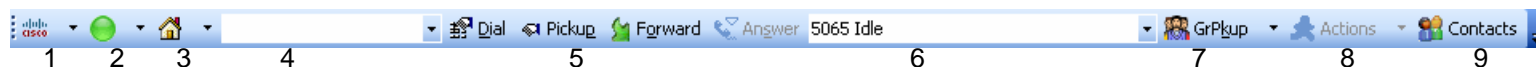
Benefits of Cisco Unified CallConnector Mobility

Cisco Unified CallConnector Mobility Feature	Description	Benefit
Simultaneous Ringing	The incoming call rings on the Cisco Unified IP Phone and the user specified number.	Call rings at both the Cisco Unified IP Phone and mobile phone. The call can be picked up at either device.
Bridged Calls	In bridged single number calls, the incoming call is available on both the Cisco Unified IP Phone and the remote telephone.	This allows users to walk into the office and switch the call from the mobile phone to the Cisco Unified IP Phone.
Routed Calls	In routed single number calls, the incoming call is transferred to the remote telephone.	User never misses important calls and customers are connected instead of going to voice mail.
Validated User	Users need to enter a password before the call is delivered to the remote telephone.	The business calls are always delivered to the user. If someone else answers, then the call is sent to voice mail.
Single Voice Mailbox	If the user is not available then the call is routed to the business voice mail box.	User needs to manage only one voice mail box for their business calls. Less time is needed for users to check multiple voicemail systems
User-customizable automation rules	Users can set rules for single number reach call handling.	User's setup their own rules for filtering and routing calls to their reach number. Different reach numbers can be set based on availability.
Integration with Presence and Location	Allows the automation rules to be triggered based on the current user availability and location.	As the user's availability and location changes, the calls can follow them to the most appropriate telephone device.
Switching between telephone devices	Allows the call to be switched from mobile to the Cisco Unified IP Phone and visa versa.	Based on the needs of the moment, users can take advantage of the reliability of the wired office phone or the convenience of the mobile phone.
Privacy for bridged calls	When the call is bridged, it cannot be picked up from the associated desktop phone.	Access to the call from the desktop is allowed as soon as the remote connection becomes active. This prevents the possibility of an unauthorized person listening in on that call.

CallConnector Toolbar Overview

The CallConnector toolbar runs within Microsoft Internet Explorer and Outlook and provides a unified one-click access to call handling, ability to quickly locate your contacts, initiate messaging and collaboration sessions. The Contacts button allows you to open information windows for viewing contacts, call logs or the presence status of your colleagues.

CallConnector Toolbar in Outlook



1. Cisco Icon/About Menu provides access to Help and links to more information on the Unified CallConnector and access to support and problem reporting resources.
2. Availability: Allows you to set your current availability status and publish it to your colleagues.
3. Location: Lets you change your current location and indicate whether you are at work or away on business.
4. Search Bar: Enter number to make a call or enter text to search for a contact. The pull down list lets you view the last numbers dialed or contacts located.
5. CallControl Buttons: You can control the call on your phone from these buttons. The buttons are context sensitive and change with the different call states.

Idle State: The Idle toolbar allows you to dial a new call, pickup a ringing or held call and forward your line to another number.

Ringing State: For an incoming call, you can only answer the call.

Connected State: The CallControl buttons change to provide Transfer, Conference, Hold, Hang-up and Park options.

Held State: When a call is on hold, you can resume the conversation.

6. Line Display Menu: The line display is a pull down list showing you the state of the 'lines' or extensions configured on your phone. For each line, it displays the extension number, the call state and the calling party information.
7. Telephony Features Menu: This provides a list of all the supported telephony features.
8. Action Menu: The Action menu is a contextual menu providing access to the additional contact numbers, collaboration and communication methods for the currently active caller. The menu is populated with the caller's contact details.
9. Contacts Button: The Contacts button opens a side window in Outlook and Explorer. These provide access to directories, logs, presence and availability status of the users,

Note: The Internet Explorer has two additional buttons:

Speed Dial Menu: Pull-down arrow to the right of the dial button displays the speed dial names.

Highlighter: Before the Contacts button allows you to convert telephone numbers in the Web pages to clickable numbers.

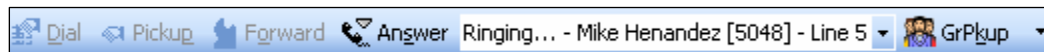
Handling Calls Using the Toolbar

The CallConnector Toolbar allows you to control the calls on you IP Phone from your PC using the mouse and keyboard. You have access to most of the telephone features available on you phone, but now they are integrated with your PC based data and accessed from a graphical interface.

IDLE STATE:



INCOMING STATE:



CONNECTED STATE:



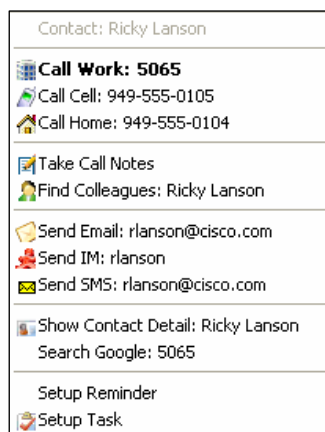
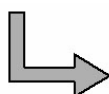
HELD STATE:



Locating Contacts from the Toolbar

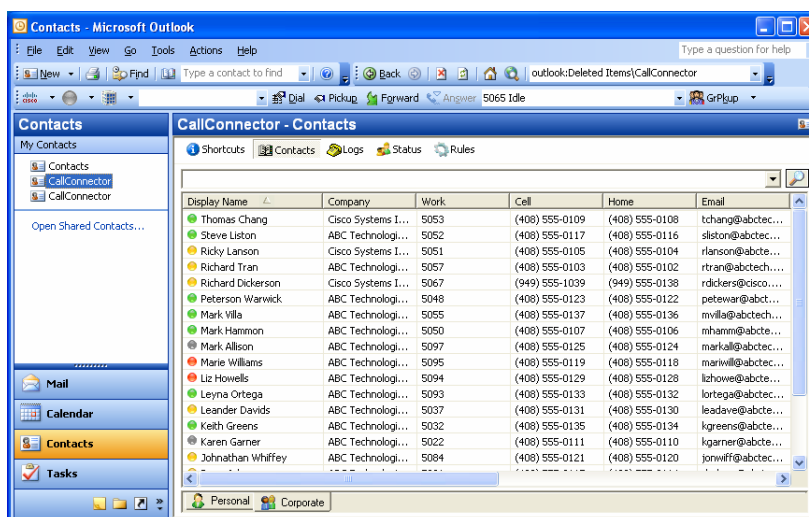
You can quickly locate and setup communication sessions with your contacts using the Toolbar QuickSearch. Communication options include making calls to work or mobile numbers, launching Email, SMS or Instant Message or opening up collaboration sessions.

QUICKSEARCH BAR



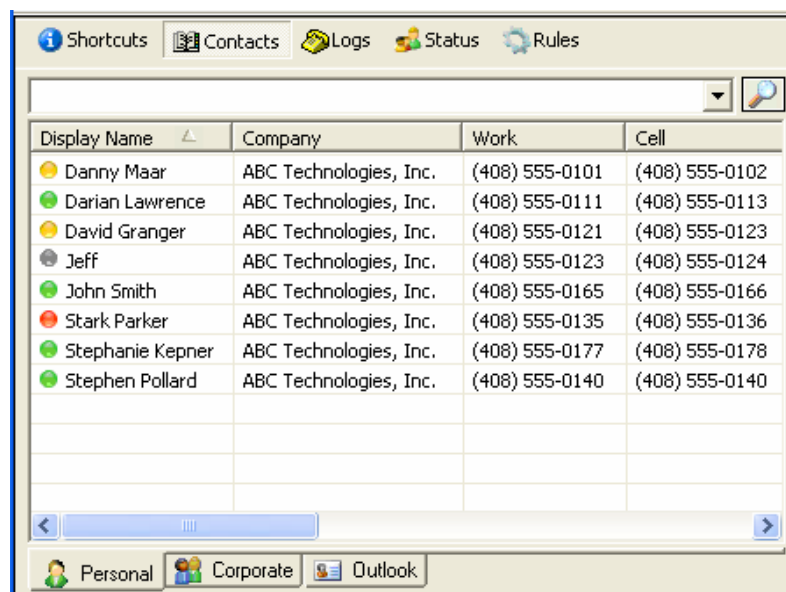
Accessing CallConnector Applications

The Unified CallConnector provides a suite of contact and presence management applications that are available from within Internet Explorer and Outlook. The figure below shows the CallConnector applications in Outlook.



Managing Contacts

The CallConnector supports three contact databases – Corporate for shared organization contact information, Personal available for each individual user and the Outlook contacts. The Contacts window allows you to search, view and manage this information.

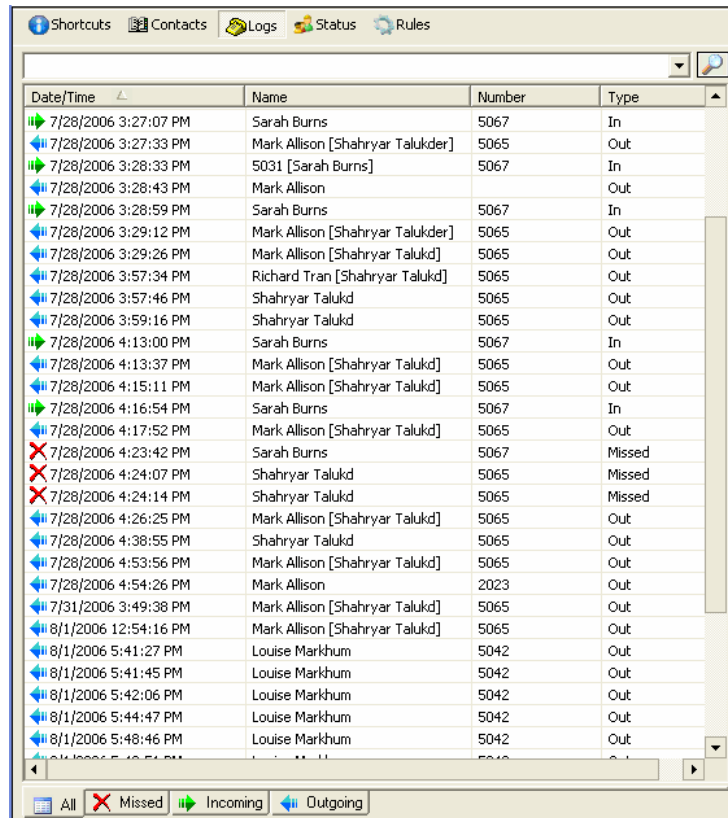


Viewing Call Log

The Unified CallConnector Call Logs displays all a list of all calls made and received from your UCC program. It allows you to view important information about phone calls and lets you quickly search calls with specific attributes. It also allows you to perform telephony actions from the right-click action menu. The Call Logs also allows you to sort your call logs by date/time, name, number, and call type. You may also view each type of call individually.

The Call Log window displays the history of the calls that have been made to or from your phone.

Call Log Window showing history of all user's calls



Date/Time	Name	Number	Type
7/28/2006 3:27:07 PM	Sarah Burns	5067	In
7/28/2006 3:27:33 PM	Mark Allison [Shahryar Talukder]	5065	Out
7/28/2006 3:28:33 PM	5031 [Sarah Burns]	5067	In
7/28/2006 3:28:43 PM	Mark Allison		Out
7/28/2006 3:28:59 PM	Sarah Burns	5067	In
7/28/2006 3:29:12 PM	Mark Allison [Shahryar Talukder]	5065	Out
7/28/2006 3:29:26 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 3:57:34 PM	Richard Tran [Shahryar Talukd]	5065	Out
7/28/2006 3:57:46 PM	Shahryar Talukd	5065	Out
7/28/2006 3:59:16 PM	Shahryar Talukd	5065	Out
7/28/2006 4:13:00 PM	Sarah Burns	5067	In
7/28/2006 4:13:37 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 4:15:11 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 4:16:54 PM	Sarah Burns	5067	In
7/28/2006 4:17:52 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 4:23:42 PM	Sarah Burns	5067	Missed
7/28/2006 4:24:07 PM	Shahryar Talukd	5065	Missed
7/28/2006 4:24:14 PM	Shahryar Talukd	5065	Missed
7/28/2006 4:26:25 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 4:38:55 PM	Shahryar Talukd	5065	Out
7/28/2006 4:53:56 PM	Mark Allison [Shahryar Talukd]	5065	Out
7/28/2006 4:54:26 PM	Mark Allison	2023	Out
7/31/2006 3:49:38 PM	Mark Allison [Shahryar Talukd]	5065	Out
8/1/2006 12:54:16 PM	Mark Allison [Shahryar Talukd]	5065	Out
8/1/2006 5:41:27 PM	Louise Markhum	5042	Out
8/1/2006 5:41:45 PM	Louise Markhum	5042	Out
8/1/2006 5:42:06 PM	Louise Markhum	5042	Out
8/1/2006 5:44:47 PM	Louise Markhum	5042	Out
8/1/2006 5:48:46 PM	Louise Markhum	5042	Out

Call Popup Window

The CallConnector Popup Window displays information on the calls at your phone. Each call is represented by one window. The Popup looks up the phone number in your contact database or Outlook and displays the name and organization information. The Popup window provides two call control buttons and the blue arrow for the Action menu.

Call work	5065
Call cell	949-555-0105
Call home	949-555-0104
Take Call Notes	
Find Colleagues:	Ricky Lanson
Send Email to	rlanson@abctech.com
Send IM to	rlanson
Send SMS:	rlanson@abctech.com
Show Contact Detail: Ricky Lanson	
Search Google:	5065
Setup Reminder	
Setup Task	

Action Menu


Ricky Lanson
X

5065
ABC Technologies Inc.


← Hang Up | Hold

Call Control Buttons:

Button	Description
Answer	Answers a ringing call
Busy	Activates the Do-Not-Disturb phone settings
Hang Up	Disconnects the call
Hold	Places the call on hold
Resume	Re-connects the held call

Using QuickSearch

From within any application, you can quickly locate and setup communication sessions with your contacts using QuickSearch. Communication options include making calls to work or mobile numbers, launching Email, SMS or Instant Message windows or opening up collaboration sessions. To use enter the first few letters of the first name.


Enter Name or Number
X

OK
Cancel

Enter Name or Number
X

	Randolf Smith	Cisco Systems, Inc.
	Richard Parker	Cisco Systems, Inc.
	Rick Doogle	Cisco Systems, Inc.
	Richard Dickerson	Cisco Systems Inc.
	Ricky Lanson	Cisco Systems Inc.
	Richard Martin	Cisco Systems, Inc.
	Robert McFadden	Cisco Systems, Inc.

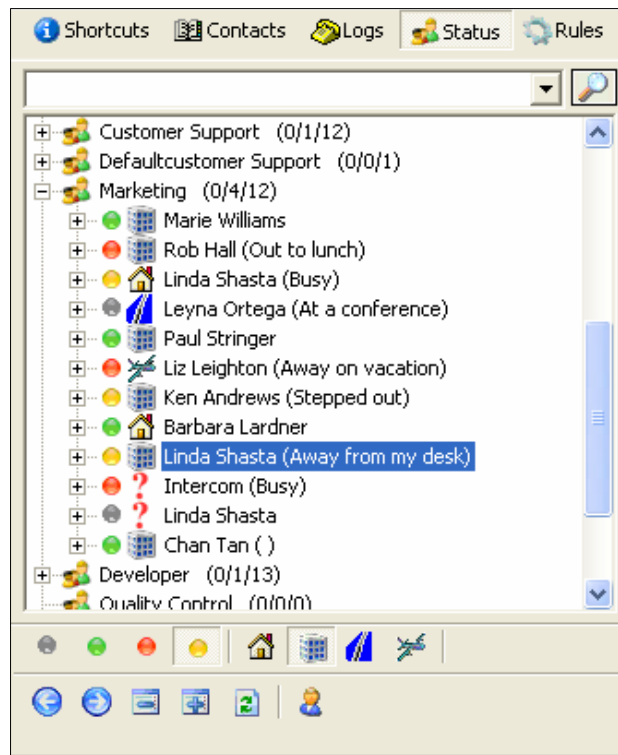
Call Work Phone
5067

Call Cell Phone	949-555-1039
Call Home Phone	949-555-0138
Call VoIP	
Send Email to rdickers@cisco.com	
Send SMS to rdickers@cisco.com	
Send Instant Message to Richard Dickerson	
Show Contact Detail	
Setup Task	
Setup Reminder/Appointment	
Take Note	
Search Google	
Status Busy	
Location At Work	
Message At My Desk	

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 every day 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. User's can manage their own presence status, make calls and send instant messages from this window.



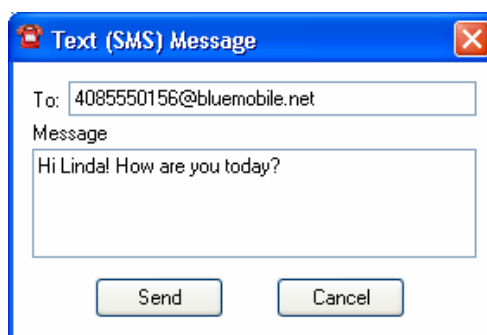
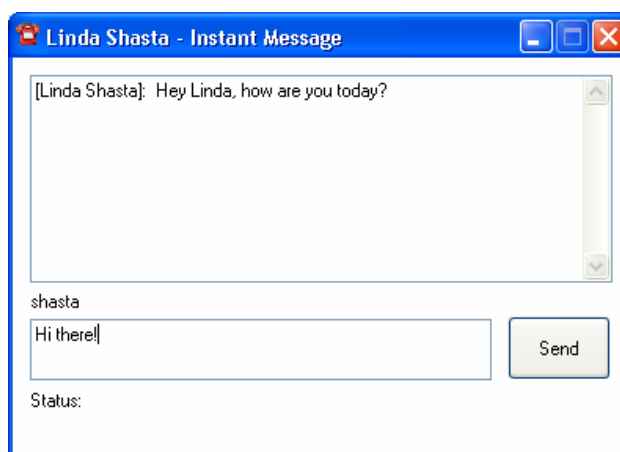
Updating Availability

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

Sending Instant Messages

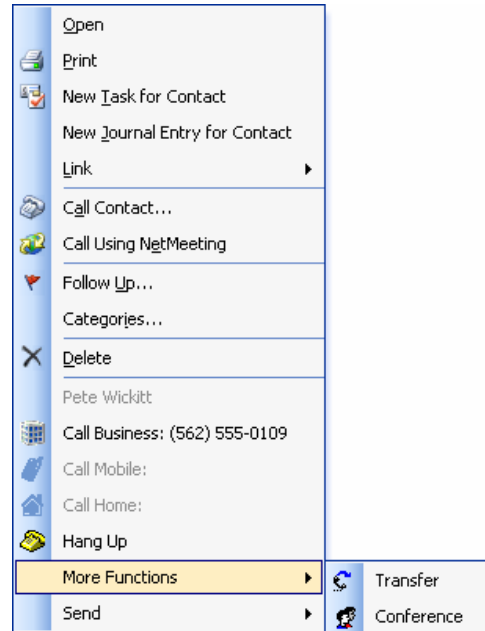
Instant messaging in the workplace can allow you to quickly resolve a question or communicate without interrupting the work flow. With the Unified CallConnector Server, users can send brief Instant Messages and Text (SMS) messages to their colleagues.



Instant Message and Text (SMS) Message Windows

Outlook Menu Extensions

Some of the Outlook menu have been extended to add in the user contact information and telephony action choices. These menus are described in this section.



Getting

Help

To get help on the operation of the Unified CallConnector client, click on the Cisco icon on the toolbars and select Help. This will display a CallConnector Help window form which you can browse and search to locate the topic of interest.

For more information on the Unified CallConnector you can also go to the Cisco web site at:

<http://www.cisco.com/go/unifiedcallconnector>

Installing Server Software

This chapter describes the steps for downloading and installing the Unified CallConnector Server software components. It includes the steps for both the Cisco Unified CallConnector Server (UCC Server) and Cisco Unified CallConnector Mobility Service (UCC Mobility). The following topics are discussed:

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

Unified CallConnector Server Installation

The Unified CallConnector Server software is installed on a Windows computer to provide shared access to call control, contact data and presence status for the Unified 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 Unified CallConnector Server software involves the following steps:

- Collecting the information required for obtaining and configuring the Unified 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 Unified CallConnector server software. See Minimum System Requirements for the Unified CallConnector Server in the sections below.
- Configuring the Cisco Unified CME IP Phone and RADIUS parameters. You will also need to have an account name and password for a telnet access to the Cisco Unified CME for downloading the phone configurations.
- Acquiring the Unified 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 Unified CallConnector Server installation on the computer, and entering the configuration information requested by the installation wizard.
- Registering your Unified CallConnector Server with the Cisco Activation server. NOTE: This requires access to the Internet.
- Setting up the Unified CallConnector Server configuration parameters from the Server Configuration wizard.
- Start the Unified CallConnector Server software and verifying that the services start up and run.
- Verifying that the users are able to log in and access the Unified CallConnector services.

The Unified CallConnector Server installation software is available in several models to support the different product bundles such as the UCC Server and UCC Mobility. Please check the Unified CallConnector web site for the most current information.

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

Pre-Requisites for Server Installation

As a part of the installation of the UCC 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 Unified CallConnector installation program	Service Provider or Sys-Admin
UCC Server Serial Number	Licensed version of the Unified CallConnector Server requires a serial number. You can get started with an evaluation version if you do not have a serial number.	Service Provider or Sys-Admin
UCC Mobility Serial Number	Licensed version of the Unified CallConnector Mobility Service requires an additional serial number. You can get started with an evaluation version if you do not have a serial number. (This is only required for the installation with the Mobility Service)	Service Provider or Sys-Admin
Admin or Power User Name and Password	Login access to the Windows PC on which the UCC Server software ins to be run.	Sys-Admin
Internet Access	Internet access is required for registering the UCC Server. This can be a direct access or through a Proxy server.	Sys-Admin

Table 3.1 Pre-requisite information for installing the Unified CallConnector Server

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

UCC Server Serial Number: The Unified CallConnector Server software requires serial number to operate. This serial number is provided to you when you purchase the software. There is an evaluation option for a limited time period that can be a started by entering 'trial' in the serial number field during the installation process.

Additional UCC Serial Number: Additional UCC Server components are licensed and require their own serial number to operate beyond the evaluation period. These serial numbers are provided to you when you purchase the software. The additional server components also support the evaluation option that can be a started by entering 'trial' in the serial number field during the installation process or in the Configuration Wizard.

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 Unified 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.

Windows Access Rights:

During the installation of the Unified 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.

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.

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 UCC Server. The number of users here refers to the number of concurrently logged on Unified CallConnector clients.

These are minimum requirements and deal with only the Unified 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	Pentium PC 2Ghz	Pentium Dual Core 3Ghz or Greater	Pentium Quad Core 3Ghz or greater
Memory (RAM)	1 Gbyte RAM with 350 Mbyte available for UCC Server	2 Gbyte RAM with 1 Gbyte available for UCC Server	4 Gbyte RAM with 2 Gbyte available for UCC Server
Operating System	Microsoft Windows XP Professional Service Pack 2 or Microsoft Windows 2003 Server	Microsoft Windows 2003 Server	Microsoft Windows 2003 Server
Disk Space	200 Mbyte available for UCC Server	400 Mbyte available for UCC Server	800 Mbyte available for UCC Server

Table 3.2 Recommended minimum computer system for the Unified 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 UCC Server.

Application Software

Unified CallConnector Server uses the settings of the 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

Telephone System

Communication Systems

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

- Cisco Unified Communications Manager Express 4.1 or higher.
- Unified Communication 500

Connecting to multiple Communication Systems:

The Unified CallConnector Server can be connected to multiple Cisco Unified CME 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 Unified CallConnector Server. Please consult with your Cisco System Engineering resource or channel partner for your specific configuration needs.

IP Phones:

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

- 7970, 7971
- 7960, 7961
- 7940, 7941
- 7920, 7921
- IP Communicator Softphone

LAN 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 Unified CallConnector Server and the Unified CallConnector clients and the Unified Communication Systems:

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

Table 3.3 TCP/UDP Ports used by the Unified CallConnector Server

Download Site

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

<<http://www.cisco.com/cgi-bin/tablebuild.pl/callconnector-ms>>

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

Installing the Unified CallConnector Servers

The installation process is the same for the different models of the Unified CallConnector Server applications.

During the installation process, the Unified 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 Unified CallConnector Server applications to run as Windows Services.

Step 1: Download the Installation Program

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

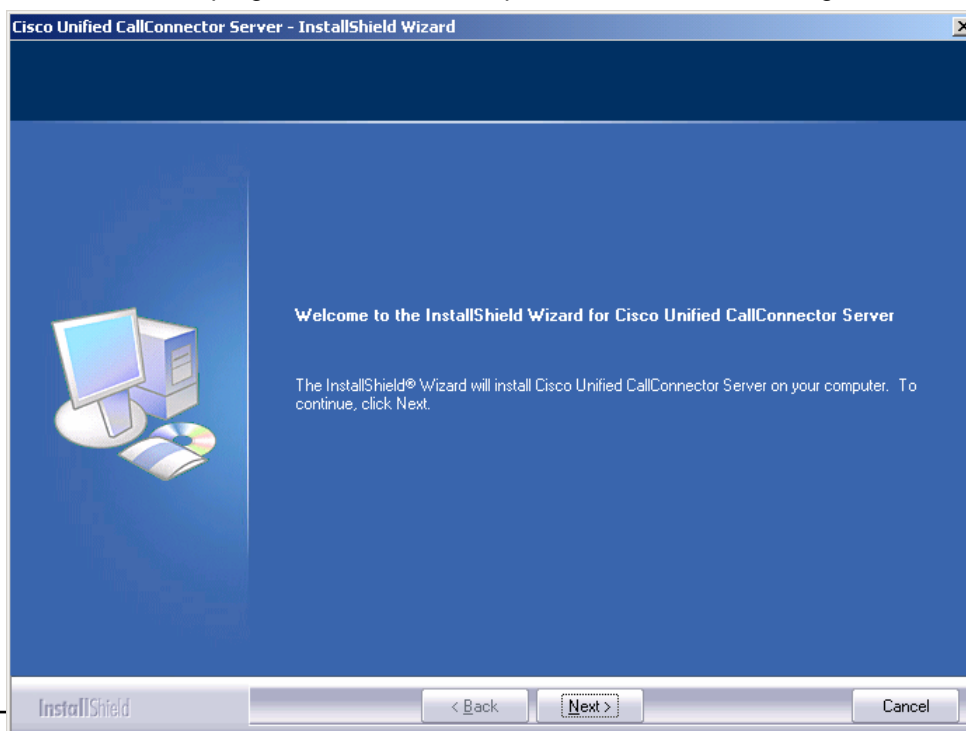
Step 2: Run the Unified CallConnector Installation

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.

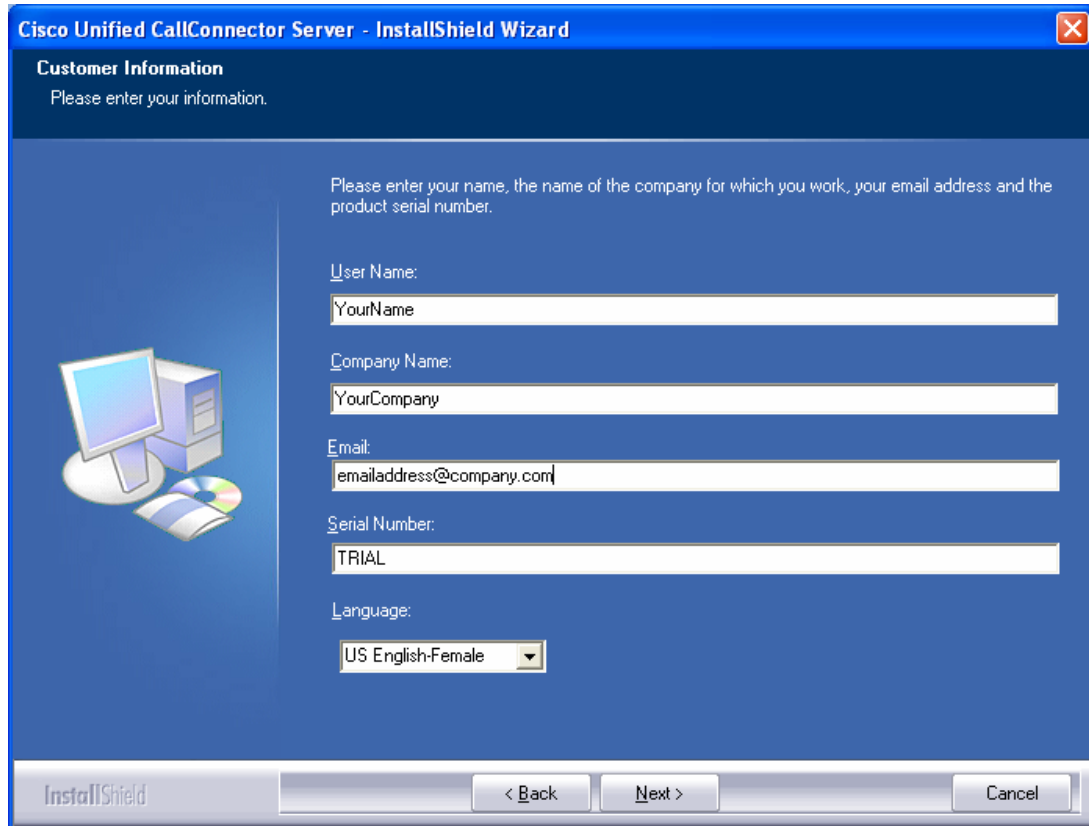
To Install Unified CallConnector Server: Launch the Unified CallConnector Server install program by double-clicking on it.

Once the install program is loaded, it will present the Welcome dialog.



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

Please read the Software License Agreement statement and click on **Yes** to accept the license and Next button for the Customer Information window.



The screenshot shows the 'Customer Information' window of the Cisco Unified CallConnector Server - InstallShield Wizard. The window has a blue header with the title 'Cisco Unified CallConnector Server - InstallShield Wizard' and a close button. Below the header, the title 'Customer Information' is displayed, followed by the instruction 'Please enter your information.' On the left side, there is an illustration of a computer monitor, a tower unit, and a CD-ROM. The main area contains the following fields and instructions:

- User Name:** A text box containing 'YourName'. Above it, the instruction says: 'Please enter your name, the name of the company for which you work, your email address and the product serial number.'
- Company Name:** A text box containing 'YourCompany'.
- Email:** A text box containing 'emailaddress@company.com'.
- Serial Number:** A text box containing 'TRIAL'.
- Language:** A dropdown menu currently set to 'US English-Female'.

At the bottom of the window, there is a progress bar and three buttons: '< Back', 'Next >', and 'Cancel'.

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

Company Name: The name of registering person company or organization.

Email: The email address of the registering person.

Serial Number: Each instance of the Unified CallConnector software is enabled with a unique serial number. This serial number is provided to you with your purchase packet or sent to you via email. If you do not have a serial number and wish to evaluate the Unified CallConnector for a limited time period, then enter 'TRIAL' in the Serial Number field. Note do not enter the single quotes.

Language: This option selects the graphical and telephone user interface language from the available languages. Note: Currently this selects the prompting language. Language options include several languages in male and female voices and a Custom selection. The Custom Selection is to allow you record your own prompt files.

To create your own prompt files:

Record your audio prompts. These must be in the supported audio file format. The file names must exactly match the files required by the application.

The email address and the serial number will be required if you need support related to the license activation. Please note the information below for your record.

Registration Email Address: _____

UCC Server Serial Number: _____

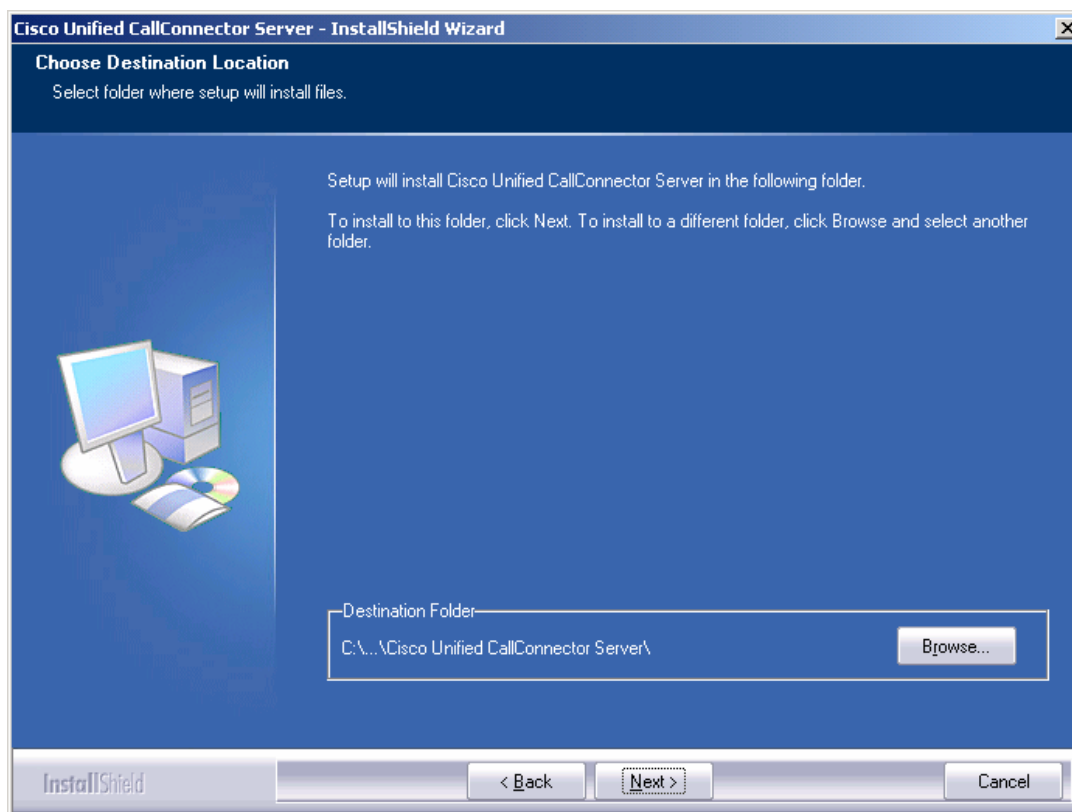
Note: The UCC Mobility Serial Number is entered through the configuration wizard.

To proceed:

Enter your name, company and the software serial number. Click **Next** or press the **ENTER** key.

Program Files Location:

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



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.

Once the files have been copied, it will launch the Unified CallConnector Server Setup Wizard to allow you to activate the serial number for the server.

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

Registering the Unified CallConnector Server

All installations of the Unified CallConnector need to be activated with the Cisco Unified CallConnector Licensing Server. Activation is a process in which the Unified CallConnector program sends the serial number and the installed computer information to the licensing server. The Licensing server verifies the serial number and saves it along with the computer information.

Cisco Unified CallConnector Server License Activation

This License server activation process will register your serial number and some PC hardware information with Cisco Systems to prevent un-authorized use of software. Your PC needs to be connected to the Internet during this process.

Serial Number:

To convert to a full license, enter a valid serial number above and activate the software. The following information is also saved with your serial number.

Name: * Email: *

At your option you may provide the following additional information for Cisco Marketing:

Work Phone: <input type="text"/>	City: <input type="text"/>
Company: <input type="text" value="YourCompany"/>	State: <input type="text"/>
Department: <input type="text" value="Your Department"/>	ZIP-Code: <input type="text"/>
Address: <input type="text"/>	Country: <input type="text" value="USA"/>

☐ Send optional personal information to Cisco Systems

Cisco System user information privacy policies can be reviewed at:
<http://www.cisco.com/web/siteassets/legal/privacy.html>

Click on **Activate** to start the activation process.

The activation process is initiated when the Unified CallConnector Server Wizard is run the first time. If the activation process is not completed successfully, then the Unified CallConnector Server programs will not run. The Server Wizard activation window is shown above.

The Serial Number that you entered during the installation is displayed in the Serial Number field. If you entered 'Trial' for a limited time evaluation, then this is displayed. You can convert the 'Trial' Serial Number to a fully licensed program by entering the serial number in this field.

If you are evaluating the Unified CallConnector Server, then the activation will obtain a trial-serial-number for you when you active the trail license. This will be displayed in the Serial Number field.

During the activation process, you serial number, name, email address and certain machine information is sent to the licensing server. You can also enter some personal information and chose to send it to Cisco systems to help us understand the deployment of the solution. The personal information is only sent if you select the checkbox 'Send optional personal information to Cisco Systems'.

To activate the Unified CallConnector, please make sure that you have access to the Internet from this personal computer and click on the Activate button.

The Unified CallConnector will access the Licensing Server over the Internet and send the activation information. A prompt is displayed when the activation process is started. The results of the activation are displayed when the process is complete.

Notes:

If you are using the trial serial number, then the Unified CallConnector Server will need to access the Licensing Server every time the CallConnector Server Wizard is run. This requires access to the Internet. The fully licensed Unified CallConnector is activated one time only.

You can convert from a trial to a licensed version of the Unified CallConnector Server from the Server Wizard Version Information window. When the trial period expires, the Unified CallConnector Server applications will stop working. When the Wizard is run, it will display the license activation window to allow you to enter a valid server license number.

Problems with Activation

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

Cannot Access the Internet

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

- Firewall blocking the Server Wizard 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.

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.unifiedcallconnector.com>

Trial (Evaluation) Period has Expired

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

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

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.

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.

Activation Information has been Modified

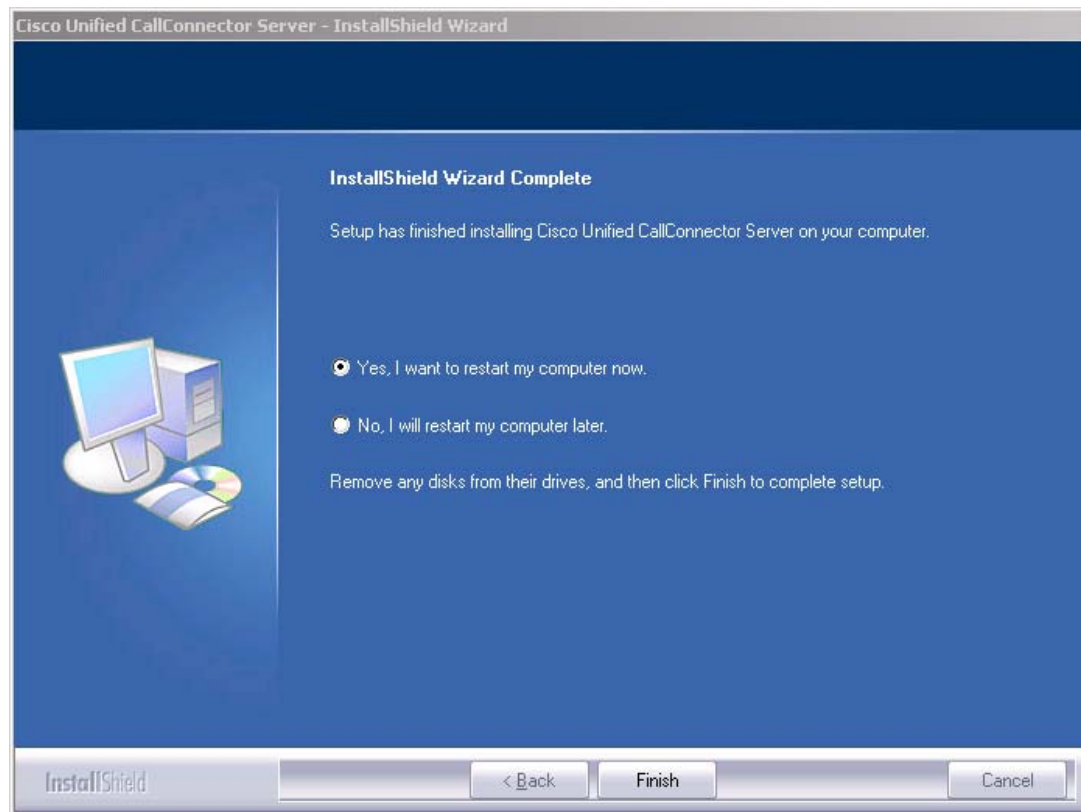
Once the serial number has been activated, a set of information is stored in the Windows registry. If this information is deleted or changed, then the activation checking will fail and you will need to re-activate the software.

Trial License has been blocked

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

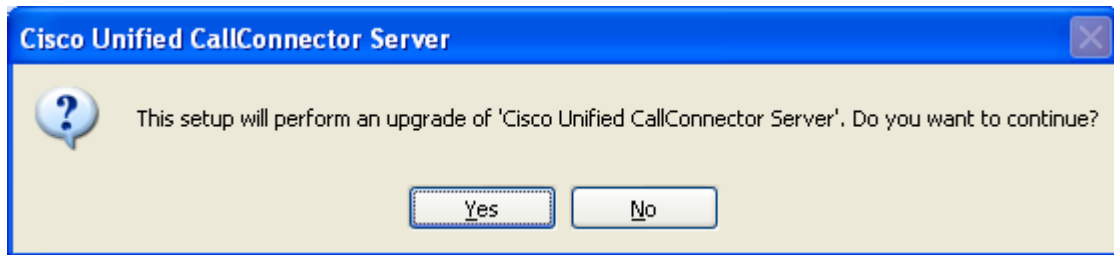
Restart the Computer:

The installed server components are available once the computer has been restarted.

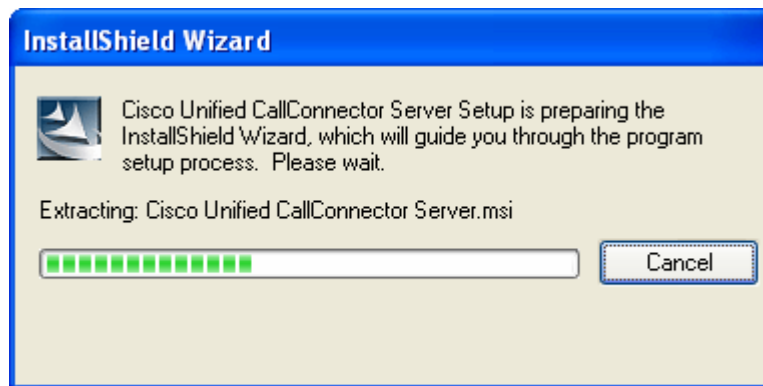


Performing an Upgrade

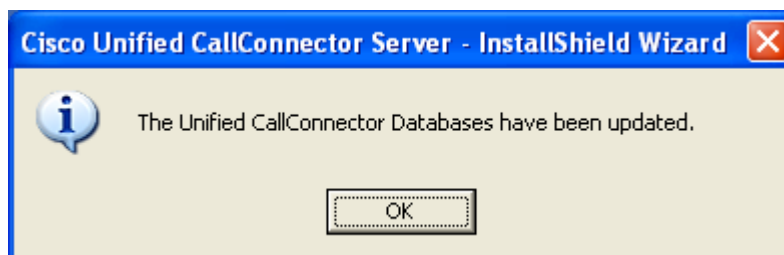
If you want to upgrade your Unified CallConnector to a newer version, then you can download and run this later installation program. The installation program will ask you if you want to upgrade the Unified CallConnector files.



Click on Yes to continue with the upgrade. Make sure that you have closed all instances of Internet Explorer and Outlook and the Unified CallConnector Server programs. The install program will then copy the newer versions of the files to your computer.



The upgrade process can also make changes to the database files and will prompt you with a confirmation.

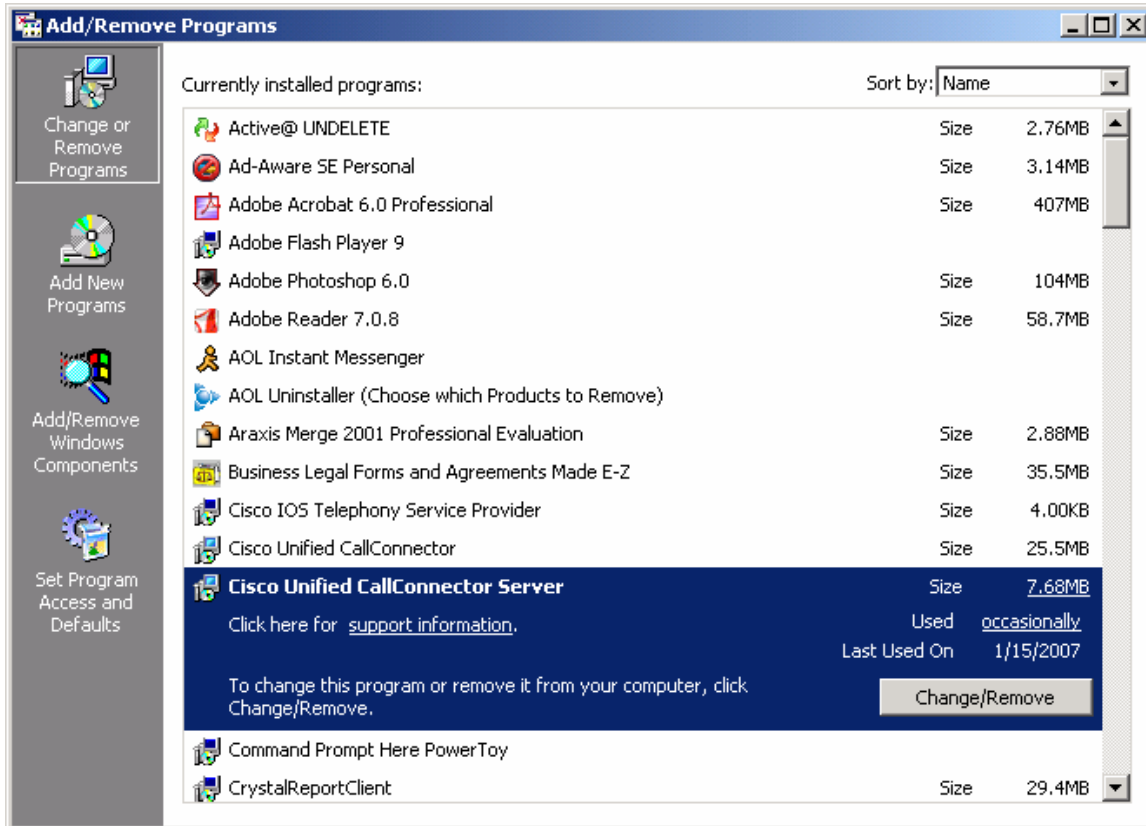


Once the files have been copied and updated you will be asked to restart the PC.

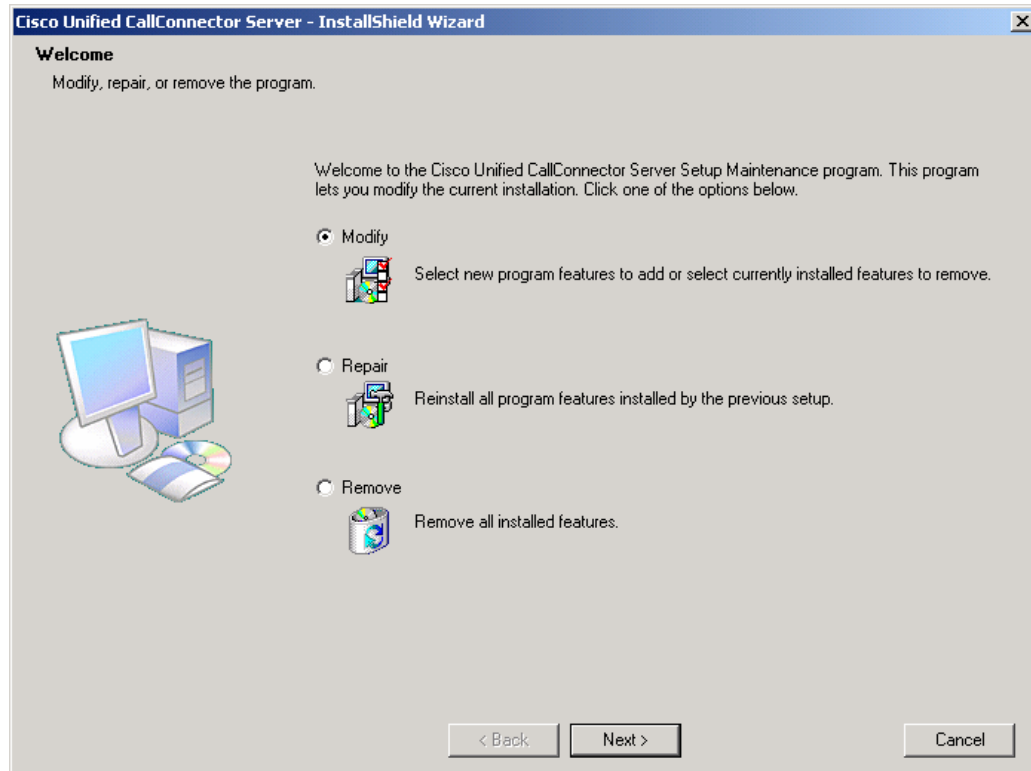
Removing Unified CallConnector Server

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

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



The Unified CallConnector Installation program will run. Click on the Remove button and then on Next.



The Unified CallConnector will be un-installed from your computer.

The Modify and Repair options compare the versions of the files in the PC with the version of the files in the installation. If later versions exist, these are updated.

Configuring Servers

This chapter describes how to configure and setup the Unified CallConnector Server applications and covers the following areas.

Configuration Overview -	Describes the components and parameters that have to be setup for the proper operation of the Unified CallConnector Server components.
Pre-requisites for Configuration -	Describes the information you need to have on hand or have setup for use during the configuration of Unified CallConnector Server.
Server Setup Wizard -	Provides an overview and describes how to start and exit the Unified CallConnector Server Setup Wizard.
Setting Up SIP Parameters -	Describes the SIP Server configuration parameters and the default values.
Database Server Setup -	Describes the Database Server configuration parameters and the default values.
Presence Server Setup -	Describes the Presence Server and RADIUS server configuration parameters.
Setting up CallController -	Describes how to setup the CallController server by downloading and selecting the ephones.
Setting Automation Server -	The Automation Server can hosts a number of different services. In particular it supports the Mobility Service. This section describes the Automation Server configuration parameters.
Create a List of Group-	Describes how to enter the department or groups for viewing in the Status window.
Adding Users -	Describes how to add, modify and delete the user account information for the Unified CallConnector users.
Configuring User's Phones -	Describes how to associate an ephone with a user.
Sending Notifications -	Describes how to send out an email notification to the UCC users and the different attachment options.
Reporting Problems -	Describes how to report any problems that you may be experiencing with the Unified CallConnector Server.

Server Configuration Overview

The Unified CallConnector Server is comprised of server applications that run as services on a Windows computer system. Together these server applications provide call control, data access and presence services to the Unified CallConnector clients. In addition to the server applications, the Unified CallConnector Server maintains the user configuration data and the contact and transactional data using a database system.

These Server applications connect to the Cisco Unified CME router for call control information and to the Unified CallConnector clients connect to the server applications.

The configuration of the Unified CallConnector Server software requires a set of information and prior setup of the Windows platform and the Cisco Unified Communications Managers. The pre-requisites for the configuration are discussed in the next section.

To setup the Unified CallConnector Server, these following aspects of configuration have to be completed.

- Setting up the Server Application's Communication Parameters
- Downloading and selecting the ephones that will be controlled by the UCC Server
- Setup the Automation Server parameters for the hosted automation applications. In the basic UCC Server, this option is disabled and not available for configuration.
- Defining the organization's groups or departments
- Creating User account with login IDs and contact information. Assigning users to their groups/departments.
- Associating ephones with the users
- (Optionally) Sending the user's login information via email to the allow them to more easily install the Unified CallConnector client.
- Verify that the configuration parameters are correct and the server applications are functioning.

An overview of these configuration steps are described in the following paragraphs.

Server Application's Communication Parameters

Each of the Unified CallConnector Server applications need to be setup and configured to allow them to:

- Communicate using SIP messages.
- Access the functions for which they are providing services.
- Enable the debug trace capability and debug file as needed.
- 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. The first server application window (System SIP Server) allows you to enable the same password and debug trace levels for

all server applications. Note: The RADIUS password needs to be set, independently of the other servers.

Communicating using SIP

The Unified CallConnector Server applications use the Session Initiation Protocol (SIP) for inter-process messaging and communication. Each server application need to be configured with the address of the SIP Server and the port used to receive messages. The Unified CallConnector Servers each have a pre-defined 'well-known' name that is recognized by the SIP Server.

The Server application ports are used for both UDP and TCP connections.

- Default values of the ports are presented by the configuration wizard.
- These ports must be available and not used by any other application. You can verify the port availability using tools such TCPView.
- Each Unified CallConnector client setup a TCP connection to the CallController, Presence and Database server applications.
- If the default ports are not available on your machine, these can be changed to other available ports.

Debug Tracing

Each of the server application supports writing trace and debug information to a log file. This trace function can be enabled from the Server Wizard. There are six trace levels defined. For each level, all the trace messages for that level and below are written to the log files.

Critical:	Fatal error – the application will terminate.
Error:	Defect in a feature or function. Does not affect the operation of the application.
Warning:	Generally indicating resources are being depleted.
Information:	Information messages for significant events in the operation of the application.
Debug:	Summary level trace messages to assist in debugging the application.
Trace:	Verbose level trace messages for debugging the application.

The debug messages are written to individual files for each server application. Information is written to the trace 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.

Downloading Ephone Information

The UCC Server can connect to the Cisco Unified CME ephones in two different ways – to control another ephone that is running independently or to connect as an IP Phone (softphone) to the router.

Control another IP Phone

In this configuration the ephone exists either as a IP Phone or as a softphone and the UCC Server connects to the router in a manner to allow the UCC Clients an ability to control the calls on that IP Phone.

This configuration requires the ephone to be configured with a user name and password.

Emulate an IP Phone

When configured to emulate an IP Phone, the UCC Server itself connects to the Cisco Unified CME as an IP Phone. In this mode the media is terminated by the UCC Server.

Each ephone that is to be controlled by the UCC Server has to be specified through the Server Configuration Wizard.

The ephones parameters, which include the CME IP address, ephone MAC address, port, user name and password of the ephone, can be entered manually or downloaded from the CME.

The download method uses the Telnet protocol to access the CME configuration information. To use this method, you will need to have a Telnet account and provide the user name and password to the Wizard. The Wizard downloads the parameters for all the ephones configured on the CME. You will then need to select the ephones that are to be controlled by the Unified CallConnector Server from this list. To specify ephones that are to be emulated, check the option “Connect as Softphone” before adding the ephone to the CallController Server list.

Defining Groups/Departments

The Unified CallConnector Presence Server displays the user grouped by their department in the Status window. This list of users is read from the Corporate contacts database. The Corporate contacts database can include users that have accounts on the Unified CallConnector Server and are therefore able to login. The Corporate directory can also contain contact information for non-UCC users.

Groups/Departments should be defined using the Server Wizard. The Wizard allows you to add, modify and delete the Groups/Departments. The Presence Server can controll access to the status of the users in these groups. You can determine if the users in Group ‘A’ can view the status of users in group ‘B’. Access control is supported only for the groups defined through the Server Wizard.

Setting up User Configuration

In order to access the services provides by the Unified CallConnector Server applications, users have to be configured on the UCC Server to allow them to login. The user configuration creates a list of the users with their contact information and login names and passwords.

Associating Ephones with Users

You need to associate an ephone with a user. A user can have one ephone, however an ephone can be shared by multiple users.

The allocation of the ephone to a user is made through the Server Wizard.

Emailing Instructions/Notification to Users

Two types of email notification services are provided by the Unified CallConnector Setup Wizard:

- **User Notification:** The administrator can send email messages to selected users with the Server Wizard. In this the administrator can optionally select additional information to be automatically insert or attached. These include user login name and password, attached document such as a user guide or attached customized configuration file to simplify the client installation.
- **Problem Report:** This allows the administrator to sent a description of the problem being experienced with the server and attach the debug/trace log files to help with the problem diagnosis.

The email notification service requires a pop3 email account to be available for sending the messages.

Pre-Requisites for Server Configuration

The configuration of the Unified CallConnector Server software involves the following steps:

- Collecting the information required for obtaining and configuring the Unified CallConnector Server. 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 Unified CallConnector server software. See Minimum System Requirements for the Unified CallConnector Server in the sections below.
- Configuring the Cisco Unified CME IP Phone and RADIUS parameters. You will also need to have a user name and password for a telnet account to the CME for downloading the phone configurations.

This chapter describes the steps for configuration and setup of the Unified CallConnector Server software. The next chapter cover the required settings on the Cisco Unified CME router.

As a part of the installation of the Unified 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
UCC Server Serial Number	Obtain the serial number or use 'trial' for a limited time evaluation period	Sys Admin
User account and contact information	Obtain the user's contact and account information for creating the user accounts	Sys-Admin
Cisco Unified CME Configuration	Configure the ephones and RADIUS parameters on the router.	Service Provider or Sys-Admin
TCP and UDP Ports	Verify that the required TCP/UDP ports are available on the server.	Sys-Admin

Table 3.1 Pre-requisite information for installing the Unified CallConnector Server

Server Setup Wizard

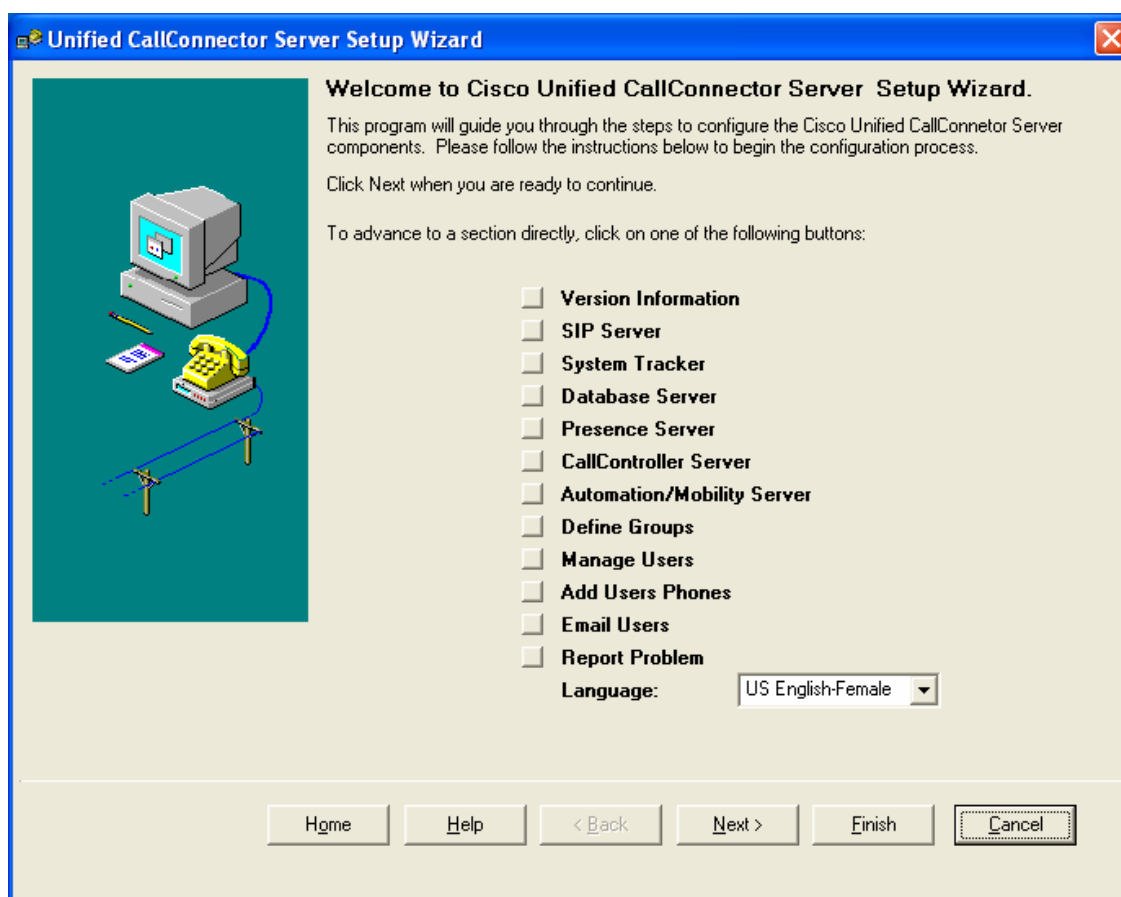
The Unified CallConnector Server Setup Wizard is an application that runs on the Unified CallConnector Server computer and provides the graphical interface to setup the configuration information for the Server applications and save then in the proper repositories.

Starting the Wizard

The Unified CallConnector can be started from:

Start Menu->Programs->Cisco Systems
->Unified CallConnector Server-> Unified CallConnector Server Wizard.

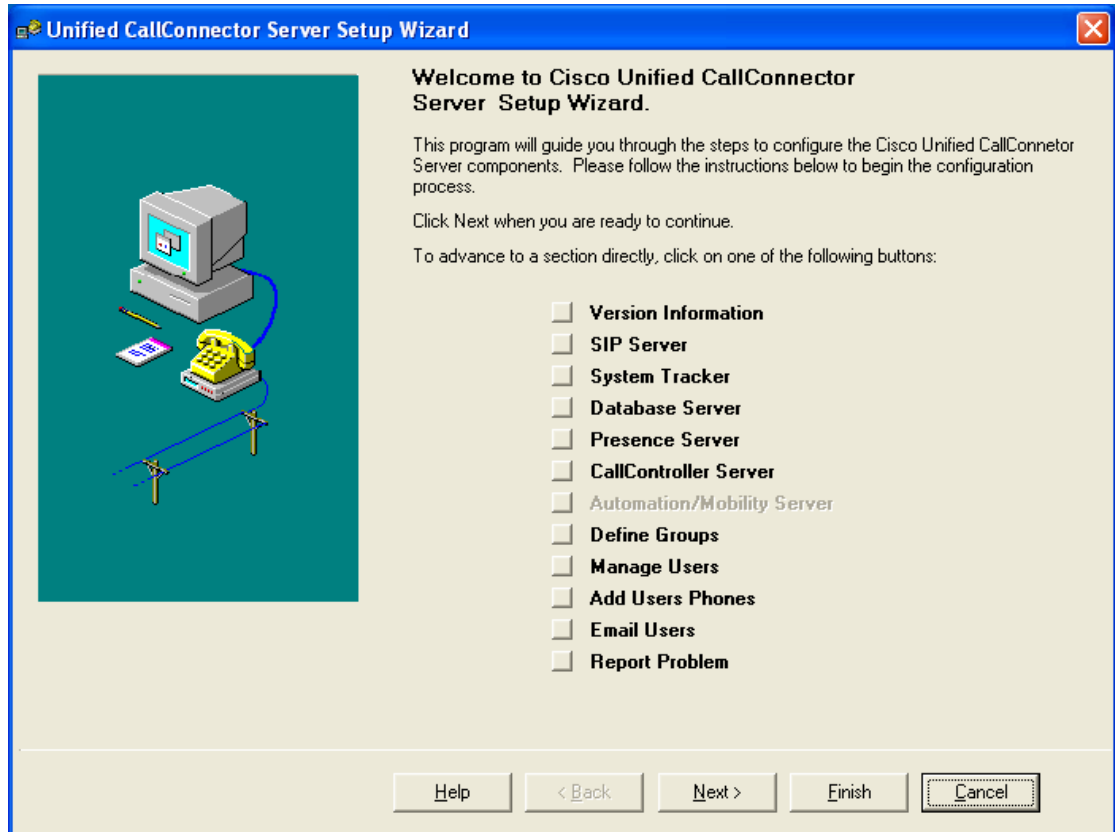
The Wizard allows you to step through each of the configuration screens or directly jump to a specific window.



You can jump directly to a section by clicking on the button to the right or click on the Next button to navigate through all the windows. Click on Home to return to this first page. Information in some of the windows is written when you move to the next window. In other cases, the information is written when you click on the Finish button. If you click on Cancel or the Exit button, this information is not written.

NOTE:

1. YOU NEED TO RESTART THE UCC SERVER APPLICATIONS TO APPLY THE WIZARD CONFIGURATION CHANGES.
2. IF THE AUTOMATION/MOBILITY SERVER OPTION IS DISBALED THEN THE INSTALLATION THAT YOU ARE RUNNING DOES NOT HAVE THE MOBILITY SERVICE FILES. YOU WILL NEED TO DOWNLOAD THE UNIFIED CALLCONNECTOR SERVER WITH MOBILITY SERVICE INSTALLATION PROGRAM.



Version Information

The Version Information window displays the file version from each of the Server applications. It also displays the overall Unified CallConnector Server Build date and Version at the top right of the window.

Unified CallConnector Server Setup Wizard

Version Information

Unified CallConnector Versions: Build: 1070517 Version 1.0.5

CallController Server:	Version 1.0.4.45
Database Server:	Version 1.0.1.32
Presence Server:	Version 1.0.5.45
Automation/Mobility Server:	Version 1.0.0.18
Radius Library :	Version 1.0.0.145
Setup Wizard:	Version 2.0.105.43
SIP Server:	Version 1.0.1.35
Skinny Library:	Version 4.6.126.111
System Tracker:	Version 1.0.0.32

Server Serial Number

Serial Number:

Click on Next to continue.

Home Help < Back **Next >** Finish Cancel

The License Serial Number can be modified from this window as described below.

Converting from Trial to Licensed Version

The evaluation version of the Unified CallConnector Server can be converted to a licensed version by entering a valid Server Serial Number.

To Convert from Trial to Licensed Version:

- Open the Server Setup Wizard to the Version Information page.
- Delete the TRIAL_UCCS-xxxxxx trial serial number, enter the server serial number and click on update.
- You will need to exit and restart the Setup Wizard to activate the serial number with the Unified CallConnector License Server.

Setting up System SIP Parameters

Parameters for the System SIP Server and the System Tracker need to be setup to allow the Unified CallConnector server applications and clients to run properly.

System SIP Server

- Click on the SIP Server button in the welcome page or click Next to get to the System SIP Server Parameters page.

The screenshot shows a Windows-style dialog box titled "Unified CallConnector Server Setup Wizard". The main heading is "System SIP Server Parameters". Below this, it says "Please enter the System SIP Server parameters:". There are two text input fields: "SIP Domain:" with the value "192.168.1.8" and "Port:" with the value "5060". Below these is a horizontal line. Then there is a checked checkbox "Enable trace log file.". Below that is a "Trace Level" dropdown menu set to "5" and a "Trace file:" text box containing "C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\". Another horizontal line follows. There are two more checked checkboxes: "Apply debug trace log setting to all servers" and "Apply password to all servers". To the right of the second checkbox is a "Password:" text box filled with asterisks. At the bottom, it says "Click on Next to continue." and there are six buttons: "Home", "Help", "< Back", "Next >", "Finish", and "Cancel".

- SIP Domain: Enter the IP address of the computer on which the Unified CallConnector Server software has been installed. The SIP Domain can also be a network address if that domain name has been registered with the local Domain Name Server (DNS).
- Port: This is the port on which the Unified CallConnector System SIP server will receive messages. The default port for the System SIP Server is 5060.
- Trace Logging: If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. This option is checked at the server application startup, to determine if debug logging is enabled. By default the trace files are saved in the Trace Log folder under the Unified CallConnector Server. To apply this Trace Log setting to all the Server applications, enable the option 'Apply debug trace log setting to all servers'.
- Apply password to all servers: The specified password is applied to all the UCC Server applications avoiding the need to enter the information in each

of the server windows. (Note – This does not apply to the RADIUS password. The RADIUS password must be entered separately).

Click on Next to continue.

System Tracker Parameters

The System Tracker polls each of the Unified CallController Server applications and sends Server Connected, Disconnected, Ready or Not Ready messages to the subscribing clients.

The screenshot shows the 'System Tracker Parameters' window of the 'Unified CallConnector Server Setup Wizard'. The window has a blue title bar and a red close button. A blue checkmark icon is next to the title. The main area is light beige and contains the following fields and options:

- Please enter System Tracker Parameters:**
 - SIP Server Address:
 - Port:
 - Username:
 - Password:
- ☒ Enable trace log File
 - Trace Level:
 - Trace File:

At the bottom, there is a text prompt: "Click on Next to continue." Below this are six buttons: Home, Help, < Back, Next >, Finish, and Cancel. The 'Next >' button is highlighted with a black border.

- **SIP Server Address:** This is the IP address or network address of the computer with the System SIP Server. If the Unified CallConnector Server components are all installed on one computer, then this address will be the IP address of this machine.
- **Port:** This is the port used by the System Tracker to receive messages. The default value is 5071. If this port is not available, then change this to a port available on the computer.
- **Username:** This is the well-known name of the System Tracker. This cannot be changed.
- **Password:** This password is used to authenticate the registration of the System Tracker. Enter the password. This can be any text or number string up to twelve characters in length.

- If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. This option is checked at the server application startup, to determine if debug logs are to be written.

Click on Next to continue.

Database Server Parameters

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

The screenshot shows the 'Unified CallConnector Server Setup Wizard' window. The title bar is blue with the text 'Unified CallConnector Server Setup Wizard' and a close button. The main window has a light beige background. At the top, there is a blue header bar with a checkmark icon and the text 'Database Server Parameters'. Below this, the text 'Please enter Database SIP Server Parameters:' is displayed. There are four input fields: 'SIP Server Address:' with the value '192.168.1.8', 'Port:' with the value '5061', 'User Name:' with the value 'ccDatabaseServer', and 'Password:' with the value 'XXXXXXXX'. Below these fields, there is a checkbox labeled 'Enable trace log file.' which is checked. Below the checkbox, there is a 'Trace Level:' dropdown menu with the value '5' and a 'Trace file:' text box with the value 'C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\'. At the bottom of the window, there is a button labeled 'Click on Next to continue.' and a row of six buttons: 'Home', 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'.

SIP Communication Parameters

- SIP Server Address: This is the IP address or network address of the computer with the System SIP Server. If the Unified CallConnector Server components are all installed on one computer, then this address will be the IP address of this machine.
- Port: This is the port used by the Database Server to receive messages. The default value is 5061. If this port is not available, then change this to a port available on the computer.

- Username: This is the well-known name of the Database Server. This cannot be changed.
- Password: This password is used to authenticate the registration of the Database Server. Enter the password. This can be any text or number string up to twelve characters in length.
- If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. By default the trace files are saved in the Trace Log folder under the Unified CallConnector Server.

Click on Next to continue.

Database System Parameters

The Unified CallConnector supports three separate databases. These include the Corporate Directory Database, the Transaction Log Database and the Unified CallConnector Configuration Databases.

Unified CallConnector Server Setup Wizard

Database Server

Corporate Database: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Data\Cor

Log Database: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Data\Call

UCC-Database: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Data\UC

Remove call logs older than 30 in days.

Backup Data Files: Backup Restore

Compact Data Files: Compact Databases

Click on Next to continue.

Home Help < Back Next > Finish Cancel

The Server Installation program copies the default database files to the Data folder under the Unified CallConnector Server. This Wizard page allows you to select different files if you have these files saved or backed up in a different folder.

To Select Different Database files

- Click on the Browse button for the database of interest and select the appropriate file.

NOTE: The Unified CallConnector must use the databases and tables that have provided by the install program. The database structure, the tables and the fields in the tables cannot be changed. You may backup the database files and from the wizard select these backed-up database files.

Managing the Database files

The following data management options are provided in the Unified CallConnector server:

Removing the Call Log Entries

The call log entries are written to the database for every number for which there is a match with a Unified CallConnector user's contact numbers. Over a period of time a large number of records can be written. Individual Unified CallConnector users can manually delete their own call log entries. This option allows you to set a policy to automatically delete the call log entries that are older than a certain number of days. Three duration selections are available – 30, 60 or 90 days. To disable this automatic call log entry removal option, select the 0 days option from the pull down list.

Database Backup

The database backup option allows you to save the current database files to a backup folder. You should first stop the Unified CallConnector Server applications. The database files are copied and saved in the Databackup folder. Any existing database files in the backup folder are overwritten. When you click on the Backup button, you will be prompted to close the server applications.

Database Restore

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 Unified CallConnector Server applications. The database files are copied from the Databackup folder to the Data folder. Any existing database files in the Data folder are overwritten. When you click on the Restore button, you will be prompted to close the server applications.

NOTE: THE DATABASE RESTORE WILL OVERWRITE THE DATABASE FILES AND YOU WILL LOOSE 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 Unified CallConnector Server applications before starting the Compact operation.. When you click on the Compact Database button, you will be prompted to close the server applications.

- Select the number of days you want to retain the call log entries from the pull down list. Select zero if you do not want to automatically delete log entries.

Click on Next to continue.

Presence Server Setup:

The Unified 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 Unified CME. The user presence information and telephone status is published to all authorized clients in real-time. There are two aspects to the configuration – setting up the communication parameters to handle the SIP messages and setting up the Radius parameters to allow the Presence Server to receive these Radius accounting messages.

Presence Configuration Notes

- The Presence Server publishes the list of users in the Corporate directory database grouped by their departments.
- The Presence Server manages and publishes the presence status (availability and location) and the telephone status of these users in real-time.
- Contacts in the Corporate directory can be UCC users and non-users. A UCC user has a user login account created via the Server Wizard.
- Presence status is published for both types of users.
- Only the UCC users can update their own status; administrator's or managers need to change the status of the non-UCC users.
- Telephone status is published only if there is a match on the caller or called number with one of the user's work, work-2, home or mobile numbers.
- 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.
- Call logs are only written for the UCC users.
- Presence Access control can only be applied to the Groups/Departments defined through the Server Wizard.
- The department field in the Corporate directory can contain directory names that are not in the 'Group' list.
- The status of the user's in departments not in the Group list is visible to all the UCC users.

The screenshot shows a Windows-style dialog box titled "Unified CallConnector Server Setup Wizard". Inside, there's a section titled "Presence Server Parameters" with a blue checkmark icon. Below this, it says "Please enter Presence SIP Server Parameters:". There are several input fields: "SIP Server Address" with the value "192.168.1.8", "Port" with "5062", "User Name" with "ccPresenceServer", and "Password" with "xxxx". Below these is a horizontal line, followed by "Pattern Length" with "5", "Pattern Prefix" with "408", a checked checkbox for "Enable trace log file (when requested by TAC)", a "Trace Level" dropdown set to "5", and a "Trace File" text box containing "C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\". At the bottom, it says "Click on Next to continue." and there are buttons for "Home", "Help", "< Back", "Next >", "Finish", and "Cancel".

SIP Communication Parameters

- SIP Server Address: This is the IP address or network address of the computer with the System SIP Server.
- Port: This is the port used by the Presence Server to receive messages. The default value is 5062. If this port is not available, then change this to a port available on the computer.
- Username: This is the well-known name of the Presence Server. This cannot be changed.
- Password: This password is used to authenticate the registration of the Presence Server. Enter the password. This can be any text or number string up to twelve characters in length.
- If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. This is checked at server startup only. By default the trace files are saved in the Trace Log folder under the Unified CallConnector Server.

Pattern Length and Prefix

The Presence Server tries to match the incoming caller-id to the numbers in the directory databases. The caller-id information received from the RADIUS messages can be 7 or 10 digits long. The user extension numbers in the directory database can be saved either as extension numbers 3, 4 or 5 digits long or in the canonical format including the area code. If the internal extension numbers are saved in the directory in the abbreviated format, then the 'Pattern or Extension Length' and 'Pattern or Extension Prefix' have to be configured to allow the caller-id from the RADIUS messages to be correctly looked up.

For example:

The internal extension length is four digits and the caller number is 4341000. If the work numbers are saved in the directory as four digit numbers such as 1000 then the pattern length and extension have to be configured. The Pattern Length should be configured as 4 and the Pattern Prefix should be set to 434. The Presence Server will append the prefix to the extension number in the directory then perform the lookup,

However if the work number in the directory is saved a 434-1000 then the Pattern Length and prefix do not need to be configured.

Click on Next to continue.

The next window sets up the parameters for the Radius Accounting server incorporated in to the Presence Server. Two parameters need to be specified for the Presence Server to receive the accounting packets from the Cisco Unified CME.

The screenshot shows the 'Unified CallConnector Server Setup Wizard' window, specifically the 'Presence Server Radius Parameters' step. The window has a blue title bar and a white background. A blue checkmark icon is in the top left corner. The title 'Presence Server Radius Parameters' is centered at the top. Below the title, the section 'Radius Parameters:' is followed by two input fields: 'Authentication Key (Password):' with a masked password 'xxxxxxxx' and 'Radius Accounting Port:' with the value '1646'. A note states: 'Note: The RADIUS Accounting service on the router need to be enabled. In addition: Radius-server host ip-address = This PC ip-address, Radius-server acct-port = Accounting Port (above), Radius-server key = Authentication Key (above)'. Below the note, there is a checkbox 'Enable trace log file' which is checked, a 'Trace Level:' dropdown menu set to '5', and a 'Trace File:' text box containing 'C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\'. At the bottom, there is a button 'Click on Next to continue.' and a row of navigation buttons: 'Home', 'Help', '< Back', 'Next >' (which is highlighted with a dashed border), 'Finish', and 'Cancel'.

To Set the Radius Parameters:

- Enter the Authentication Key value. This is the password value used to authenticate the communication between the Cisco Unified CME and the Presence Server. This value must match the Radius Server Key value set in the Cisco Unified CME router.
- Radius Accounting 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 Unified CME router.

Click on Next to continue.

NOTES:

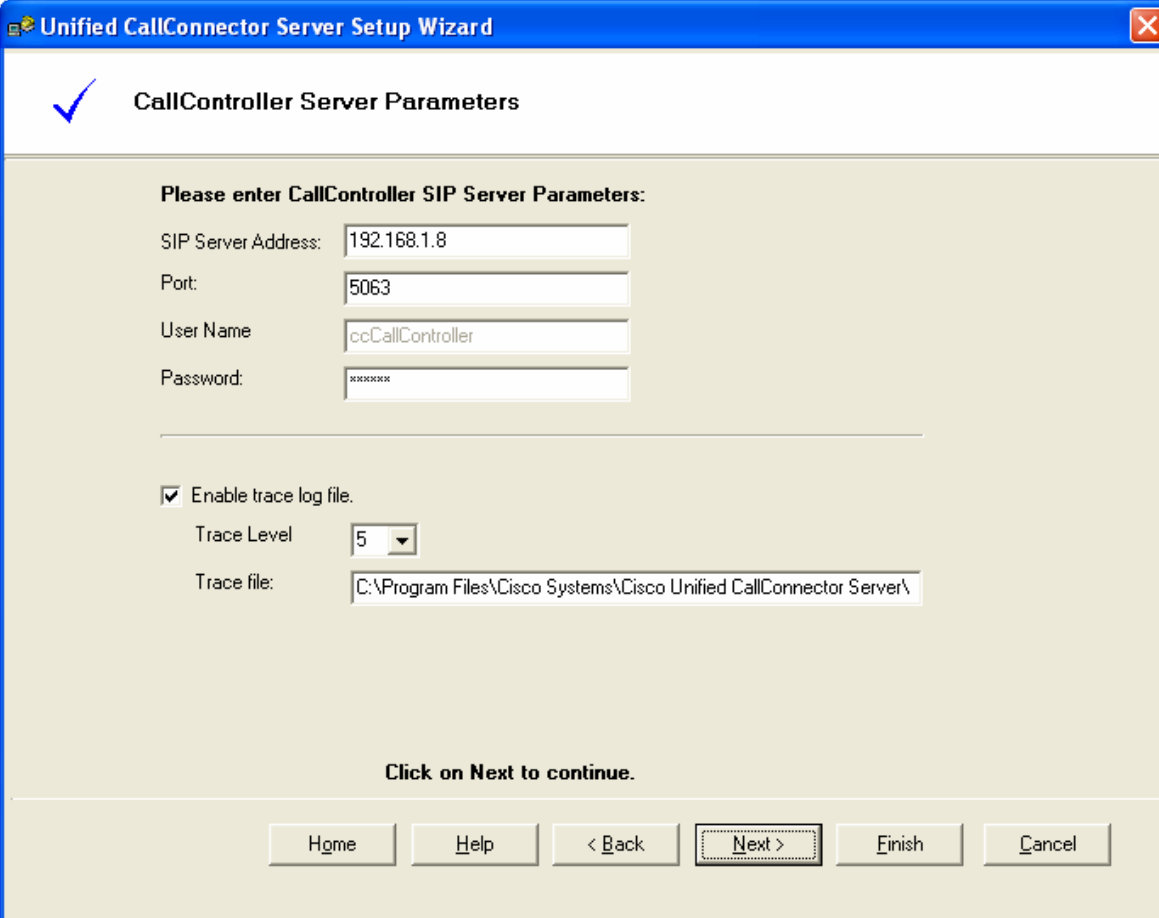
- See Chapter 5 – Configuration of the Cisco Unified CME router parameters for details of setting the RADIUS accounting messages.
- Verify that not other Radius servers are running on the computer as they might block access to the default Radius accounting port.

- If the Unified CallConnector Server is connected to multiple CME/UC500, then the RADIUS password and port must be the same on all the routers.

Setting up the CallController

The CallController Server connects to the Cisco Unified CME 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.
2. Obtain a list of the IP phones that are present on the Communication Cisco Unified CME router. This can be done manually or by using the automated Configuration Download feature of the Wizard.
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 Unified CallController users.
4. Verify that the selected phones can be accessed and controlled by the CallController Server.



The screenshot shows a Windows-style window titled "Unified CallConnector Server Setup Wizard". The window has a blue title bar with a close button (X) in the top right corner. Below the title bar, there is a white header area with a blue checkmark icon and the text "CallController Server Parameters". The main content area has a light beige background and contains the following elements:

- A section titled "Please enter CallController SIP Server Parameters:" followed by four input fields:
 - SIP Server Address: 192.168.1.8
 - Port: 5063
 - User Name: ccCallController
 - Password: xxxxxx
- A horizontal line separating the SIP parameters from the trace settings.
- A checkbox labeled "Enable trace log file." which is checked.
- A "Trace Level" dropdown menu set to "5".
- A "Trace file:" text box containing the path "C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\".
- A line of text: "Click on Next to continue."
- A row of buttons at the bottom: "Home", "Help", "< Back", "Next >" (highlighted with a dashed border), "Finish", and "Cancel".

SIP Communication Parameters

- SIP Server Address: This is the IP address or network address of the computer with the System SIP Server.
- Port: This is the port used by the Presence Server to receive messages. The default value is 5063. If this port is not available, then change this to a port available on the computer.
- Username: This is the well-known name of the CallController Server. This cannot be changed.
- Password: This password is used to authenticate the registration of the Presence Server. Enter the password. This can be any text or number string up to twelve characters in length.
- If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. This is checked at server startup only. By default the trace files are saved in the Trace Log folder under the Unified CallConnector Server.

Click on Next to continue.

Downloading IP Phone Configuration

This is an optional step provided to help make the installation easier. Information about the IP Phones that are to be controlled by the CallController Server can be entered manually. If the information is downloaded from the Cisco Unified CME router then you need to only select the required IP Phones from a list.

The Wizard uses the telnet protocol to download the IP Phone information. You will need a telnet account on the Cisco Unified CME router for this function.

To Download the Cisco Unified CME IP Phone information:

- Enter the CME IP Address: This is the IP address of the Cisco Unified CME router.
- Telnet User Name: This is the login user name for the telnet command line access to the Cisco Unified CME router. The exec level password is not required.
- Telnet Password: Telnet account password.
- Click on Start. The Wizard will log in to the Cisco Unified CME router and download the IP Phone information using the 'Show Ephone' command. This IP Phone information is saved in the cme.xml file in the Unified CallConnector Server folder.

Click on Next to continue.

Unified CallConnector Server Setup Wizard

Download Configuration Data From CME

Click on Start to re-load configuration data.

CME IP-Address: Telnet Password:

Telnet User Name: Exec Password:

Click on start to download data:

Status:

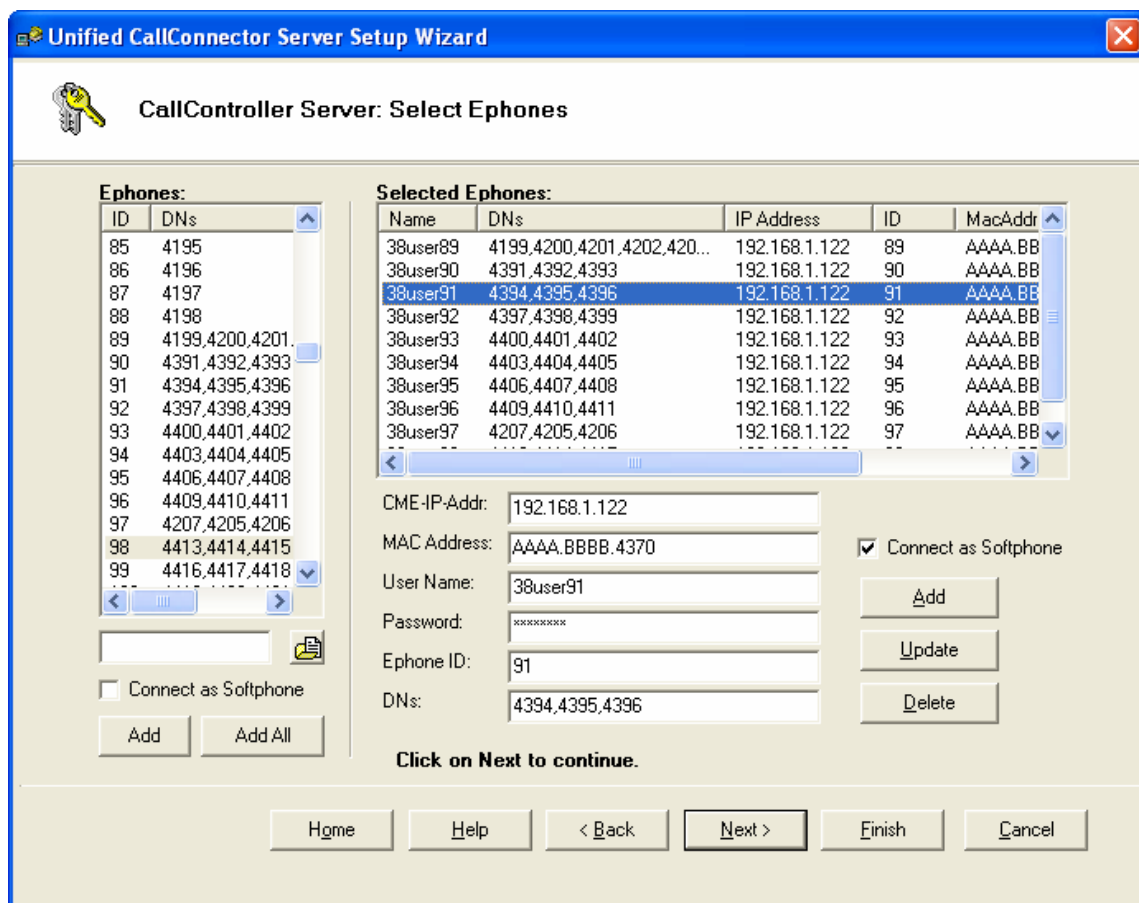
```
-->Username Entered :callcomm
c
allcomm
Password:
cc2800#
-->Entered show ephone
Telnet Succeeded! Connected to router: 192.168.1.121
Exec Level Success! Configuration file: cme.xml created.

Exiting Telnet session. Click on Next to continue.
```

Click on Next to continue.

NOTES:

1. The IP Phone configuration download does not require the privilege level access to the router.
2. The Cisco Unified CME router administrator can run the wizard and make the cme.xml file available to the Setup Wizard. This can be used in stead of the download as described in the next section.
3. All IP Phones that are to be controlled by the CallController Server need to have the ephone username and password provisioned on the Cisco Unified CME router.
4. The CallController Server supports both control and media termination mode of access to the Cisco Unified CME router. The control mode allows an existing IP Phone to be controlled from the user's desktop. The Media Termination mode is used for the Mobility Server lines only.



This window allows you to specify the IP Phone parameters. If you have downloaded the IP Phone configuration from the Cisco Unified CME router, then the phones for the CallController can be selected from this list.

Components of the Select Ephones Window

Ephones (All Available Ephones):

This table on the left displays the list of ephones downloaded from the Cisco Unified CME router. The first column is the Ephone ID and the second column lists the directory numbers on that Ephone. If you have not downloaded the configuration then this list will be empty. If you have a cme.xml file of a IP Phone configuration, then you can open this file by clicking on the browse button at the bottom of the Ephone list table. The Add and Add All buttons at the bottom of the Ephones table select the highlighted ephone or select all the ephones respectively.

Selected Ephones (Ephones Controlled by UCC Server):

This table lists the IP Phones that will be opened by the CallController Server. The table displays the username of the selected ephone, the directory numbers configured on that ephone, the IP address of the router, ID of the ephone. The fields at the bottom of the Selected Ephones table display the parameters of the ephone highlighted in the Selected Ephones table. These fields can also be used to manually enter or change the IP Phone information. The fields and buttons are described below:

Fields:

CME IP Address: IP Address of the Cisco Unified CME router.

MAC Address: This is the MAC Address of the ephone.

User Name: This is the username configured for that ephone in the Cisco Unified CME router.

Password: This is the password configured for the ephone.

Ephone ID: ID or number of the Ephone.

DNs: List of DNs configured on the ephone. This field is provided to distinguish between the ephones.

Buttons:

Connect as Softphone: Connect to the Cisco Unified CME as a softphone. These softphones are available for use only by the Automation Server applications.

Add: The current values of the ephone parameters are used to add a new entry in the Selected Ephone table.

Update: The current values of the ephone parameters are used to update the highlighted entry in the Selected Ephone table.

Delete: The highlighted entry in the Selected Ephone table is deleted.

To Select an IP Phone for control by the UCC Server

- Download the ephone list from the CME/UC500.
- Click on an entry in the Ephones table. It will be highlighted.
- Click on the Add button at the bottom of the Ephones table. The highlighted entry will be added to the Selected Ephones list. You can press the Shift or Control keys to select a range of or several ephones to add at one time.
- To select all the ephones in the Ephones list, click on Select All button.

To Select an IP Phone to connect as a softphone

- Download the ephone list from the CME/UC500.
- Click on an entry in the Ephones table. It will be highlighted.
- Click and check the 'Connect as Softphone' option.
- Click on the Add button at the bottom of the Ephones table. The highlighted entry will be added to the Selected Ephones list. You can press the Shift or Control keys to select a range of or several ephones to add at one time.
- To select all the ephones in the Ephones list, click on Select All button.
- If the selected entry in the Selected Ephones list does not show 'Connect as Softphone' checked beside the MAC Address field, then click on that check box and then Update.

NOTE: The 'Connect as Softphone' option is required by the UCC Mobility Service. Ephones configured in this manner are not available to the UCC users.

To Manually Add IP Phones:

- Enter the User Name, Password, MAC-Address, CME IP Address in the fields.
- Click on the Add button at the bottom of the Ephones table. A new entry will be added to the Selected Ephones list.

To Delete an IP Phones:

- Click on the Ephone that you want to remove in the Selected Ephones table.
- Click on the Delete button at the bottom of the Ephones table. The highlighted entry in the Selected Ephones list will be deleted.

Click on Next to continue to with the CallController Configuration.

Verify Connection to Ephone

This window allows you to verify that the CallController can connect to the IP Phone that you have selected or configured. The verification step is optional and provides a visual confirmation that a) the ephone exists and can be connected for control purposes b) the parameters configured for the ephone are connect.

Unified CallConnector Server Setup Wizard

CallController Server: Verify Connection to Ephone

Select an IP Phone and click on Start to verify connection:

ID	DNs
89	4199,4200,4201
90	4391,4392,4393
91	4394,4395,4396
92	4397,4398,4399
93	4400,4401,4402
94	4403,4404,4405
95	4406,4407,4408
96	4409,4410,4411
97	4207,4205,4206
98	4413,4414,4415

Device ID/MAC: User Name:

CME IP-Address: Password:

Verify Registration and IP-Phone Configuration

Status:

```
Found line : lineInst 6 dirNumber
Found line : lineInst 5 dirNumber
Found line : lineInst 4 dirNumber
Found line : lineInst 3 dirNumber 4402 displayName 4402
Found line : lineInst 2 dirNumber 4401 displayName 4401
Found line : lineInst 1 dirNumber 4400 displayName 4400
```

Verify registration and IP-Phone configuration completed.

Click on Next to continue.

Components of the Select Ephones Window

Selected Ephones:

This table lists the IP Phones that will be opened by the CallController Server. The table displays the ID of the ephone and the directory numbers configured on that ephone. When you click on an ephone in this list the key parameters are displayed in the field to the right. The fields and buttons are described below:

Fields:

User Name: This is the username configured for that ephone in the Cisco Unified CME router.

Password: This is the password configured for the ephone.

MAC Address: This is the MAC Address of the ephone.

CME IP Address: IP Address of the Cisco Unified CME router.

Buttons:

Start: Starts the connection process by registering to this ephone.

Stop: Terminates the registration process.

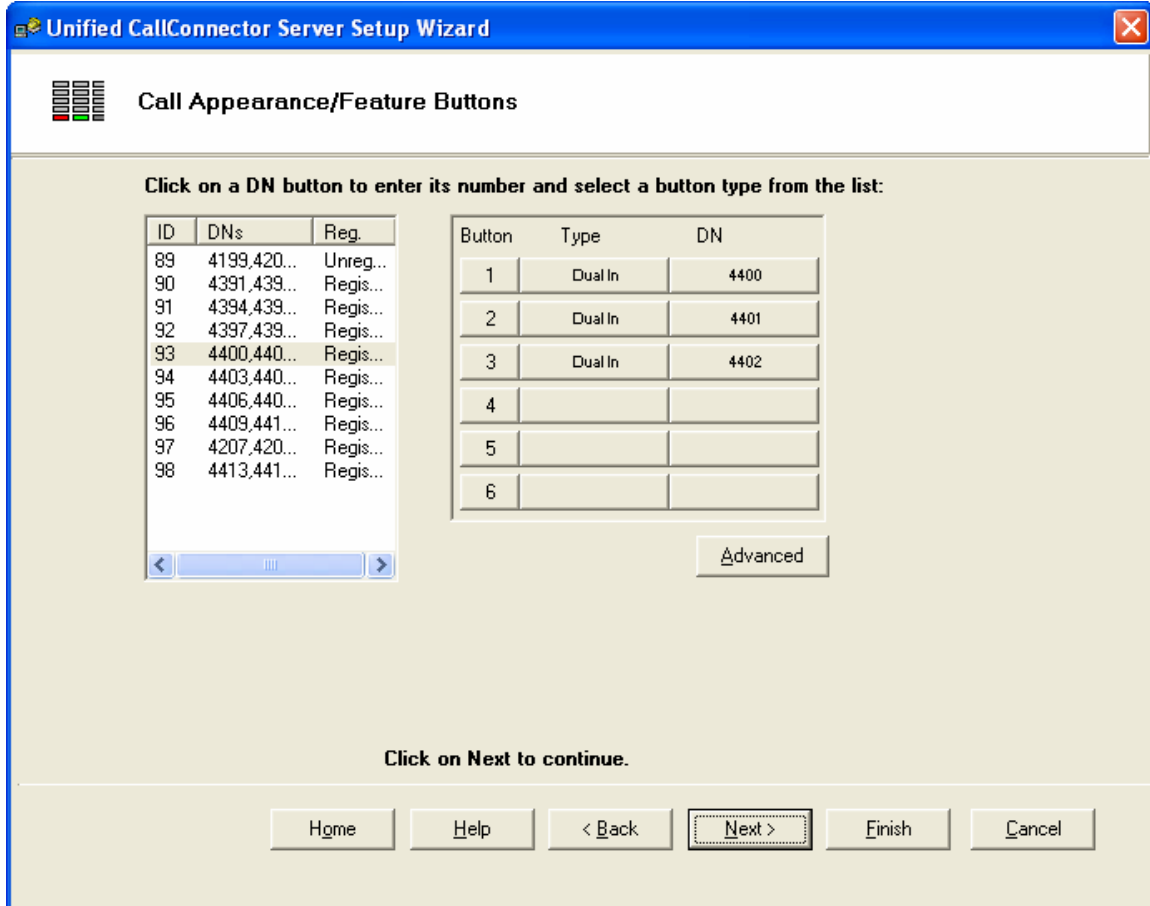
Troubleshoot: Opens the troubleshooting help file.

To Verify the connection to an IP Phone:

- Click on an entry in the Selected Ephones table. It will be highlighted and the connection parameters will be displayed on the fields to the right.
- Click on the Start button.
- The Wizard will attempt to register to the Cisco Unified CME router with the specified parameters and display the results.
- If the connection was successful, then the line number and display names for each extension on the ephone will be listed.
- You can click on each ephone and verify connection to the device.

Click on Next to continue.

For each selected ephone, this window displays the extensions defined on the buttons with their number and DN-type. The DN-types can be dual-line, single-line, speed number or a feature button. By default all DN-Types are set to Dual-Line. You can click on the button to change the button type.



The screenshot shows the 'Call Appearance/Feature Buttons' window in the Unified CallConnector Server Setup Wizard. The window has a blue title bar and a red close button. Below the title bar is a header area with a small icon and the text 'Call Appearance/Feature Buttons'. The main area contains a list of buttons and a table of button configurations. The list of buttons is on the left, and the table is on the right. The table has three columns: Button, Type, and DN. The buttons are numbered 1 through 6. The Type column shows 'Dual In' for buttons 1, 2, and 3, and is empty for buttons 4, 5, and 6. The DN column shows '4400', '4401', and '4402' for buttons 1, 2, and 3, and is empty for buttons 4, 5, and 6. Below the table is an 'Advanced' button. At the bottom of the window are navigation buttons: Home, Help, < Back, Next >, Finish, and Cancel. The 'Next >' button is highlighted.

Unified CallConnector Server Setup Wizard

Call Appearance/Feature Buttons

Click on a DN button to enter its number and select a button type from the list:

ID	DNs	Reg.
89	4199,420...	Unreg...
90	4391,439...	Regis...
91	4394,439...	Regis...
92	4397,439...	Regis...
93	4400,440...	Regis...
94	4403,440...	Regis...
95	4406,440...	Regis...
96	4409,441...	Regis...
97	4207,420...	Regis...
98	4413,441...	Regis...

Button	Type	DN
1	Dual In	4400
2	Dual In	4401
3	Dual In	4402
4		
5		
6		

Advanced

Click on Next to continue.

Home Help < Back Next > Finish Cancel

NOTES:

This version of the Unified CallConnector Server does not support dual line DN. If you have two calls presented concurrently at the one button, the last update is displayed in the client user interfaces.

Connecting to Multiple Communications Manager Systems

The Unified CallConnector Server can be connected to multiple Cisco Unified CME routers or Unified Communication 500 systems. Please verify the system configuration with your Channel Partner.

To Add Ephones from Additional CME Systems

- Return to the Download Configuration Data from CME window.
- Enter the connection information for the CME that you want to connect to.
- Enter the Telnet user name and password.
- Click on start to download the ephone information from the new router.
- Run through the steps as described above to add in additional ephones that are to be controlled by the Unified Connector Server

This completes the configuration for the CallController Server for one Cisco Unified CME router.

Click on Next to continue with the user administration.

Configuring the Automation/Mobility Server

The Automation Server executes user and administrator set rules or automatic functions. It uses the UCC Server applications to perform actions based on custom rules setup by the users. To setup the Automation, you need to configure the following information:

- Specify the SIP communication parameters for Automation Server.
- Setup the configuration parameters for the automaton or 'services' that are to be performed by the Automation Server. The initial service is the Mobility Single Number Reach function.
- Enter the serial number for the Automation/Mobility Service.
- Verify that the selected phones can be accessed and controlled by the Automation Server.

The screenshot shows the 'Automation/Mobility Server Parameters' window of the 'Unified CallConnector Server Setup Wizard'. The window has a blue title bar and a white header area with a checkmark icon and the title. The main content area is light beige and contains the following fields and controls:

- Please enter Mobilty SIP Server Parameters:**
 - SIP Server Address:** Text box containing '192.168.1.8'.
 - Port:** Text box containing '5072' with a range '(5072 to 5077)' to its right.
 - User Name:** Text box containing 'ccAutomationServer'.
 - Password:** Text box containing 'xxxxxx'.
- ☒ **Enable trace log file.**
- Trace Level:** A dropdown menu currently showing '5'.
- Trace file:** Text box containing 'C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\'.

Below the fields, the text 'Click on Next to continue.' is displayed. At the bottom, there is a row of buttons: 'Home', 'Help', '< Back', 'Next >' (which is highlighted with a dashed border), 'Finish', and 'Cancel'.

SIP Communication Parameters

- **SIP Server Address:** This is the IP address or network address of the computer with the System SIP Server.
- **Port:** The Automation Server uses multiple ports. The value is the starting port address. The next four consecutive ports are also used by the Automation

Server. This is the port used by the Presence Server to receive messages. The default value is 5072 through 5077. If this port range is not available, then change this to a port available on the computer.

- Username: This is the well-known name of the Automation Server. This cannot be changed.
- Password: This password is used to authenticate the registration of the Automation Server with the other system components. Enter the password. This can be any text or number string up to twelve characters in length.
- If asked by Cisco Technical Support, enable the debug trace logging and set the Trace level to the requested level. This is checked at server startup only. By default the trace files are saved in the Trace Log folder under the Unified CallConnector Server.

Click on Next to continue.

Mobility Service Options

The Mobility Service Options setup the configurable parameters for the Single Number Reach feature. This window also allows you to change the password for the system account 'automationuser' and enter the serial number for the Mobility Service.

Unified CallConnector Server Setup Wizard

Automation Mobility Service

Options:

☒ Use Hardware conferencing ☐ Allow mid-call to access features

☒ Receive connect on remote answer ☒ Same Router With Dn

Maximum number of calls to locate user:

Timeout for user answer (Seconds):

Maximum number of SNR session:

Transfer to voice mail method:

Voice mail pilot number: Prefix:

Automation User Account

Login Name: Password:

Automation/Mobility Server Serial Number

Serial Number:

Click on Next to continue.

Entering Mobility Service Serial Number

The Unified CallConnector Mobility Service serial number is entered and updated from the Automation Mobility Service window. By default the starting serial number is set to 'trial'. This can be converted to a licensed version by entering a valid Server Serial Number.

To Convert from Trial to Licensed Version:

- Open the Server Setup Wizard to the Version Information page.
- Delete the TRIAL_UCCS-xxxxxx trial serial number, enter the server serial number and click on update.
- You will need to exit and restart the Setup Wizard to activate the serial number with the Unified CallConnector License Server.

Mobility Service Parameters

Fields:

Use Hardware Conferencing: The Cisco Unified CME supports two basic methods of conferencing – hardware using DSPs and software conference. The conferencing method can be determined from the Telephony-Service section of the router configuration. The UCC Mobility Service supports both these conferencing methods but need to know the conference setting of the router. 'Use Hardware Conferencing' should be checked if the Cisco Unified CME is configured for hardware conferencing otherwise this option should be unchecked.

Notes: 1. If hardware conferencing is being used, then Ad-Hoc conferencing should be configured for the Mobility Service.
2. The Mobility Service will not work correctly if the conferencing setting does not match the router configuration.

Receive connect on Remote Answer: When an outgoing call is made to a PSTN number from an IP Phone, the call can get connected either if the CME immediately connects (analog gateways) or when the PSTN phone answers (as in the case of digital PSTN gateways such as a T-1 or BRI lines). Check this option 'Receive connect on Remote Answer' if the call is connected when the PSTN phone answers. This option determines the start time and duration of the "request password prompt".

Allow Mid-Call Features: Once the caller and the user have been connected as a part of the Single Number Reach feature, the Mobility Service provides an option to stay connected to the call and allow the user to access Cisco Unified CME features such as transfer or conference. The 'Allow Mid-Call Feature' enables the administrator to make this feature available on their system.

Notes: 1. The Phase I Mobility Service does not support Mid-Call features.

2. Mid Call features are only available with the hardware conferencing option.
3. Mid-Call features occupy the mobility ephones and the conferencing function for the entire duration of the call. The resources available on the router need to be available to support this function.

Same Router with DN: This option indicates to the Mobility Service that the ephone for the mobility service should belong to the router that has the specified DN. This option should be checked by default.

Maximum Number of calls to locate user: This is the number of simultaneous calls allowed per single number reach session to dial out to the user. The Mobility Service allows the administrator to set the maximum number of outgoing calls that can be made for each single number reach operation. This can be set from one to a maximum of four.

Notes:

1. The Phase I Mobility Service supports one outgoing call to locate the user.
2. Each outgoing call requires a mobility ephone to place the call. So if you want to set the maximum number of outgoing calls to locate a user to two then that user's single number reach operation could use up to three ephones. The resources available on the router need to be available to support this function.

Duration of user answer timeout: This parameter specifies the maximum time the Mobility Service should wait trying to locate the user. On timeout the caller is sent to the user's voice mail box.

Transfer to Voice Mail: The UCC Mobility Service supports three methods for transferring a call to the Cisco Unified Unity voice mail system. The call is transferred to the user's greeting. These three methods are – Direct Transfer to Voice Mail box using a Unity Auto-attendant script, Transfer to the alternate 'E164 mailbox number' and use the 'Transfer to Voice Mail soft key.

Using Transfer Script: This is a Cisco Unity Express (CUE) script that prompts for a voice mail box number. Once a valid mailbox number is entered, CUE plays the user's greeting and the voice message is saved in the user's mailbox.

E164 Transfer: The Cisco Unity Express supports the provisioning of a Primary E 164 number (E164 number) for each CUE voice mailbox. Calls placed to this number are sent directly to the user's greeting and allows a call to be transferred directly to that mailbox. This requires setting up a dial-peer with a call forward-all to the main CUE number.

Direct Transfer Soft key: Not yet generally available. This feature is a soft key that allows a call to be transferred to CUE and receive a mailbox entry prompt.

Automation User Account: The Mobility Services use this system user account to log in to the UCC Server. The Automation User name is fixed. You can only change the password.


Automation/Mobility Server Serial Number: The Mobility Service is a licensed service and required a serial number. This number is entered in this field and is applied when the Update button is pressed. The next time the Setup Wizard is run, it will present an activation window to register the serial number with the License Server.

Holiday Schedule

The Automation/Mobility supports setting up rules conditions that apply for work days or holidays. The Holiday Schedule window allows you to setup the dates for the days that are holidays.

The screenshot shows the 'Unified CallConnector Server Setup Wizard' window with the 'Holiday Schedule' tab selected. The window has a blue title bar and a close button in the top right corner. Below the title bar, there is a checkmark icon and the text 'Holiday Schedule'. The main area contains a table with the heading 'Holidays:'. The table has two columns: 'Date' and 'Description'. The first row shows '7/4/2007' in the 'Date' column and 'July 4' in the 'Description' column. To the right of the table, there are two text input fields: 'Date:' with the value '7/4/2007' and a calendar icon to its right, and 'Description:' with the value 'July 4'. Below these fields are four buttons: 'New', 'Add', 'Update', and 'Delete'. At the bottom of the window, there is a row of buttons: 'Home', 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a dashed border. Above the bottom row of buttons, the text 'Click on Next to continue.' is displayed.

Date	Description
7/4/2007	July 4

Date: 7/4/2007 

Description: July 4

New Add Update Delete

Click on Next to continue.

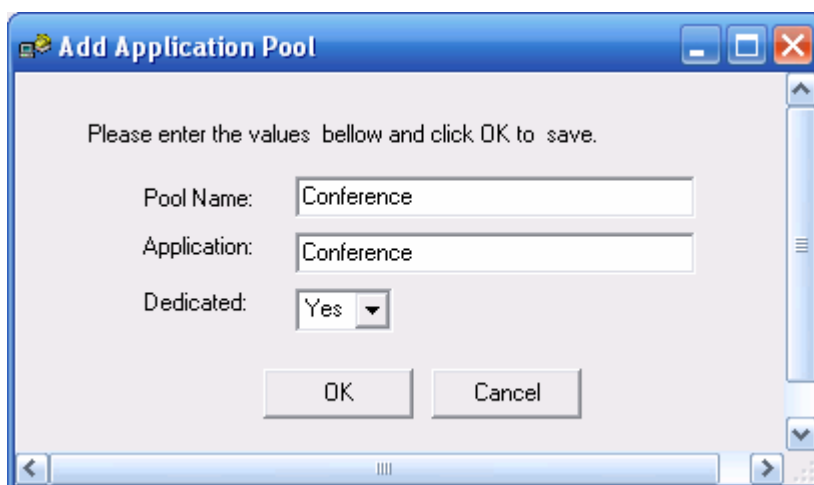
Home Help < Back Next > Finish Cancel

The New, Add, Update and Delete buttons allow you to change and insert the holiday description and dates. To select the date click on the calendar icon.

Note: The Holiday Schedule is not used for the Phase I Mobility Service.

Setting up Ephone Pools

The Unified CallConnector Automation Server can host a number of automation applications. The automation applications can have ephone pools assigned. Each pool is configured from the wizard with four attributes – pool name, associated application, whether it has dedicated (ephones with shared DNs) and a list of ephones.



To Create a New Ephone Pool:

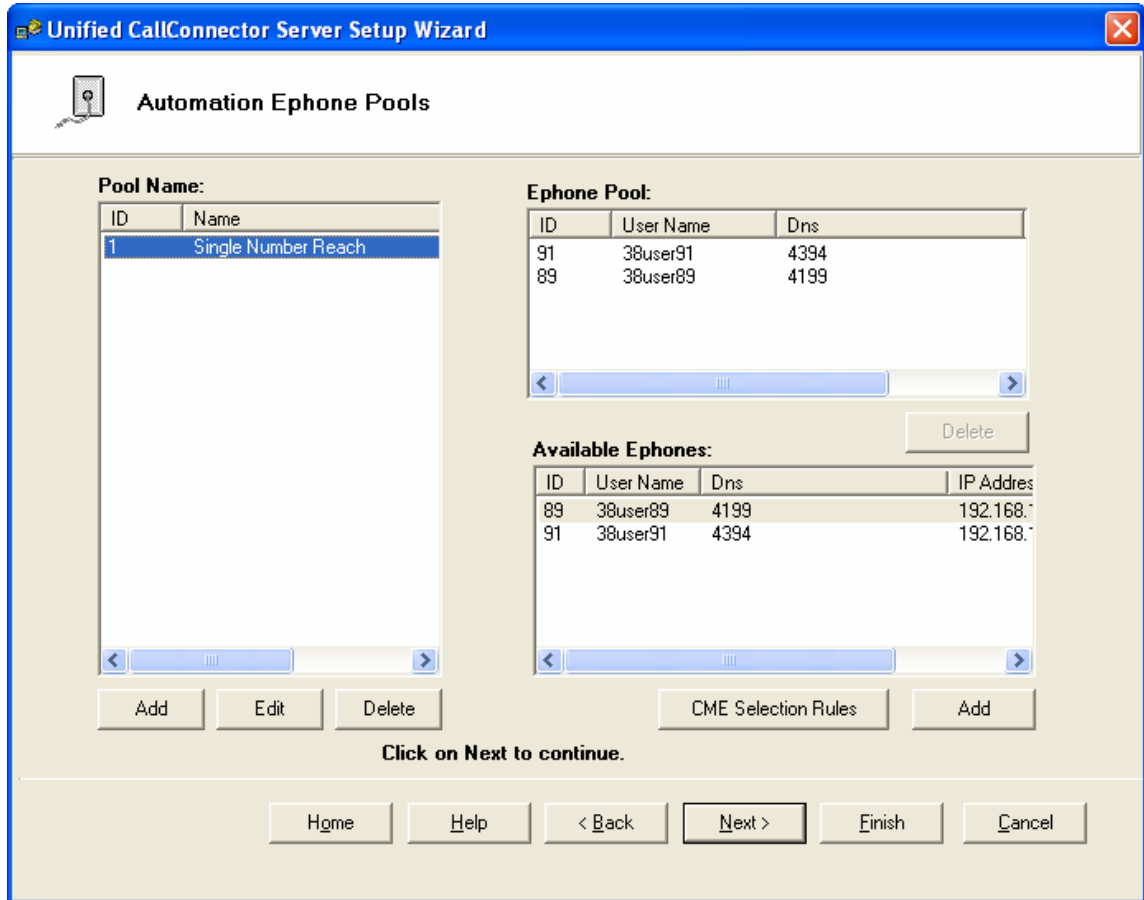
- Open the Server Setup Wizard to the Automation Ephone Pools page.
- Click on Add button. The Add Application Pool window will open as shown above.
- Enter the Pool name, application name and select 'Yes' if it has ephones with shared DNs.
- Click on OK to apply the changes otherwise Cancel. Setup ephone pools.

Once the Ephone Pool has been created, the ephones that have been configured in the CallController Server as 'Connect as Softphone' will be displayed in the available ephones list can be added into the newly created pool.

From the available ephones list add the ephones for this pool. Only the 'softphone' ephones are displayed in this list. If you are connecting the UCC Mobility Service to multiple routers, then you will need to configure ephones from each of those routers.

To Delete or Edit Ephone Pools:

- Click on the Delete button to remove a Ephone Pool.
- Click on the Edit button to bring up the Application Pools window to edit the Pool attributes..



Cisco Unified CME Selection Parameters

In multiple CME environments, the call pickup feature requires a local ephone to pick up the ringing call. For each CME you need to configure the ephones for the mobility service. The CME selection rules specify a range of DN that are associated with each CME. The Mobility Server uses this information to select a ephone that belongs to CME to initiate the Single Number Reach feature.

To Specify CME Selection Rules:

You must setup the CME Selection Rules even for single router configurations.

- Click on the CME Selection Rules button in the Automation Ephone Pools window. It will display the Update CME Selection Rules window.
- This window lets you specify the extension number ranges available with each router.
- Enter the starting and ending extension numbers from that CME router and click on Add.
- If you are changing existing parameters, then click on Update.

- Check Hardware Conference if the router is configured for DSP-based hardware conferencing.

Update CME Selection Rules

Specify extension number range for each CME:

CME IP Address: 192.168.1.122

Start	End
4000	4999

Start: 4000 End: 4999

☒ Use Hardware Conference

Voice Mail Transfer: TransferUsingScript

Pilot Number: 6000

Prefix: 5

Add Update Delete OK Cancel

Transfer to Voice Mail: The UCC Mobility Service supports three methods for transferring a call to the Cisco Unified Unity voice mail system. The call is transferred to the user's greeting. These three methods are – Direct Transfer to Voice Mail box using a Unity Auto-attendant script, Transfer to the alternate 'E164 mailbox number' and use the 'Transfer to Voice Mail soft key.

Using Transfer Script: This is a Cisco Unity Express (CUE) script that prompts for a voice mail box number. Once a valid mailbox number is entered, CUE plays the user's greeting and the voice message is saved in the user's mailbox.

E164 Transfer: The Cisco Unity Express supports the provisioning of a Primary E 164 number (E164 number) for each CUE voice mailbox. Calls placed to this number are send directly to the user's greeting and allows a call to be transferred directly to that mailbox. This requires setting up a dial-peer with a call forward-all to the main CUE number.

Direct Transfer Soft key: Not yet generally available. This feature is a soft key that allows a call to be transferred to CUE and receive a mailbox entry prompt.

Creating Group List:

You can define a set of groups or department. A list of common group names are pre-installed. These can be used, modified or deleted based on your organization. Each Unified CallConnector user has to be placed within a group or the system will place them in the Default group.

Unified CallConnector Server Setup Wizard

Data Configuration - Update Group

Groups:

Group ID	Name
1	Administration
6	Customer support
13	Default
9	Development
4	Engineering
14	Executive
11	Field Support
16	Finance
5	Manufacturing
3	Marketing
15	Product Manage...
2	Sales

Group ID: 1
Group Name: Administration

New Add Update Delete

Restricted Groups:

Name

Delete

Available Groups:

Name
Customer support
Default
Development
Engineering
Executive
Field Support
Finance
Manufacturing
Marketing

Add

Click on next to continue.

Home Help < Back Next > Finish Cancel

Components of the Group Window

Groups:

This table lists the groups that have been defined for use with the Unified CallConnector. The table displays the ID of the Group and the Group Name. The ID is an internally used parameter and cannot be changed.

Restricted Groups:

This table lists the groups whose users cannot view the presence status of the members of the Group currently selected in the Groups table.

Available Groups:

This table lists the groups whose users can view the presence status of the members of the Group currently selected in the Groups table.

Group Buttons (at the bottom of the Groups table):

Refresh: Re-reads the group information from the database and displays it in the table.

Browse: Allows you to open and import the group-list from the GroupsTable.xml file. This file is saved in the Data folder under Unified CallConnector Server.

Fields (fields and buttons to the right of the Groups table):

Group ID: This is the ID number of the group and is assigned automatically by the system.

Group Name: This is the name of the group.

Buttons:

New: Clears the Group name to allow you to add an new entry. You will need to click on Add to apply.

Add: Creates a new entry with the group name specified in the field above.

Update: Changes the name of the currently selected group with the name in the group name field above.

Delete: Removes the currently selected group name. If any user was placed in this group then that association is changed to the default group.

Restricted Groups Buttons:

Delete: Removes the currently selected group in the Restricted Group to the Available Group.

Available Groups Buttons:

Add: Moves the currently selected group in the Available Group to the Restricted Group.

To Update an existing Group Name:

- Click on an entry in the Groups table. It will be highlighted.
- Modify the name in the Group Name field
- Click on the Update button. The highlighted group name will be replaced with the new name entered in the Group Name field.

To Add a New Group:

- Enter the group name in the Group Name field.
- Click on the Add button. A new entry will be added to the Groups list.

To Delete a Group:

- Click on the Group name that you want to remove in the Groups table. This group name will be displayed in the fields to the right.
- Click on the Delete button. The highlighted entry in the Groups list will be deleted.

To Restrict Members of a Group from Viewing Status:

- In the Groups table, click on the Group Name to which you want to apply the access restrictions.
- The Available Group table will display the Groups whose members can view the status of the users in the Group highlighted in the Groups table.
- The Restricted Group table will display the Groups whose members cannot view the status of the users in the Group highlighted in the Groups table.
- Click on the Group name that you want to restrict in the Available Groups table. Then click on Add.
- This Group will be moved to the Restricted Groups list.

To Allow Members of a Group Access to Viewing Status:

- In the Groups table, click on the Group Name to which you want to apply the access restrictions.
- The Available Group table will display the Groups whose members can view the status of the users in the Group highlighted in the Groups table.
- The Restricted Group table will display the Groups whose members cannot view the status of the users in the Group highlighted in the Groups table.
- Click on the Group name that you want to allow in the Restricted Groups table. Then click on Delete.
- This Group will be moved to the Available Groups list.

Click on Next to continue to with the User Configuration.

Managing Users:

The Unified CallConnector users need an account to be setup with login name and password to connect to the UCC Serve. The Server Wizard Managing Users window allows you to add, delete and update the Unified CallConnector user information. It allows you to perform the following management functions:

- Add a Unified CallConnector user. Assign the user login name and password.
- Delete a user. This removes the user from the system and will reject login attempts with on that account.
- Change the contact information of the UCC user. Note - users are also able to update their contact information from the Options window.
- Change the user login name and password.
- Assign the user type and the user's group.
- Import the user list from a xml file.

Unified CallConnector Server Setup Wizard

Data Configuration - User Table

User Table:		Users Default:		Users Contacts:	
User ID	Display Name	User ID:		Business:	5010
183	John Smith	First Name:	John	Business2:	512-635-5423
		Last Name:	Smith	Home:	512-555-1212
		Login Name:	john	Mobile:	635-445-2563
		Password:	xxxxxx	Email:	jsmith@abc-company.com
		Company:	ABC Company	SMS:	6354452563@mobile.com
		User Type:	User	IM:	john
		Group:	Engineering	Voicemail:	5010
		Serial No:	UCCC-0100-xxxxxxxxxx	Tel Psw:	5010

Refresh

New Add **Update** Delete

Click on Next to continue.

Home Help < Back Next > Finish Cancel

Components of the User Administration Window

User Table:

This table lists the user accounts that have been defined for the Unified CallConnector. Only these users will be able to login to the Unified CallConnector Server. The table displays the User ID of the user and the User Display Name. The ID is an internally used parameter and cannot be changed.

User Table Buttons (at the bottom of the User Table):

Refresh:	Re-reads the user information from the database and displays it in the table.
Browse:	Allows you to open and import the user-list from the Users Info.xml file. An example file is saved in the Data folder under Unified CallConnector Server.

The fields and buttons to the right of the Users Table are described below:

Fields (to the right of the Users Table):

User ID:	This is the ID number of the user and is assigned automatically by the system.
First Name:	This is the first name of the user.
Last Name:	This is the last or family name of the user.
Login Name:	This name is used by the user to login to the Unified CallConnector Server.
Password:	The password to be used to login.
Company:	User's organization or company name.
User Type:	Three types of user accounts are supported.
User:	A standard Unified CallConnector user
Manager:	This user, in addition to the standard user functions, is able to change the status of the other users in the group for which they are the manager.
Administrator:	An administrator is able to change system wide configuration data.
Serial Number:	This is the client serial number. It is provided to help with the license number administration. Each user's serial number can also be sent out to the user with the email notification feature of the Server Wizard.
Business:	The work or business telephone number. This would be the primary number provisioned on the user's IP Phone.
Business2:	A second work or business telephone number. (In configurations where the dual-line DN are set to an extension number and the secondary to a DID number, this fields can be used to enter the DID number)
Home:	The home telephone number.
Mobile:	The mobile or cellular telephone number.
Email:	User's email address.

SMS:	User's SMS address. This is typically the mobile-number@service-provider.com
IM:	Instant Message address. This is the login name of the user.
Group:	This is the name of the group the user belongs to.
Voice Mailbox:	The user's voice mailbox number
Tel Password:	This is the password to be entered to accept Single Number Reach calls.

Buttons (to the right of the Users Table):

New:	Clears the user information fields to allow data for a new user to be entered. You need to click on Add to apply the change.
Add:	Creates a new user account with the user parameters specified in the fields above.
Update:	Changes any changes to the currently selected user's information.
Delete:	Removes the currently selected user account.

To Update an existing User Account :

- Click on an entry in the User Table. It will be highlighted.
- Modify the user parameters in the fields to the right.
- Click on the Update button. The highlighted user account information will be replaced with the information entered or changed.

To Add a New User:

- Click on the New button to clear the information in the User Parameter fields.
- Enter the user information in the User Parameter fields.
- Click on the Add button. A new entry will be added to the User Table.

To Delete a User Account:

- Click on the User name that you want to remove in the User Table. This user information will be displayed in the fields to the right.
- Click on the Delete button. The highlighted entry in the User Table will be deleted.

Click on Next to continue to with the User Configuration.

Adding Phones to Users

The User's Phone Window displays three tables – User List, Available Phone List and the User's Phone.

- Users -- This table displays all the users configured on the Unified CallConnector Server.
- User's Phones - For the user highlighted in the Users table, this table displays the phone(s) that are associated with and can be controlled by the user. This is currently restricted to one phone.
- Phones -- This table displays all the phones that have been configured for the Unified CallConnector. These phones can be controlled from the Unified CallConnector clients.

The screenshot shows the 'Unified CallConnector Server Setup Wizard' window, specifically the 'Data Configuration - User Phones' step. The window has a blue title bar and a red close button. The main area is divided into three sections: 'Users:', 'Users Phones:', and 'Phones:'. The 'Users:' section contains a table with 'User ID' and 'Display Name' columns, showing one user with ID 183 and name John Smith. The 'Users Phones:' section contains a table with 'Phone ID' and 'Name' columns, showing one phone with ID 98 and name 38user98. The 'Phones:' section contains a table with 'Phone ID', 'Phone Name', and 'Number' columns, showing five phones with IDs 94 through 98. Below the 'Phones:' table is a checkbox labeled 'Update User Contact' which is checked, and an 'Add' button. At the bottom of the window, there is a 'Click on Next to continue.' instruction and a row of buttons: Home, Help, < Back, Next >, Finish, and Cancel.

User ID	Display Name
183	John Smith

Phone ID	Name
98	38user98

Phone ID	Phone Name	Number
94	38user94	4403
95	38user95	4406
96	38user96	4409
97	38user97	4207
98	38user98	4413

☒ Update User Contact

Click on Next to continue.

Home Help < Back Next > Finish Cancel

To Associate a Phone with User:

- Select the user by clicking on the user name entry in the User table.
- Click on the IP Phone that you want to have the user control in the Phones table. This entry will be highlighted.
- Click on the Add button to associate this phone with the selected user. The selected phone will be displayed in the User's Phone list.
- 'Update User Contact' checkbox automatically updates the Business phone number with the primary DN on the selected ephone.

Notes: 1. The current release of the Unified CallConnector clients only support a single IP Phone per user.

2. The same IP Phone can be associated with more than one user. However in this situation, all such users have ability to control the call.

To Delete a User's Phone:

- Select the user by clicking on the user name entry in the User table.
- Click on the users IP Phone that you want to delete in the User's Phones table. This entry will be highlighted.
- Click on the Delete button to remove this phone from the user. The selected phone entry will be deleted in the User's Phone list.

Click on Next to continue to Send Email Notifications or Report Problems.

Sending Email Notifications

The Server Wizard provides a facility to send email messages to the Unified CallConnector users. This email notification facility can be used to send messages to selected users or to all the users.

The Email Notification feature allows you to automatically append the following information with the email:

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 message. Each user is send only their login information.

Attach Default Configuration File. The Unified 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.

Quick Reference. This option allow you to attach notes or other documents in the notification email to the user.

The screenshot shows the 'Email Users' window of the 'Unified CallConnector Server Setup Wizard'. The window has a blue title bar and a standard Windows XP-style interface. On the left, under the 'Users:' heading, there is a table with two columns: 'Display Name' and 'Email'. One user, 'John Smith' with email 'jsmith@abc-company.c...', is listed and selected with a checkmark. Below the table are 'Clear All' and 'Select All' buttons. On the right, under the heading 'Please select the email information from the following options:', there is a 'Subject' field containing 'Unified CallConnector Installation Instructions'. Below this is a large text area containing a message template: 'Hi', 'Use the link below to install the Unified CallConnector client. Your user name and password are given below.', 'Save the attached configuration file to the desktop and then run the install. This will automatically read all the installation parameters from the file.', and 'Please call me if you have any questions.' Below the text area are three checkboxes: 'Append Login Information.' (unchecked), 'Send Default Configuration File' (checked), and 'Send Quick Reference' (unchecked). To the right of these checkboxes are three buttons: 'Advanced Configurations', 'Email Cofig', and 'Send Email'. At the bottom of the window, there is a 'Click on Next to continue.' instruction and a row of navigation buttons: 'Home', 'Help', '< Back', 'Next >', 'Finish' (highlighted with a dashed border), and 'Cancel'.

Display Name	Email
<input checked="" type="checkbox"/> John Smith	jsmith@abc-company.c...

Subject: Unified CallConnector Installation Instructions

Hi

Use the link below to install the Unified CallConnector client. Your user name and password are given below.

Save the attached configuration file to the desktop and then run the install. This will automatically read all the installation parameters from the file.

Please call me if you have any questions.

☐ Append Login Information.

☒ Send Default Configuration File

☐ Send Quick Reference

Advanced Configurations

Email Cofig

Send Email

Click on Next to continue.

Home Help < Back Next > Finish Cancel

Components of the Email Notification Window

User List:

This table displays a lists of the Unified CallConnector users and their email addresses. The check box beside each user allows you to select that user to receive the email message.

Subject: Email subject text for the notification message.

Message Body: Text of the email to be sent to the users.

Buttons:

- | | |
|-----------------------------|---|
| Clear All: | Clears all the selections in the User List table. |
| Select All: | Selects all the users in the User List table to receive the email message |
| Append Login Information: | Automatically adds the user's login name, password and serial number in the email message. |
| Default Configuration File: | Attaches the administrator customized configuration file to the email message. |
| Advanced Configuration: | Opens the configuration file to allow site specific values to be entered. |
| Quick Reference: | Allows you to attach a selected file such as a Quick Reference document to be sent to the user. |
| Email Config: | Opens a window for setting the email account information. |
| Send Email: | Sends email to the selected users. |

To Send the Users a Notification Email Message:

- Select the users that you want to send the email message. Click on each user or click on Select All to select all the users.
- Enter the subject and email text.
- Click on the optional information that you want to attach with the email message.
- Click on Send Email to send the message.

To Setup the Email Account:

- Click on the Email Config button in the Send Email Notification window.
- Enter the SMTP email server information and the account you want to use to send the email messages.
- Click on OK to save the information.

The screenshot shows a Windows-style dialog box titled "Unified CallConnector Server Setup Wizard" with a red close button in the top right corner. The main content area is titled "Email Configurations: Smtip Settings". It contains several input fields and a checkbox. The "Smtip Server:" field is set to "smtp.1and1.com". The "Port" field is set to "25". There is a checked checkbox labeled "Authentication Required". Below this, the "Name:" field is set to "John Smith", the "Email Account:" field is set to "jsmith@cisco.com", and the "Password:" field is filled with "xxxxxxxxxx". At the bottom of the dialog are two buttons: "OK" and "Cancel".

Field	Value
Smtip Server:	smtp.1and1.com
Port	25
Authentication Required	<input checked="" type="checkbox"/>
Name:	John Smith
Email Account:	jsmith@cisco.com
Password:	xxxxxxxxxx

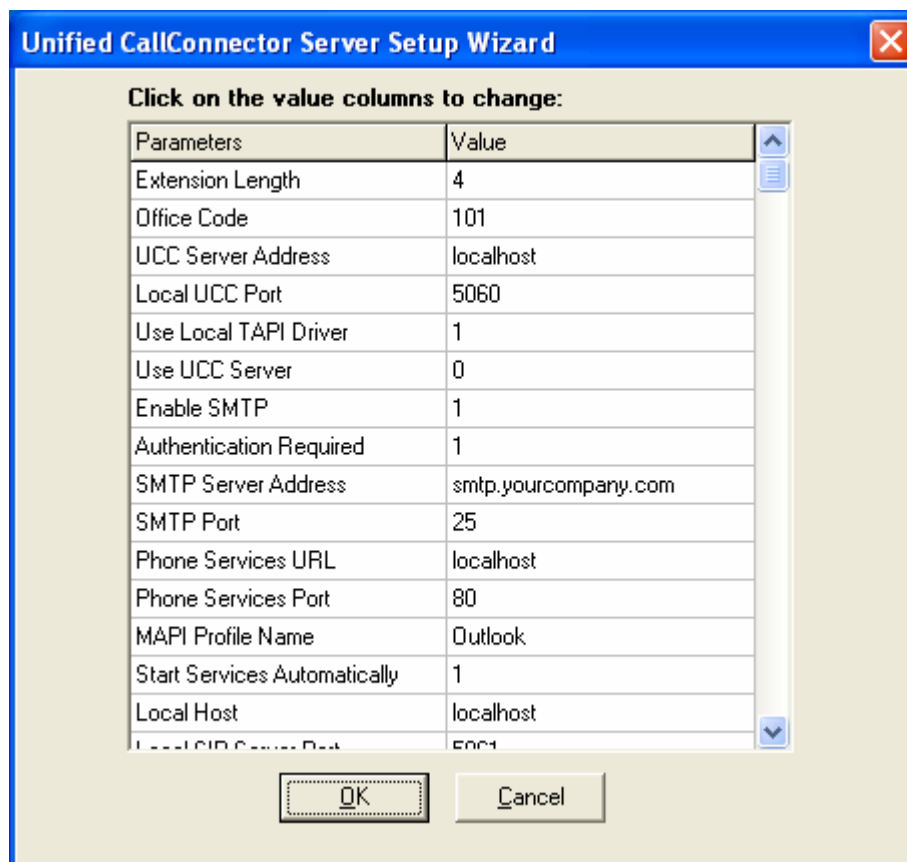
Advanced Configuration Parameters

The Advanced Configuration Parameters 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 UCC client configuration data can be sent to the user via email. This can simplify the UCC client installation as most of the installation parameters can be read from this file by the install program.

When the client install is run, it looks for this configuration xml file in the user's desktop.

The Configuration parameters that can be customized are described below:



Click on the value columns to change:

Parameters	Value
Extension Length	4
Office Code	101
UCC Server Address	localhost
Local UCC Port	5060
Use Local TAPI Driver	1
Use UCC Server	0
Enable SMTP	1
Authentication Required	1
SMTP Server Address	smtp.yourcompany.com
SMTP Port	25
Phone Services URL	localhost
Phone Services Port	80
MAPI Profile Name	Outlook
Start Services Automatically	1
Local Host	localhost
Local SIP Server Port	5061

OK Cancel

To Customize the Configuration Values:

- Click on the Advanced Configuration button and change the parameter values.
- Click on OK to save the changes. These settings will be sent in the email to the user by selecting the Default Configuration file option.

Reporting Problems

To report problems to the Unified CallConnector, select all or the desired trace files. Enter the description of the problem and the steps for reproducing them and click on Send Problem Report to send the email with the attachments.

The screenshot shows the 'Report Problem' window of the Unified CallConnector Server Setup Wizard. The window has a blue title bar with the text 'Unified CallConnector Server Setup Wizard' and a close button. Below the title bar is a header area with a book icon and the title 'Report Problem'. The main content area contains a 'Send To:' field with the email 'atg-ucc-client-auto-problem-report@external.cisco.com' and a 'Subject:' field with the text 'Problem Report for UCC IE Toolbar 7/17/2007'. Below these fields is a large text area with instructions: 'This Problem Report form can be used to report a problem with the Cisco Unified CallConnector product to the Cisco development team. Please add your TAC case number to the subject and copy this message to your Cisco TAC contact. This email is informational only. It will not open a TAC case.' followed by three bullet points: '- Problem Description: [Please enter detail of the problem that you are reporting]', '- Steps for recreating the problem: [Please list the steps to recreate the problem]', and '- Your contact information: [Name, Company, Phone]'. Below the text area is a section titled 'Attach Log files:' with six checkboxes, all of which are checked: 'SIP Server Log', 'Presence Server Log', 'Radius Server Log', 'System Tracker Log', 'CallController Log', and 'Database Server Log'. To the right of the checkboxes is a 'Send Problem Report' button. At the bottom of the window, there is a row of buttons: 'Home', 'Help', '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a dashed border. Below the buttons, the text 'Click on Next to continue.' is displayed.

Unified CallConnector Server Setup Wizard

Report Problem

Send To: atg-ucc-client-auto-problem-report@external.cisco.com

Subject: Problem Report for UCC IE Toolbar 7/17/2007

This Problem Report form can be used to report a problem with the Cisco Unified CallConnector product to the Cisco development team.

Please add your TAC case number to the subject and copy this message to your Cisco TAC contact. This email is informational only. It will not open a TAC case.

- Problem Description: [Please enter detail of the problem that you are reporting]
- Steps for recreating the problem: [Please list the steps to recreate the problem]
- Your contact information: [Name, Company, Phone]

Attach Log files:

- ☒ SIP Server Log
- ☒ Presence Server Log
- ☒ Radius Server Log
- ☒ System Tracker Log
- ☒ CallController Log
- ☒ Database Server Log

Send Problem Report

Click on Next to continue.

Home Help < Back **Next >** Finish Cancel

CHAPTER

5

Cisco Unified CME Router Configuration

The Cisco Unified CallConnector Servers connect to the Cisco Unified Communications Manager Express (Cisco Unified CME) routers to receive call status information, to control the call on the user's IP Phones as well as terminating calls. Both ends of these connections, the Cisco Unified CME router and the Cisco Unified CallConnector Server, need to be configured to allow these connections to operate correctly.

This chapter describes the configuration required on the Cisco Unified CME router to allow the Unified CallConnector Servers to access and control the IP Phones. These include:

Connections Overview -	Describes the interfaces or inter-working between the Cisco Unified CME router and the Unified CallConnector Servers.
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 Unified CME router to allow the Presence Server to receive accounting packets.
Verifying Connections	Describes the steps to verify that the connections have been successfully made between the Cisco Unified CME router and the Unified CallConnector Servers.
Additional Configuration for Automation Server	Describes the steps to verify that the connections have been successfully made between the Cisco Unified CME router and the Unified CallConnector Servers.

Cisco Unified CME Connections

The Unified CallConnector Server applications make the following connections to the Cisco Unified CME:

TAPI connection: The CallController Server application connects to the Cisco Unified CME ephones over the TAPI port.

Softphone (Ephone): The CallController Server application emulate the Cisco Unified CME ephones.

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

Telnet Connection: This is an optional connection used during configuration to download the ephone parameters to simplify the configuration process.

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

	UCC Server	Cisco Unified CME Router
Telnet	<ul style="list-style-type: none">▪ Cisco Unified CME IP Address▪ Telnet User name▪ Telnet Password	<ul style="list-style-type: none">▪ Setup a Telnet account for downloading the configuration information. Does not require exec level access.
Call Control from UCC Server	<ul style="list-style-type: none">▪ Cisco Unified CME IP Address▪ Ephone User Name▪ Ephone Password	<ul style="list-style-type: none">▪ Configure user name and password on all the ephones that are controlled from the UCC Server
Emulating Ephone	<ul style="list-style-type: none">▪ Cisco Unified CME IP Address▪ Ephone MAC Address▪ Ephone User Name and Password	<ul style="list-style-type: none">▪ Configure ephones with virtual MAC Address with three single channel DN's. These ephones are registered and connected as softphones from the CallController Server.
Radius Accounting	<ul style="list-style-type: none">▪ Configure Password▪ Configure Port	<ul style="list-style-type: none">▪ Configure the Radius Accounting Parameters on Cisco Unified CME router▪ Verify that the password and port are the same as the UCC Server

Ephone Parameters for Call Control

The Cisco Unified CallConnector Server connects to the Cisco Unified CME IP Phones to allow the user to control their phones from the Unified CallConnector clients such as the toolbars. This connection is made over the TAPI port of the Cisco Unified CME router.

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

Example of Ephone Configuration

```
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
```

Notes: 1. Username and password are required to allow a TAPI connection to the IP Phone.
2. 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.

Pre-Requisites for Connecting to Ephones:

- Ephone must be configured with user name and password
- There must be a phone device registered to the ephone
- There must be network access for the TCP connections between the Cisco Unified CME router and the UCC Server
- There must be no existing TAPI connections to the ephone. The Cisco Unified CME router supports only one TAPI connection per ephone.

Connection Recovery and Timeouts

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

- The UCC Server will try to establish connection to the ephone multiple times up to the Max-Retry count – a configurable parameter.
- The interval between the retries is a configurable period and is set to 6 minutes.
- If the connection cannot be re-established within the maximum retries, then UCC Server will wait for a configurable time period and then return to trying to re-establish the ephone connection.

Ephone Parameters for Softphone Emulation

The Unified CallConnector server application – CallController Server registers and establishes connection to the Cisco Unified CME as softphone to emulate ephones that have been configured for use by the Unified CallConnector. To establish this connection each ephone must have the MAC Address configured as a virtual address, type must be 7960 and should be configured with three DNs (single channel) for use by the mobility service..

Example of (Mobility) Ephone Configuration

```
ephone-2 Mac:AAAA.AAAA.1000 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 5013 CH1 IDLE
button 2: dn 5 number 5014 CH1 IDLE
button 3: dn 6 number 5015 CH1 IDLE
Username: john Password: cisco
Keep-conference
```

Notes: 1.Mobility ephones should be configured with a virtual MAC address for example AAAA.AAAA.1000.
2.The Mobility Service requires three single-line DN to be configured for each ephone.
3. Keep-conference option should be enabled to allow the conferenced parties to remain connected when this ephone drops out of the call.

Configuring Mobility Ephones:

- Ephone must be configured with virtual MAC address
- This MAC address and the router IP address must be configured for the UCC CallController Server.

- The option “Connect as Softphone” must be enabled for these mobility ephones.

Setting Up the Radius Accounting

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

The Unified CallConnector Presence Server provides a RADIUS server interface to connect with and receive the Radius accounting messages from the Cisco Unified CME router.

Radius Parameters

The Cisco Unified CME router has to be configured to enable the voice Radius accounting packets to be sent to the Unified CallConnector. The Unified CallConnector Server acts as the Radius Server and the Cisco Unified CME 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 for providing telephone status information to the Presence Server include the following steps.

- 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

To Setup Radius Parameters on Cisco Unified CME Router

The table below displays the commands for setting up the Radius parameters on the Cisco Unified CME router using Cisco IOS commands.

Command	Description
enable Router> enable	Enters Exec mode
configure terminal Router # configure term	Enters global configuration mode
aaa new-model Router (config)# aaa new-model	Enables AAA
aaa accounting update Router (config)# aaa accounting update newinfo	Enables sending update packets for new information
aaa accounting connection h323 start-stop radius Router (config)# aaa accounting connection h323 start-stop broadcast group uccserver	Enables connection based accounting and send stop and start packets
aaa group server radius uccserver aaa group server radius uccserver server 1.1.1.1 auth 1645 account 1646	Defines the IP address and ports for the server group
radius-server host Router (config)# radius-server host 1.1.1.1 auth-port 0 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 password	Sets the password for authenticating the Radius server. Note: This same password should be entered as the Radius Authentication Key (password) in the Server Wizard.
radius-server vsa Router (config)# radius-server vsa send accounting	Sends vendor specific attributes.
gw-accounting gw-accounting aaa	Enables accounting packets for the gateway interfaces

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 uccserver

radius-server vsa send accounting

radius-server vsa send authentication
```

Verifying Connections to the Cisco Unified CME Router

The following steps can be taken to verify that the connections between the Cisco Unified CME router and the Unified CallConnector Servers have been properly established or are in place.

To Verify TAPI Connection to Ephone

From the Cisco Unified CME router:

1. 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
```

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

From the Unified CallConnector Server

1. Open the UCC Diagnostic Tool. See Chapter 8 for more details.
2. Make a few calls from on the IP Phones.
3. From the CallController Server tests, run the Display All Phone Statistics test.
4. This will display the registered ephones and some basic call statistics.

To Verify Radius Events

On the Cisco Unified CME:

1. 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

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
```

From the Unified CallConnector Server

1. Open the UCC Diagnostic Tool. See Chapter 8 for more details.
2. Make a few calls from on the IP Phones.
3. From the Presence Server tests, run the View Radius Call Info test.
4. If the Presence Server has received the Radius messages from the CME, the last ten call information messages will be displayed.

Additional Configurations for Mobility Service

Configuring CME ephones for the UCC Mobility Service

A pool of ephones is used by the Mobility Server to pickup the incoming call and make the reach out calls. These ephones have to be configured on the CME and selected during the configuration of the UCC Server.

- Configure three ephone-DNs for each ephone configured for the Mobility Service. Each ephone-DN should be a Single Line or Single Channel DN.
- The ephones are used to pickup a ringing call and play the 'wait for user' prompt'. Other ephones are also used to make outgoing calls to locate the user. The number of ephones equals the "Number of Simultaneous SNR attempts times the "Maximum Number of Concurrent Calls to locate a user". Each ephone should be configured with three ephone-DNs, keep-conference option, user name and password. You should configure a Virtual MAC Address for each of the ephones. An example Virtual MAC Address would be AAAA.AAAA.1000.
- Handling 'Shared or Switching to IP Phone': This feature allows a Mobile Reach out calls to be placed on a user's shared appearance extension. This can enable the user to pickup their Single Number Reach call by placing it on hold on the mobile device and picking it up on the shared appearance button. To support this function the Mobility Service supports an option for a dedicated pool of ephones, if the ringing extension is found in this pool and the ephone is available then that ephone is used start the single number reach service. (Phase II)

Examples :

```
ephone-234 Mac: AAAA.BBBB.4512 TCP socket: [231] activeLine: 0  
REGISTERED in SCCP ver 3 and Server in ver 3
```

```
mediaActive: 0 offhook: 0 ringing: 0 reset: 0 reset_sent: 0 paging 0  
debug: 0 caps: 3
```

```
IP: 192.168.1.17 2579 Telecaster 7960 Telstrat keepalive 191  
max_line 16
```

```
button 1: dn 373 number 4373 CH1 IDLE
```

```
button 2: dn 374 number 4374 CH1 IDLE
```

```
button 3: dn 375 number 4375 CH1 IDLE
```

```
Username: 38user234 Password: cisco
```

```
ephone-235 Mac: AAAA.BBBB.4513 TCP socket: [232] activeLine: 0  
REGISTERED in SCCP ver 3 and Server in ver 3
```

```
mediaActive: 0 offhook: 0 ringing: 0 reset: 0 reset_sent: 0 paging 0  
debug: 0 caps: 3
```

```
IP: 192.168.1.17 2580 Telecaster 7960 Telstrat keepalive 191  
max_line 16
```

```
button 1: dn 376 number 4376 CH1 IDLE
```

```
button 2: dn 377 number 4377 CH1 IDLE
button 3: dn 378 number 4378 CH1 IDLE
Username: 38user235 Password: cisco
```

Support for Multiple CME Routers

The UCC Mobility Service has been designed to support multiple routers. Following are known constraints for the multiple router environments:

- Mobility ephones must be defined on each router for use by the Mobility Service.
- Direct transfer to Voice Mail must be configured for each router. UCC Mobility Service supports configuration of transfer to voice mail on a per router basis.
- Extension number length must be the same for each router. The outside dial access code also must be the same for each router. The current assumption is that the routers are in the same telephone area code.
- Hardware/Software Conference option can be set individually for each router.
- The RADIUS service must be enabled on all the routers and the authentication password must be the same on all the routers.

The Phase I UCC Mobility Service is being introduced as qualified on single routers but with an ability to support multiple routers.

Configuring CME to allowing calls to be looped through the CME

The Cisco Unified CME must be configured to allow incoming PSTN call to be looped back through the router to another PSTN call. This situation is encountered when an incoming call for a user is routed for example to their cell-phone. This call needs to be maintained until one of the parties hangs up.

Configuring Direct Transfer to Voice Mail

Three methods of transfer to voice mail are supported. A) Using Transfer-to-Voicemail soft key, b) Using the E164 number and c) Using a CUE script.

Example for Setting up CUE Script:

CUE:

```
ccn application directlytransfertovoicemail
description "directlytransfertovoicemail"
enabled
maxsessions 8
script "directxfer.aef"
parameter "numDigitsToCollect" "4"
end application
```

```
ccn trigger sip phonenumber 6000
application "directlytransfertovoicemail"
enabled
```

```
maxsessions 8  
end trigger
```

CME:

```
!  
dial-peer voice <TAG> voip  
description TransferVM_CUE_SCRIPT  
destination-pattern 6000  
session protocol sipv2  
session target ipv4:<CUE-ADDRESS>  
dtmf-relay sip-notify  
codec g711ulaw  
no vad  
!
```

Method c) is preferred as it requires the least configuration on the CME.

Note: Transfer patterns must be setup to allow PSTN calls to be transferred using the Direct Transfer to Voice Mail option.

Configuring Hardware Conferencing on the CME

Configure Hardware conferencing on the CME. Ad-Hoc conferencing is used by the UCC Mobility Service. This should be setup on the CME. Please see the Cisco Unified CME Administration Guide for setting up the CME Hardware Conferencing.

Other Notes on Mobility Service Configuration**Customizing Timeouts and Voice Prompts**

The UCC Mobility Service provides support for voice prompts in multiple languages and the option of custom prompts. The available languages can be selected from the Configuration Wizard. If the desired language is not available, the administrator can select the Custom Language option. For this option all the prompt files have to be manually copied over and recorded. Following constraints apply for customizing the voice prompts:

1. The file names cannot be changed.
2. The audio file format supported is PCM, 16 Kbps data rate, 8KHz sample rate, 16 bit sample size, mono channel.
3. The timeouts values for the Single Number Reach states is defined in the SNRAutomationRouted.xml.

This file can be found in the VAutomata folder

CHAPTER

6

Starting and Stopping Services

This chapter describes how to start and stop the Unified CallConnector Server applications and verify that the services are running.

This chapter describes the following in more detail:

- Using UCC Services Manager** –Describes how to start and stop the Unified CallConnector Server applications using the Services Manager application.
- Using Windows Services -** Describes how to start and stop the Unified CallConnector Server applications using the Windows Services program.
- Verifying Operation -** Describes how to verify that all the server applications are running properly.

Starting/Stopping Server Applications Server

These Unified CallConnector Server applications run as Windows services and do not have any user interfaces. When the applications are running their status can be viewed in the Windows Task Manager and Services application.

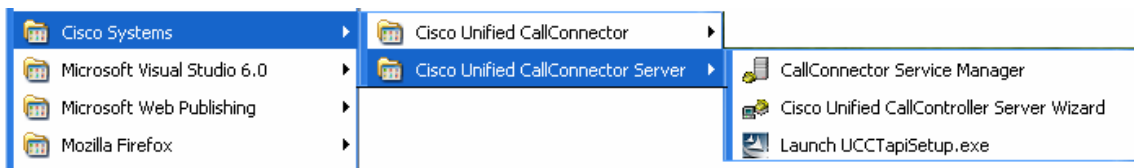
The Unified CallConnector Server applications can be started in two ways:

- From the CTI Services Manager Application
- From the Windows Services

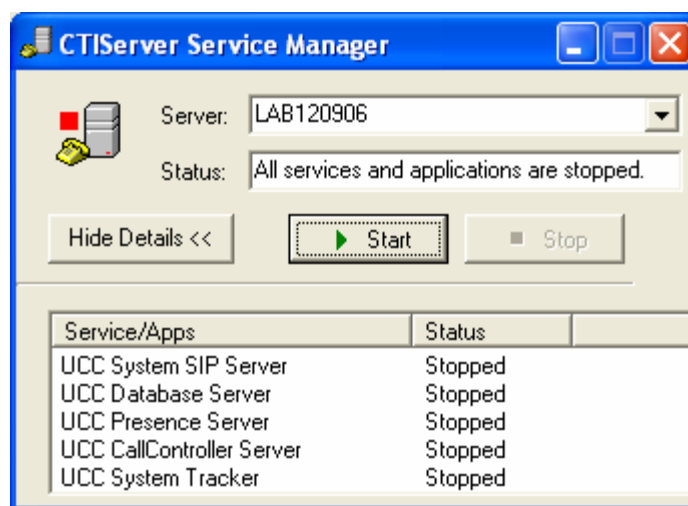
Using the CTI Services Manager

The CTI Services manager application is a tool to start and stop the collection of the server applications that comprise the Unified CallConnector server. The CTI Services Manager also displays the current status of each of the CallConnector server applications. It polls the status of the services and displays the current running state.

From the Start-Programs menu, select the Cisco Systems group and select the Cisco Unified CallConnector Server option, then click on CallConnector Service Manager.



The CallConnector Services Manager application will run and display the status of the Unified CallConnector server applications. The CallConnector Services Manager window has a status field that indicates if all services are running or if some are stopped.



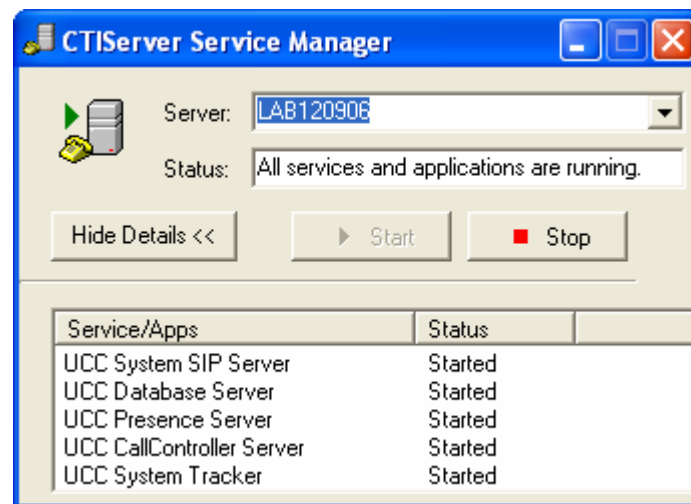
The window has three buttons:

Show Details/Hide Details: This button opens or closes a list of the Unified CallConnector Server applications and their current status – started or stopped.

Start: This button starts all the server applications. This button is only available when all the services are stopped. The services are started in their dependency order.

Stop: This button stops the services. If some services are stopped, then all services have to be first stopped before they can be started from the CallConnector Services Manager.

The window below shows the CallConnector Services Manager with all the services running.



To Start the Server Applications

- Start the Unified CallConnector Service Manager application from the Start-Programs menu.
- If some Server Applications are stopped, then click on Stop.
- If some services do not stop, then open the Task Manager and from the Process window select the Unified CallConnector Server and click on End Process.
- When all the Server Applications are stopped, click on the Start button.

To Stop the Server Applications

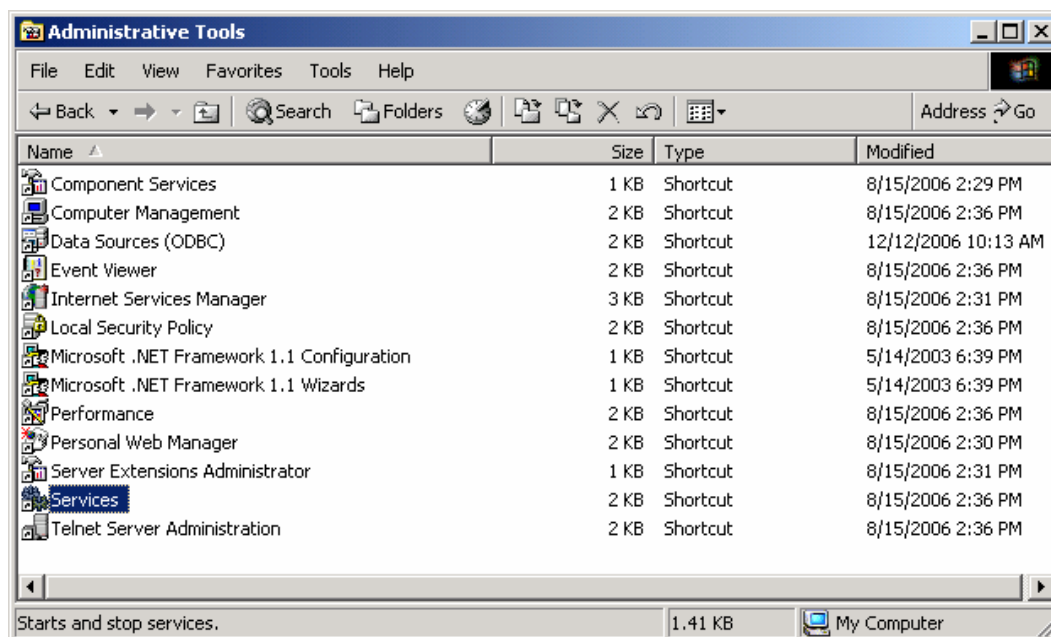
- Start the Unified CallConnector Service Manager application from the Start-Programs menu.
- Click on Stop button.

- If some services do not stop, then open the Task Manager and from the Process window select the Unified CallConnector Server and click on End Process.

Using 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 Unified CallConnector Server applications all start with cc... as shown in the picture below.

From this services window, you can perform some of the following functions:

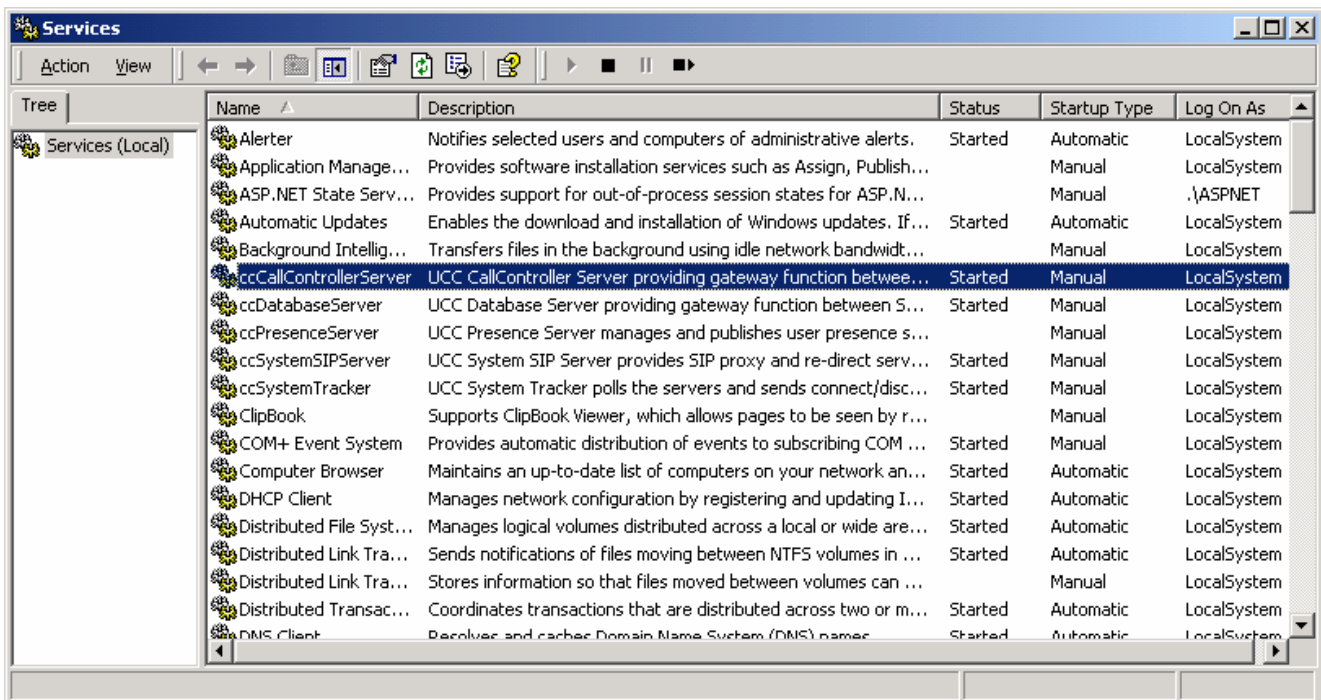
- Start/Stop a Service
- Setup the service to start with Window Startup
- Define the Recovery actions if the service fails.

The Unified CallConnector installation program will setup the CallConnector Server Applications as manually started Windows services. It also sets the Recovery actions to automatically restart upon failure.

Server Application Dependencies

The Unified CallConnector Server applications should be started in the following sequence:

1. System SIP Server
2. System Tracker
3. Database Server
4. CallController Server
5. Presence Server
6. Rules/Mobility Server



To Start a Server Applications

- Open the Windows Services application from Control Panel->Administrative Tools->Services.
- Select the Service that you want to start by clicking on the service name.
- Click on the Start button or right-click and select Start.
- When the selected service is running, the status will change to Started.

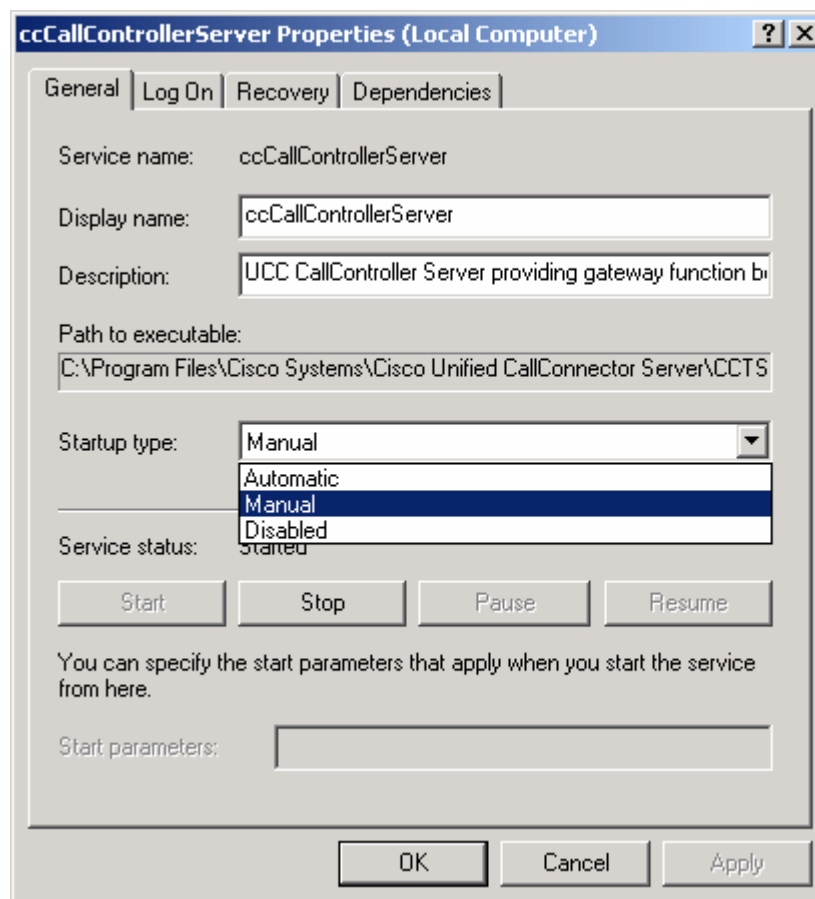
To Stop a Server Applications

- Open the Windows Services application from Control Panel->Administrative Tools->Services.
- Select the Service that you want to stop by clicking on the service name.
- Click on the Stop button or right-click and select Stop.
- 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.

Starting up with Windows:

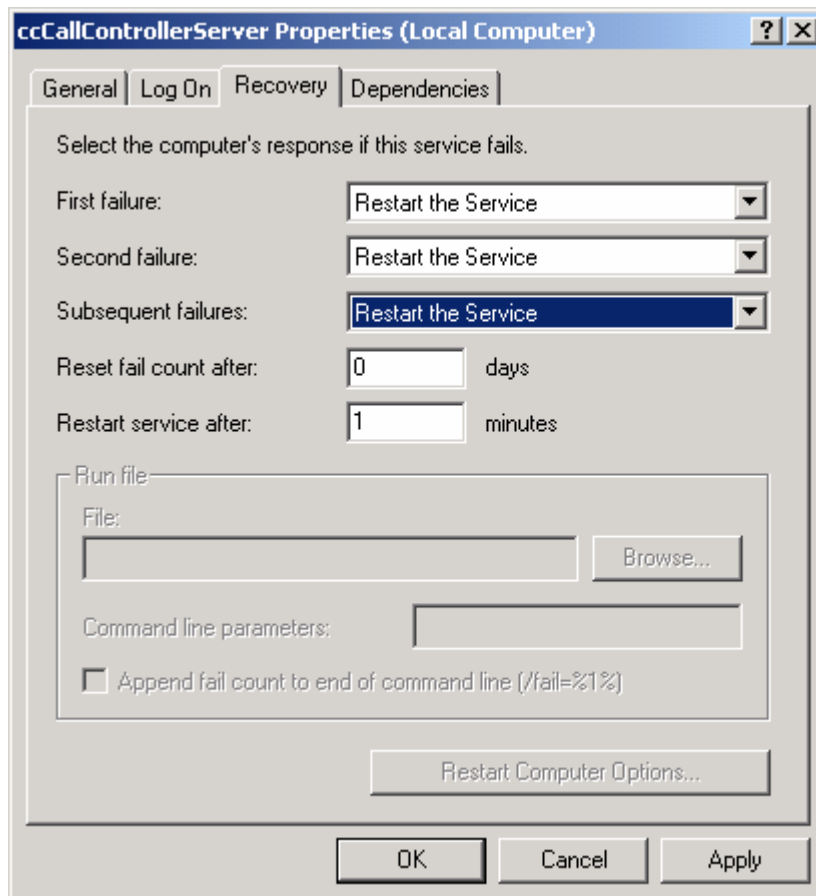
The installation program sets up the server applications to be started manually. These applications can also be automatically started when Windows starts.

- Open the Windows Services application from Control Panel->Administrative Tools->Services.
- Right-click on the Service that you want to update.
- From the menu select Properties.
- Change the Startup Type from Manual to Automatic in the General tab.



To Modify Recovery Actions

- Open the Windows Services application from Control Panel->Administrative Tools->Services.
- Right-click on the Service that you want to update.
- From the menu select Properties and click on the Recovery tab.
- From the pull down list select the recovery option. By default this is set to restart the service upon failure.



Verifying Server Operation

To Stop Unified CallConnector Servers

The Unified CallConnector Server applications can be started in several ways:

- From the CTI Services Manager Application
- From the Windows Services

Stopping Using CallConnector Services Manager

From the Start-Programs menu, select the Cisco Systems group and select the Cisco Unified CallConnector Server option, then click on CallConnector Service Manager.

The CallConnector Services Manager application will run and display the following window.

Stopping from Windows Services

- Open the Windows Services application from Control Panel->Administrative Tools->Services.
- Select the Service that you want to stop by clicking on the service name.
- Click on the Stop button or right-click and select Stop.
- 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.

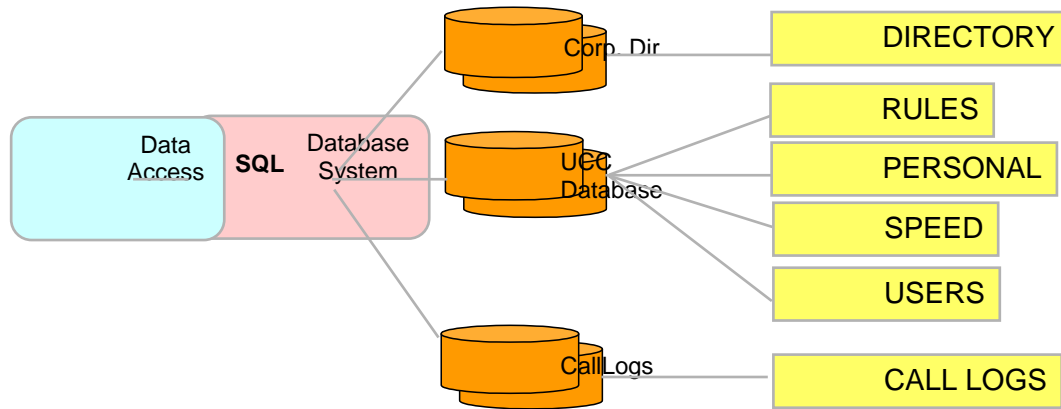
Data Management

The Unified CallConnector Server stores configuration, contact and transaction data in databases. This section provides information the procedures for the management of this data. This chapter provides an overview of the Unified CallConnector databases, the server dependencies on the data and the procedures for managing the data. It includes:

UCC Databases:	Provides an overview of the Unified CallConnector databases.
Data Dependencies:	Describes the data requirements for the Unified CallConnector servers.
Managing the Data:	Describes the procedures for maintaining the Unified CallConnector data including backing up and restoring.
Importing Contacts:	Describes the method for importing the corporate database entries.
Transaction Data:	Describes the steps for managing the call log and other Unified CallConnector transactional data.

UCC Database Overview

The Unified CallConnector Server maintains configuration, contact and transaction data in three relational databases - UCCDatabase, Corporate and CallLog. The data is accessed using standard SQL commands through the Windows ODBC drivers. This allows the Unified CallConnector Server to be agnostic to the underlying database system.



For the smaller configurations, the Microsoft Access database is used as the database system.

UCC Database

The UCCDatabase maintains the configuration and personal contact information. The main tables and the information they contain is listed below:

USERS - UserID, Login Name, Password, User Type

GROUPS - Group/Department names

PHONES - Phone Name, Password, MAC & IP address

ACCESS CONTROL - Blocked users/groups

USER-ASSOCIATION TABLES -- associates user with their resources

PERSONAL – Personal contact data

SPEED – Personal Speed Numbers

RULES -- User's Automation Rules

The information in the Users, Groups, Phones and the Access Control tables are updated through the Unified CallController Server Wizard. The Personal, Speed and Rules tables are updated from the user interfaces in Outlook and Internet Explorer.

Notes on UCC Database

User Login Name

The corporate database can contain both Unified CallConnector user and non-user information. The user login name in the corporate directory distinguishes the record as a Unified CallConnector user. This information is required and should not be changed when the data is manipulated using external database tools.

Department Field

The value in the department field of the corporate database is used to group users in the Status window. In other words the users in the Status view are grouped by the department they belong to. The Status window also displays the number of users in the department that are currently logged in and available.

Telephone Numbers

Telephone numbers in the corporate directory are saved in the canonical format. This means that the number format includes the country code preceded by a plus sign, area code in brackets and separated from the subscriber number with a space. One exception to the canonical formatting is that the country code is not inserted for the current location.

Access Rights

Corporate directory entries can be changed only from administrative accounts. User's can change their contact information from the Popup->Options window. User's can change their availability status using the toolbar buttons.

Corporate Database:

The corporate directory is a key database in the Unified CallConnector server environment. This is used to store shared contact information accessible to all the Unified CallConnector users. The information in the corporate database is used by a number of applications including:

- QuickSearch queries the corporate directory database and returns the resulting results.
- The Corporate window in the Contacts window displays the information from the corporate database.
- The Presence Server generates the Status hierarchical display from the corporate directory data.
- The Presence Server saves the availability status of users in this database. The user's current presence status is displayed in the directory search results.
- Call Logs are generated and written to the call log database only for the Unified CallConnector users. The caller or called number must match one of the user's contact numbers and the user must be a Unified CallConnector user.
- Instant Messages can be sent to Unified CallConnector users. The destination address is obtained from the corporate directory.

The corporate database stores two types of information:

Shared contact data for the organization.

Unified CallConnector user contact data.

The Unified CallConnector user information is added to the corporate directory when the users are created using the Server Wizard. Users can change their contact details from the Popup->Options window or from the Contacts->Corporate directory view,

Information about other contacts can be added to the Corporate directory from the Contacts window or imported into the corporate directory.

Notes on Corporate Directory

User Login Name

The corporate database can contain both Unified CallConnector user and non-user information. The user login name in the corporate directory distinguishes the record as a Unified CallConnector user. This information is required and should not be changed when the data is manipulated using external database tools.

Department Field

The value in the department field of the corporate database is used to group users in the Status window. In other words the users in the Status view are grouped by the department they belong to. The Status window also displays the number of users in the department that are currently logged in and available.

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Access Rights

Corporate directory entries can be changed only from administrative accounts. User's can change their contact information from the Popup->Options window. User's can change their availability status using the toolbar buttons.

Call/Transaction Database:

The CallLog database stores the call transaction logs and the instant message transactions. The transaction data is stored only for the Unified CallConnector users. Several conditions have to be met for a call log to be written to the call log database:

- The Radius service on the router needs to be properly configured to send accounting packets to the Unified CallConnector server.
- The Presence Server has to be running and receiving the accounting records from the router.
- Call Logs are written for the Unified CallConnector users. The users have to be configured using the Server Wizard and their records should be present in the corporate directory.

- One of the user's telephone numbers must match the IP Phone extension number.

Notes on Call Log Directory

User ID

Each call log record is associated with a user based on the user-id parameter. This means the call log is only visible to individual users. If multiple users have the same phone number, then a separate records is written for each user. Users can manage their log entries from the log window.

Name Lookup

The caller and called telephone numbers are matched in the corporate directory to lookup the names. If there is a match then the name is written in the call log database.

Data Dependencies

This section highlights the dependencies between some of the key features of the Unified CallConnector and the data in the database system.

User Authentication

All users need to log in to the Unified CallConnector to access the system features. This authentication is carries out during the SIP registration process. The following data from the Users table in the UCCDatabase is used verify the user account.

- **LoginName:** This is the login name assigned by the administrator when the user account is created.
- **Password:** Password used to authenticate the account.

User Type

Each user account needs to be assigned a user type. Three user types are supported – User, Manager and Administrator. The default account type is User. Generally, the user type determines the read/write (or add, modify and delete) rights.

- The user types are defined in the UserType table in the UCCDatabase.
- The foreign key FK_UserTypeID in the user table associates the user account with the type information.

Phone Association and Authentication

Each user account in the Unified CallConnector can be associated with one or more IP Phones. The users are able to view call information from these phone and are able to control these calls.

- The Phones table in the UCCDatabase stores the details of the IP Phones configured in the Unified CallConnector system.
- The UserPhones table maintains the list of the phones associated with the user.

Access Rights

A set of tables contain the list of users and groups that are allowed to access the status informations.

Presence Groups and Users

The Unified CallConnector Status window organizes the user in Groups. This Group is the department that the user belongs to in the organization. Each user can belong to one group.

- The Group names are defined by the Server Wizard and stored in the Groups table in the UCCDatabase.
- The associated between the user and their group is maintained by the UserGroups table.
- Users need to be associated with the groups defined in the Groups table for the access control rights to be applied.

Telephone Status in Presence

The telephone status information is displayed in the Status window. Thus information is only displayed for contacts in the corporate directory whose telephone number matches the extension number of the IP Phone receiving or making the calls.

- Match for the caller and called ID numbers is checked against the BusinessPhone, HomePhone or Mobile numbers in the corporate directory.
- If the number matches then the call state of that number is published to the Status window.

Call Logs for Each User

The call log data is saved in the CallLog database only for UCC users.

For a call log to be saved in the database the caller or called IP Phone extension number must be in the corporate directory.

The corporate directory record must be a Unified CallConnector user.

Note: The corporate directory stores both UCC-user and non-user contact information. If you are importing contact information to the corporate directory, the user account information should be maintained.

Maintaining the Data

This section describes how to backup, restore, repair, import, and export the Unified CallConnector databases.

Backing Up Databases

Backing up the directory data allows you to keep a copy of the database for future data recovery. It is recommended to backup your database on a regular basis in order to keep your backup data current.

To Backup the Databases

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Run the Unified CallConnector Server Wizard and go to the Database section.
- Click on the Backup button. The files will be copied to the Databackup folder.
- You can also copy the database files to the backup folder. The Access database files have the .mdb extension.
- Restart the Unified CallConnector Database Server.

Restoring Databases

If a directory database gets corrupted, you may restore the database from backup. Any new information in the database will be lost when the data is restored.

To Restore the Databases

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Run the Unified CallConnector Server Wizard and go to the Database section.
- Click on the Restore button. The files will be copied to the Data folder.
- Copy the specific database file that you wish to restore from the backup folder to the Unified CallConnector Server->Data folder. This will override the existing data file.
- Restart the Unified CallConnector Database Server.

Note: The transaction information such as call logs is stored in the CallLog database, the shared contact information is saved in the Corporate database and the configuration and personal data is stored in the UCC Database

Compacting the Databases

When records are deleted in the database, they are marked as not available. The deleted record remains in the database. The 'Compact' operation removes these deleted records. For databases with frequently changing data, such as the Calllog database, the compacting operation can be used to remove these un-used records.

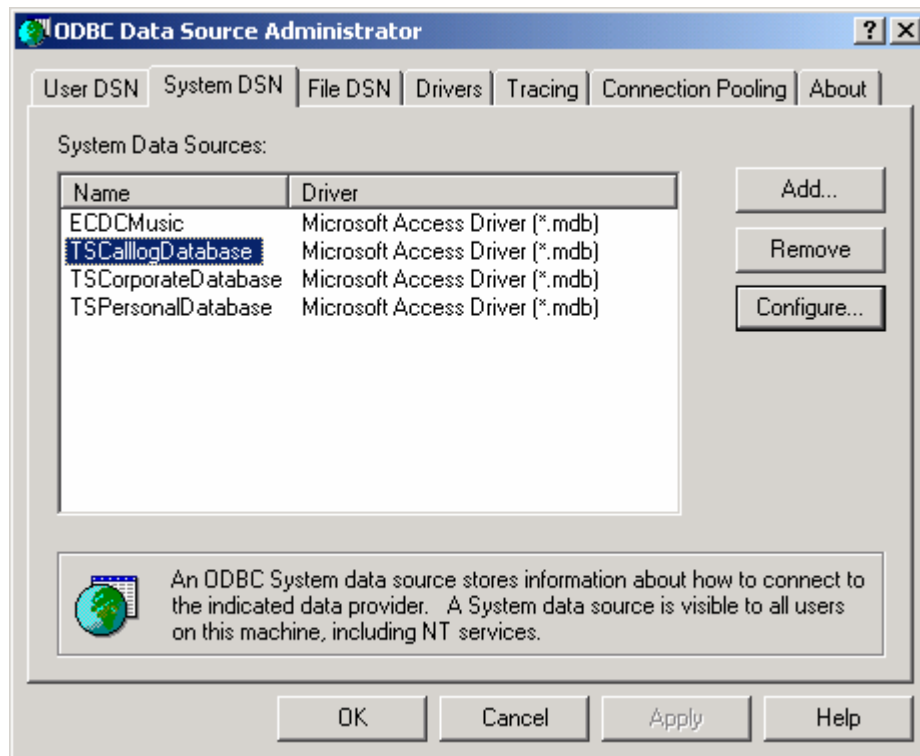
To Compact the Databases

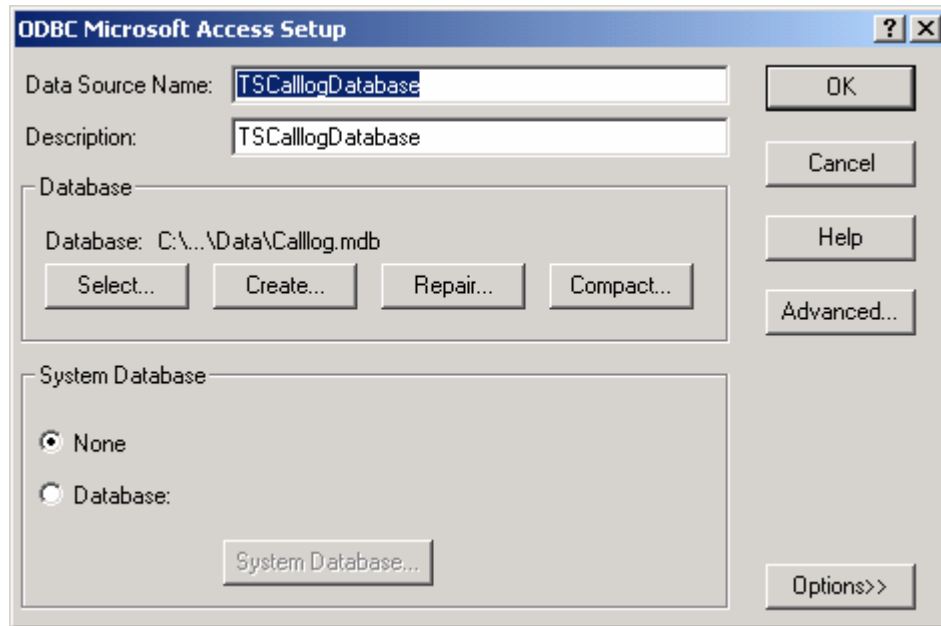
- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Run the Unified CallConnector Server Wizard and go to the Database section.
- Click on the Compact button. The files will be compacted.
- Restart the Unified CallConnector Database Server.

To Compact the Databases from ODBC

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Open the Data Sources (ODBC management) window from Administrative Tools-> Data Sources.
- Click on the System DSN tab. The Unified CallConnector databases will be displayed. Select the database that you want to compact and click on Configure button.
- The Configure button will open the ODBC Microsoft Access Setup widow. Verify that the correct database has been selected and click on Compact.

Restart the Unified CallConnector Database Server.





Repairing the Databases

The repair operation rebuilds the indexes that allow a database to quickly search and retrieve data.

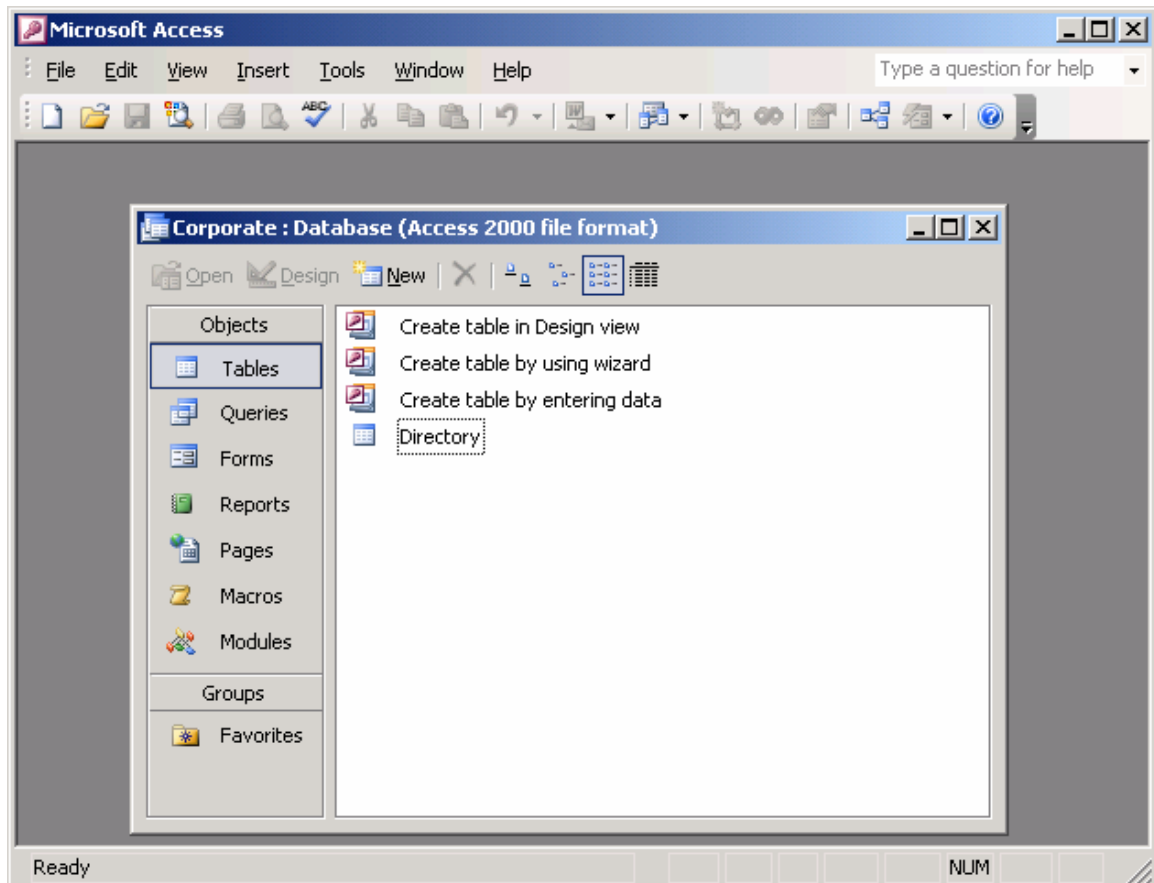
To Repair a Database

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Open the Data Sources (ODBC management) window from Administrative Tools-> Data Sources.
- Click on the System DSN tab. The Unified CallConnector databases will be displayed. Select the database that you want to repair and click on Configure button.
- The Configure button will open the ODBC Microsoft Access Setup widow. Verify that the correct database has been selected and click on Repair.

Restart the Unified CallConnector Database Server.

Importing and Exporting Contacts

The Microsoft Access database tools for importing and exporting can be used to populate the corporate directory data. The Corporate Directory database can also be exported.



To Import Data to the Directory

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Open the Corporate database from Microsoft Access.
- From the File menu, select Get External Data->Import. The import window will be displayed.
- Select the file and the file type and run through the import wizard.

To Export Data from the Directory

- Stop the Unified CallConnector Database Server. The server can be stopped from Administrative Tools->Services window.
- Open the Corporate database from Microsoft Access. Double-click on Directory to open the table.
- From the File menu, select Export->Import. The export window will be displayed.
- Select the file and the file type and run through the export wizard.

Maintaining CallLog Data

The CallLog database stores records for the phone calls made through the Cisco Unified CME. These records can accumulate and build up to a large number, increasing the size of the database and impacting the performance when viewing the logs.

The Unified CallConnector Server Wizard provides an option to automatically remove the call log records that are older than the selected date.

To Automatically Purge Call Log Records

- Start the Server Wizard. Click on Database Server or click on Next to move to the Database Server window.
- Select the option 'Remove Call Logs older than (in days)' and from the pull-down list select the number of days of call log data you want to keep in the system.
- Click on Finish to apply the changes.
- Select the file and the file type and run through the export wizard.
- Stop and start the Unified CallConnector Database Server.

Server Diagnostic Tool

The Unified CallConnector Server Diagnostic Tool allows you to view the status of the server applications, configuration information and run diagnostic tests.

This chapter describes the information available from the Diagnostic Tool and provides instructions for running the tests. It includes:

Tool Overview:	Describes the different attributes and functionality available from the Toolbars.
Main Window:	Describes the Diagnostic Tools user interface and the different window sections.
Running Diagnostic Tool:	Describes how to setup an account(s) for use when running the tests
Server Test Suites:	Provides an overview of the Server test cases and description of the information returned when the test is run.
Client Test Suites:	Provides an overview of the client test cases and description of the information returned when the test is run.
Results Discussion:	Describes the implication of the test result success or failure.

Server Diagnostic Tool Overview

The UCC Server Diagnostic tool can be used to isolate problems with the Unified CallConnector Server applications. The Diagnostic Tool can display configuration information, connection status and statistics for the servers. The Tool also contains a suite of diagnostic tests that can be run to determine possible causes for problems experienced when running the UCC clients in the server mode.

The Diagnostic Tool can be run on the Unified CallConnector Server or on the client desktop. Note it the Tool runs only on Windows 2003 or Windows XP systems.

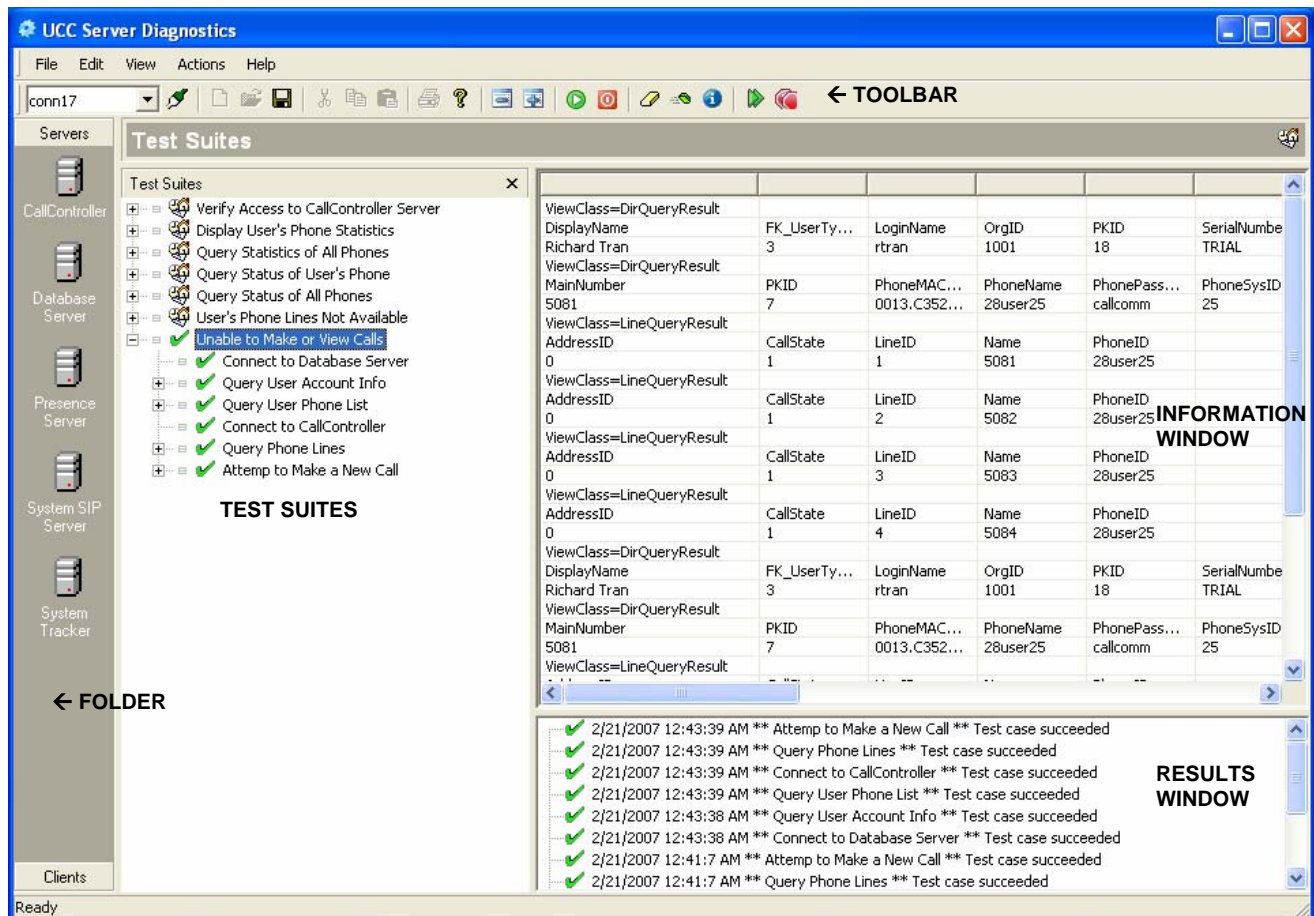
Diagnostic Tool Capabilities

The Unified CallConnector Diagnostic Tool can be used to:

- Run client and server diagnostic test suites:
- Display User, Group, Phone configuration information
- Display Server Status and Statistics
- Display Phone Status and Statistics
- Display Radius Inputs, Call Logs, and Active calls
- Display Registered and Subscribed Users

Diagnostic Tool Main Window

The regions of the Diagnostic Tool window are described below starting from top left and going to bottom right:



Menu Bar:

The menu provides access to the functions of the diagnostic tool:

Toolbar:

Provides buttons for selecting or setting up the test account and running the tests. These functions include starting and stopping a test suite, saving, printing or clearing the test results and information.

Folders:

The diagnostic tests are organized under server and client folders. Each server application is associated with its own set of test suites.

Test Suites:

A test suite is a collection of unit tests that request information or attempt to isolate a problem.

Information Window:

The Information Window displays the messages received in response to the queries sent by the tool as the tests are executed.

Results Window:

The Results Window displays each test that has been run with an indication of the test result – success or failure.

Menu Bar

File Menu:

Manage Connection - opens the Connections window to setup a user account to run the tests on

Save – allows you to save the contents of the Information and Results windows to a selected a file

Print – prints the contents of the Information and Results Window

View Menu:

Toolbar – displays the toolbar below the menu bar when selected.

Status Bar – displays the status bar at the bottom of the window when selected.

Dialog Test – not currently implemented

Toggle Test Suite Tree – not currently implemented

Actions Menu:

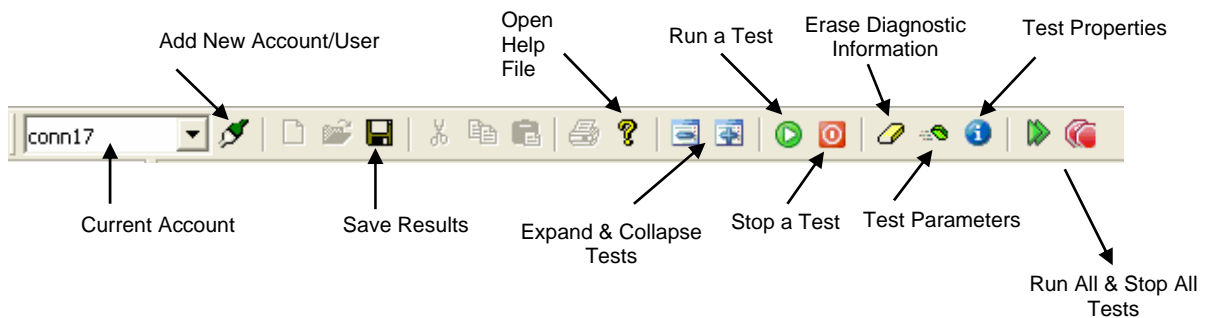
Reload All Test Suites – not currently implemented

Launch Test Suite Builder – not currently implemented

Help Menu:

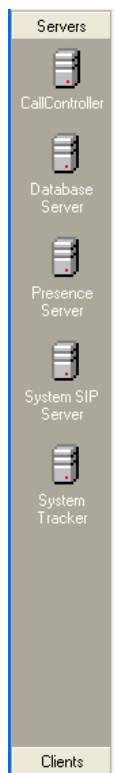
Help – opens the Diagnostic Tools About dialog window

Toolbar



Toolbar Button	Description
Current Test Account	Each test is a Unified CallConnector user account under which it is run. The current account displays the active user account that is be used or will be used by the selected tests. More than one test account can be setup
Add New Accounts	The New Account button allows you to specify a new user account. It opens the New UCC Account window for entering the SIP server address and user login information. You need to specify the account name
Save Results	Opens the 'File Save As' to allow you to specify the file name and location for saving the Information and Results window information.
Save Results	Opens the 'File Save As' to allow you to specify the file name and location for saving the Information and Results window information.
Open Help	Displays the Diagnostics Tool help window.
Expand Tests	The Test Suite is displayed as a hierarchical tree. This button expands the all the Test Suites to display the Unit Tests associated with each suite.
Collapse Tests	Collapses the hierarchy to display only the test suites.
Run a Test	Runs the currently selected test suite or test,
Stop a Test	Stops the currently selected test suite or test,
Erase Diagnostic Information	Clears the data displayed in the Information and Results windows
Display Test Parameters	Open Test Suite Hierarchy to display the parameter field being used for each of the tests
Display Test Properties	Opens the Properties window for the selected item in the test Suite list
Run All Tests	Run all the tests in the selected test suite
Stop All Tests	Stop running all tests

Folders



Folders provide access to the test suites. The diagnostic tests are organized in test suites which are associated with items in the folders.

There are two folders – Server and Client.

The server folder has an entry for each of the Unified CallController server applications. Example of these are the CallController or Presence Server. When you select an entry in the folder, the test suites associated with that entry are displayed in the Test Suites window. There may one or more test suites associated with each entry.

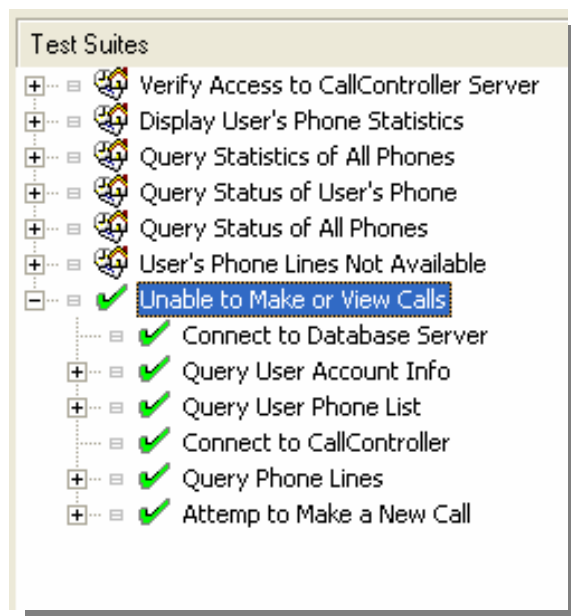
The Client Folder has one entry for all the client test suites.

To View Available Test Suites

- Select the Folder by clicking on Servers or Clients.
- Select the Folder Entry by clicking on the item.
- The list of available test suites for the entry will be displayed in the Test Suites window.

Test Suites

A Test Suite is the problem that you want to diagnose or the type of information that you want to view from the server.



Each test suite can be comprised of a number of individual tests. Test Suite attempts to isolate the problem by validating each of the requirements for that function.

In the example above, to determine why the use is unable to make calls, the following steps have to be validated.

- Login to the UCC system using the account of the user that is experiencing the problem.
- Connect to the Database Server. If this fails then the user account cannot be accessed as there is a problem connecting to the Database Server.
- Obtain the user's account information. This is to verify that the user has an account on the server
- Obtain the user's phone information. If no phones are configured then this will fail.
- Verify that the phone is connected to the Unified CallConnector and is available.
- And finally an attempt is made to place the call.

Diagnostic Information Window

ViewClass=DirQueryResult					
DisplayName	FK_UserTy...	LoginName	OrgID	PKID	SerialNumbe
Richard Tran	3	rtran	1001	18	TRIAL
ViewClass=DirQueryResult					
MainNumber	PKID	PhoneMAC...	PhoneName	PhonePass...	PhoneSysID
5081	7	0013.C352...	28user25	callcomm	25
ViewClass=LineQueryResult					
AddressID	CallState	LineID	Name	PhoneID	
0	1	1	5081	28user25	
ViewClass=LineQueryResult					
AddressID	CallState	LineID	Name	PhoneID	
0	1	2	5082	28user25	

The Information window displays the results from the individual test that is run. A test may return a single line of result or many responses.

Each of the responses is displayed in three lines.

- ViewClass: The first line is the message type. This is the beginning of a response entry.
- Parameter - Line After ViewClass: List of the parameters or the fields that are send in the message. Each ViewClass messages has its own list of fields.
- Value – Value of parameters listed in the previous line. The value for each of the fields or parameters returned in the response message is listed below its Parameter or Field name.

For Example in the display above:

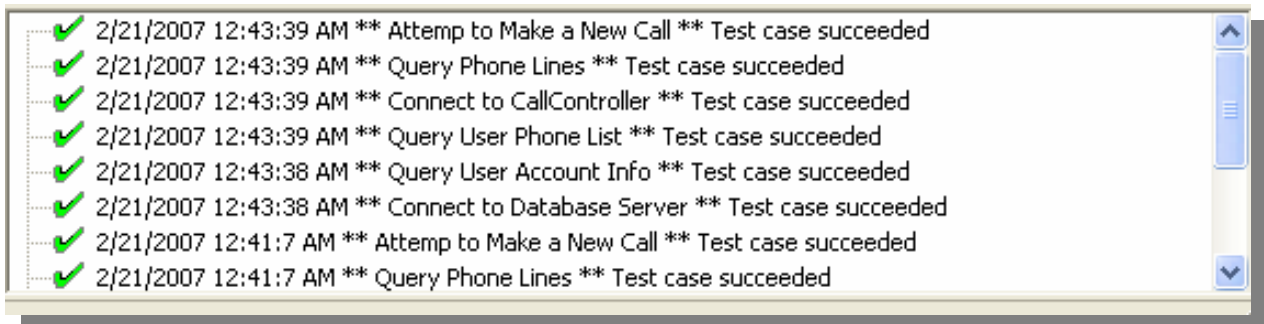
ViewClass=DirQueryResult. This message returns information from the database.

The fields returned include the Display Name, User Type Login Name etc.

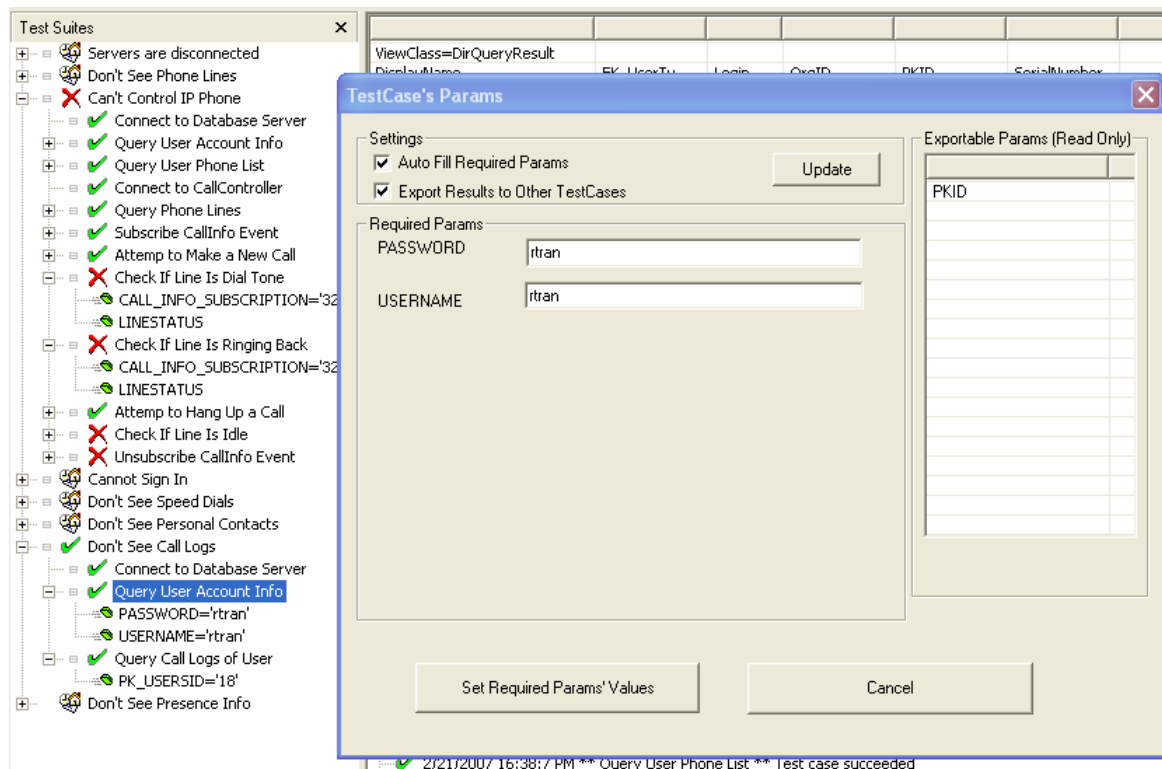
The value of these fields is in the next line, respectively Richard Tran, 3, rtran etc.

Test Results

The Results window indicated is the particular test was a success or failure. For each test run there will be a corresponding result status .



Test Parameters

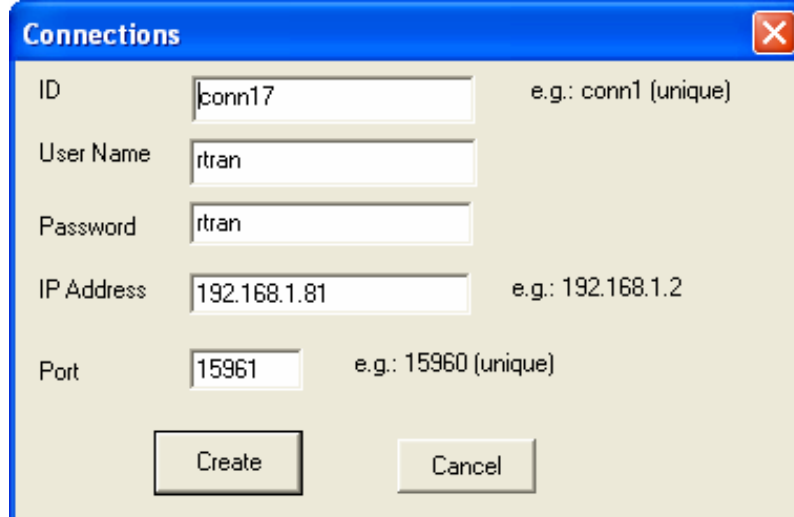


The parameters required in each of the tests is displayed in the parameter list. The parameters can be displayed by highlighting the test and clicking on the toolbar button – Display Test Parameters or by double clicking on a test entry. Each test can inherit the results from the prior test(s) in the test suite. You can right-click to open the properties window and change the inheritance rules or enter a specific For example in the Make a Call test, the telephone number to be dialed can be entered as a parameter.

Running the Diagnostic Tool

- Copy the ccUCCDiagnostic.exe and UCCDiagnostic.xml file to the tools folder of the UCC client.
- Diagnostic Tool can also be run from a shared drive or on the CallConnector server.
- The computer where it is run needs to have the UCC client or server installed. Ports setup for the Tool must not be blocked. The Diagnostic tool is not compatible with Windows 2000.
- Double Click on ccUCCDiagnostic.exe. The UCC Server Diagnostic Tool will run.
- Setup or select the account you want to use for the tests.
- Click on the Server or Client Folder button and select the folder by clicking on the icon.
- Click on the Test Suite that you want to run.
- To execute the test, click on the Run button.
- You can also right-click and select Run Test Suite
- The tests will run and display the information in the Information Window and success/failure in the Results Window.

Creating a New Account



The screenshot shows a 'Connections' dialog box with the following fields and values:

Field	Value	Hint
ID	conn17	e.g.: conn1 (unique)
User Name	rtran	
Password	rtran	
IP Address	192.168.1.81	e.g.: 192.168.1.2
Port	15961	e.g.: 15960 (unique)

Buttons: Create, Cancel

- Click on the Create New Account button on the top left hand corner on the toolbar (next to Accounts dropdown menu).
- It will bring up a window where you can create a new Account. Enter the following information in the New Accounts window:
 - The ID you would like to give to this account (to distinguish between other accounts)

- The username and password of an account on the Unified CallConnector Server you are currently troubleshooting.
- The IP address of the Unified CallConnector Server you are currently connecting to.
- The port where you will use to access the UCC Server.
- When you are finished, click on Create to create this account. You can create new accounts. However, you cannot edit any existing accounts.

Selecting a Client Test Suite

- On the left hand side of the Diagnostic Tool window, from the Folder menu click on the Client Test Suites button. By default, the Server button is open when you first open the Diagnostic Tool. The Client Test Group button is at the bottom of the folder menu.
- Click on the All Clients button. A list of the client test suites will be displayed in the Test Suites window to the right.
- Click on the plus sign of any test suite to expand and show a list of different tests under the test suite.

Selecting a Server Test Suite

- On the left hand side of the Diagnostic Tool window, from the Folder menu click on the Server button. By default, the Server button is open when you first open the Diagnostic Tool. The Server button is at the top of the folder menu.
- A list of folders representing a group of tests for each Unified CallConnector Server components is displayed. This allows the you to test each component individually. Note however that some components are dependent on other components in order to work.
- The Server folders listed are CallController Server, Database Server, Presence Server, System SIP Server, and System Tracker. Click one of these icons to select that group of tests.
- A list of the test suites for that server component will be displayed in the Test Suites window to the right.
- Click on the plus sign of any test suite to expand and show a list of different tests under the test suite.

Starting and Stopping a Test

- After you have selected a test suite to run, expand the test suite by clicking on the plus button next to it.
- It will display a list of tests that must pass in order for this functionality to work.
- Because each test suite is associated with its own individual account, please be sure to select the correct account that you would like to use from the Account Dropdown menu. You may select an account from the drop down menu, or create a new one by clicking on the marker button next to it. If you

do not select the correct account, you may be running these tests on a UCC Server account you were not intending to troubleshoot.

- Some tests (one level under test suites) will require parameters to be filled in. If there is a tiny box icon next to a test, this means that it will automatically fill this parameter and you needn't worry about it. But if it does not have a box icon next to it, you may need to fill in this parameter.
- Right click on the test suite and click on the Run Test Suite option to start the test suite.
- You may also start a test suite by selecting a test suite and then clicking the green play button from the menu at the top of the screen.
- After the test is finished it will stop automatically.
- If you would like to stop the test at any time while it is running, you may right click on the test suite and select the Stop Test suite option. You may also click on the Stop Button from the menu at the top of the screen. This will also stop the current selected test from running.

Start and Stop All Tests

- You may run through all the tests by clicking on the Run All Test Suites button located on the toolbar menu at the top of the screen.
- You may stop these tests from running by clicking on the Stop All Tests button.

Interpreting the Test Results

- After running a Test suite, the tool will display a green check mark to all tests that have passed and a red **X** mark to all tests that have failed.
- In the Results window, it will also display the results (pass or fail) of each test case.
- If the result of a particular test has failed, you can find the list of possible causes of this failure in the Test Results Appendix in this Help File.

To Clear the Information and Results Window

- To clear the Tests Results (success and error messages) and Information Data (data messages received from Servers), click on the **Erase** button located on the top toolbar menu.
- Clicking this will erase all data and result messages.

Saving Test Results a File

- Click on the floppy disk icon located on the top toolbar menu.
- This will bring up a prompt to save the Information Data. If you do not want to save the Information data, click cancel to continue to saving the Test Results.
- After you are finished saving the Information Data, you will be prompted to save the Test Results. If you do not want to save the Test Results, then please click cancel.

Clearing Test Status

- After running through test suites, you may notice that the status check marks are not removed from the test suites and tests.
- It will remain there for your own convenience and will not be erased until you exit the Diagnostic Tool application or hit the Stop Test button or Stop all Tests button.
- To clear the status check marks from a particular test suite, select the test suite and click on the Stop Test button on the toolbar menu located at the top of the screen.
- To clear all the status check marks from all tests suites in the Test suite Menu, simply click on the Stop All Tests button on the toolbar menu located at the top of the screen.

To View the Test Parameters

- To view parameters used in a test, expand the test suite and right click on a test. Then select the properties option.
- It will show the parameters being used by this particular test.
- Parameter Settings:
 - If the Auto-fill check box is checked, it will automatically fill these parameters upon running it. If Auto-fill it is unchecked, then you may check it to have it automatically fill in parameters or you may fill in these parameters manually.
 - You may have the test suite stop execution upon test failure by checking the Stop Execution upon Any Test Failure box. If it is not checked it will continue execution if any test fails.
 - It is recommended that you have the Auto-Export setting checked. This will automatically export all test results to the rest of the tests so that the Auto-fill feature will work.

To Displaying the Tests in a Test Suite

- When you first open a Client or Server Test Group, it will show you a collapsed list of Test suites.
- To expand a specific Test suite, click on the Expand button located to the left of the Test suite.
- You may also expand a specific test suite by clicking on the plus button next to the left of the test suite.
- You can expand all sub directories of the test suites (showing tests and their parameters) by clicking on the Expand All button located on the toolbar menu at the top of the screen.

To Hide the Tests in a Test suite

- When you first open a Client or Server Test Group, it displays a collapsed list of test suites.
- If you happen to have any of these test suites expanded you can collapse one test suite by selecting it. Then select the Collapse button located to the left of the test suite to hide all the tests under the test.
- You may also collapse a test suite by clicking on the test suite and clicking on the Collapse button on the toolbar menu at the top of the screen.
- You can hide all sub directories of the test suites (hiding tests and their parameters) by clicking on the Collapse All button located on the toolbar menu at the top of the screen.

Test Results Discussion

This section describes possible problems related to the failed tests. This should be helpful in troubleshooting UCC problems.

Server Tests

CallController Server

- **Verify Access to CallController Server:** Checks to see if a connection can be established with the CallController Server.
 - Success: The CallController Server is online, running, and connection can be established with it.
 - Failure: The CallController Server is offline, not running, or connection cannot be established with it (possible firewall issues).
- **Display User's Phone Statistics:** Returns statistics of the user's phone.
 - Success: Statistics of User's phone which includes: Number of times disconnected, number of errors, number of incoming calls, number of outgoing calls, ID of the phone, number of times phone reconnected from failure, number of times the phone was reset, the status of the phone, and the total number of calls (incoming/outgoing).
 - Failure: Cannot Contact CallController Server or there is no phone associated with this user.
- **Query Statistics of All Phones:** Returns statistics of all phones associated with this UCC Server.
 - Success: Statistics of all phones associated with this UCC Server, which includes: Number of times disconnected, number of errors, number of incoming calls, number of outgoing calls, ID of the phone, number of times phone reconnected from failure, number of times the phone was reset, the status of the phone, and the total number of calls (incoming/outgoing). (It will show list of statistics for all phones, differentiated by Phone ID)
 - Failure: Cannot Contact CallController Server or there are no phones associated with this UCC Server.
- **Query Status of User's Phone:** Checks the status of the user's phone: The main phone number, the phone ID, and the phone's status.
 - Success: It returns the status of the user's phone (Idle/Busy/Disconnected).
 - Failure: The CallController Server is offline or the user is not associated with a phone.
- **Query Status of All Phones:** Checks the status of the all phones connected to this UCC Server: The main phone number, the phone ID, and the phone's status.
 - Success: It returns the status of the user's phone (Idle/Busy/Disconnected).
 - Failure: The CallController Server is offline or the user is not associated with a phone.
- **Phone Lines Not Available:** Checks to see if the user can obtain phone lines.
 - Success: It returns a list of the user's phone lines (phone DN's).

- Failure: The CallController Server is offline, the user is not associated with a phone, or the user's phone is disconnected.
- Unable to Make or View Calls: Checks to see if the user can obtain phone lines.
 - Success: It makes an outgoing phone call.
 - Failure: The Client is unable to contact the CallController Server, the user is not associated with a phone, or the user's phone is disconnected.

Database Server

- Verify Access to Database Server: Checks to see if a connection can be established with the Database Server.
 - Success: The Database Server is online, running, and connection can be established with it.
 - Failure: The Database Server is offline, not running, or connection cannot be established with it (possible firewall issues).
- Unable to Login: Checks the Database for your account username and password.
 - Success: The Database is running and is able to verify correct username and password.
 - Failure: The Database Server is not running, or the account information used is incorrect.
- Speed Dial Numbers are Not Displayed: Requests a list of Speed dial entries for this user from the Database Server.
 - Success: The Database Server was able to return all speed dial results.
 - Failure: The Database Server is either not running or speed dials may have not been created yet.
- Display All User Accounts: Checks the Database for all user accounts.
 - Success: The Database is running and returns all user account information.
 - Failure: The Database Server is not running, or there are currently no user accounts on this UCC Server.
- Display All Phones: Displays a list of all phones associated with this UCC Server.
 - Success: The Database is running and returns all phones connected to this UCC Server.
 - Failure: The Database Server is not running, or there are currently no phones controlled by this Server.
- Personal Contacts are Not Displayed: Requests a list of all Personal Directory Contacts from the Database Server.
 - Success: The Database Server was able to return all Personal Directory Contacts.
 - Failure: The Database Server returned nothing. The Database Server may be offline or something could be blocking the query from being received by the Database Server. It's possible that the user may not have any Personal Directory Contacts.
- Call Logs are Not Displayed: Requests a list of all Call Logs from the Database Server.
 - Success: The Database Server was able to return all Call Log results.

- Failure: The Database Server returned nothing. The Database Server may be offline or something could be blocking the query from being received by the Database Server. It's possible that the user has no call logs.
- Display Latest Call Logs in Database: Requests a list of all Call Logs from the Database Server.
 - Success: The Database Server was able to return the 10 most recent call logs written to the Database.
 - Failure: The Database Server returned nothing. The Database Server may be offline or something could be blocking the query from being received by the Database Server. It's possible that the user has no call logs.

System SIP Server

- Display Registered Servers and Users: Displays the current list of registered users and servers.
 - Success: Returns a list of registered users and Servers.
 - Failure: The System SIP Server is offline, or none of the other services are running.

Presence Server

- Verify Connection to the Presence Server: Checks to see if a connection can be established with Presence Server.
 - Success: The Presence Server is online, running, and connection can be established with it.
 - Failure: The Presence Server is offline, not running, or connection cannot be established with it.
- Display All Groups: Requests a list of all user groups from the Presence Server.
 - Success: Returns a full list of all user groups.
 - Failure: The Presence Server is down, or unable to populate its list of groups and users. It's possible that the Database Server was down when the Presence Server was started so it wasn't able to obtain the information it needs to run properly.
- Presence Status is Not Displayed: Requests the status of the user from the Presence Server.
 - Success: The Presence Server is online and returns the user's status.
 - Failure: The Presence Server is offline or is not ready. It's possible that the Database Server was down when the Presence Server was started so it wasn't able to obtain the information it needs to run properly.
- Query Presence Server's Latest Call Logs: Requests a list of the last 10 call logs that were written by the Presence Server.
 - Success: Returns the last 10 call logs written by the Presence Server.
 - Failure: No call logs are returned. The Presence Server is either offline, is not ready, or the Radius Packets are not being sent to this UCC Server. If radius has not been configured, then it's not possible to see Call Logs being written.

- Display Current Subscribers to the Presence Groups: Requests the list of currently subscribed users of the Presence Server.
 - Success: Returns the list of subscribed users.
 - Failure: The Presence Server is offline, not ready, or there are no subscribed users.
- Display Current Active Calls: Requests the list of current active calls being made.
 - Success: Radius packets are being sent to this UCC Server. Returns the list of active calls.
 - Failure: The Presence Server is offline, not ready, or there are no active calls.

System Tracker

- Display Server Connection Statistics: Attempts to establish a connection with the System Tracker.
 - Success: The System Tracker is online, running, and connection can be established with it. Also returns the connection status of all Servers.
 - Failure: The System Tracker is offline, not running, or connection cannot be established with it.
- Server Statistics:
 - SIP Server:
 - Current state of this server.
 - Number of times this server went offline.
 - Current running duration of uptime.
 - CallController Server:
 - Current state of this server.
 - Number of times this server went offline.
 - Current running duration of uptime.
 - Database Server:
 - Current state of this server.
 - Number of times this server went offline.
 - Current running duration of uptime.
 - Presence Server:
 - Current state of this server.
 - Number of times this server went offline.
 - Current running duration of uptime.

Client Tests

- Servers are Disconnected: This tells if you can or cannot connect to all servers.
 - Success: All services: System SIP Server, CallController Server, Database Server, Presence Server, and System Tracker are all running.
 - Failure: One or more of the servers are not running.
- Don't See Phone Line: Checks to see if the you can make a phone call.
 - Success: It is able to make a phone call correctly.
 - Failure: The CallController Server is offline, the user is not associated with a phone, or the user's phone is disconnected.
- Can't Control IP Phone: Checks to see if the user can obtain phone lines.
 - Success: It returns a list of the user's phone lines (phone DN's).
 - Failure: The CallController Server is offline, the user is not associated with a phone, or the user's phone is disconnected.

- **Cannot Sign In:** Checks the Database for your account username and password.
 - Success: The Database is running and is able to verify correct username and password.
 - Failure: The Database Server is not running, or the account information used is incorrect.
- **Don't See Speed Dial Numbers:** Requests a list of Speed dial entries for this user from the Database Server.
 - Success: The Database Server was able to return all speed dial results.
 - Failure: The Database Server is either not running or speed dials may have not been created yet.
- **Don't See Personal Contacts:** Requests a list of all Personal Directory Contacts from the Database Server.
 - Success: The Database Server was able to return all Personal Directory Contacts.
 - Failure: The Database Server returned nothing. The Database Server may be offline or something could be blocking the query from being received by the Database Server. It's possible that the user may not have any Personal Directory Contacts.
- **Don't See Call Logs:** Requests a list of all Call Logs from the Database Server.
 - Success: The Database Server was able to return all Call Log results.
 - Failure: The Database Server returned nothing. The Database Server may be offline or something could be blocking the query from being received by the Database Server. It's possible that the user has no call logs.
- **Don't See Presence Info:** Requests a group list and user list from the Presence Server.
 - Success: Returns a full list of all user groups and users in those groups.
 - Failure: The Presence Server is down, or unable to populate its list of groups and users. It's possible that the Database Server was down when the Presence Server was started so it wasn't able to obtain the information it needs to run properly.

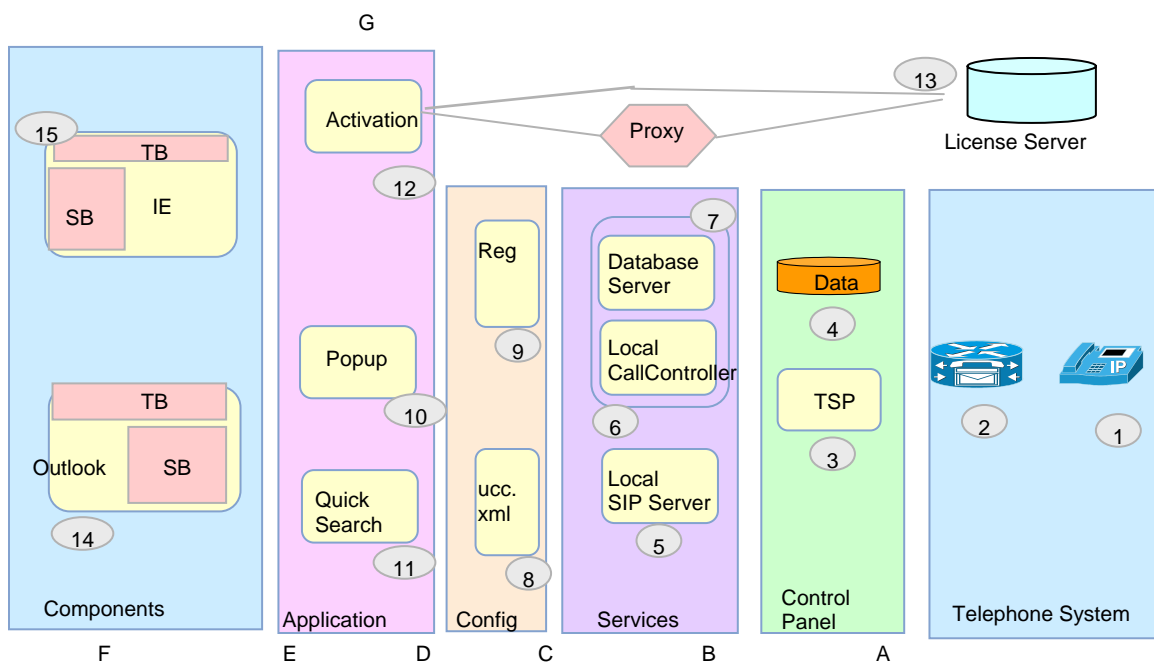
Troubleshooting

This chapter describes the common error conditions that occur with the Unified CallConnector Server and steps to solving these problems. The following are the areas of possible error conditions what will be covered:

UCC Server Troubleshooting

While using the Unified CallConnector, users may experience some common problems. This chapter focuses on troubleshooting these common problems. The troubleshooting information contains information on the nature of the problems and steps to solving these problems.

The Unified CallConnector system consists of multiple interacting components. These components are shown below with a summary of the impact of a failure in a component and the appropriate debugging tool.



Summary of Component Failure and Possible Failure Symptoms

- A. IP Phone Not Registered; Cannot/Lost Connection to CME Router:
- B. Cannot Register, Cannot Access/Corrupted Database: From Control Panel open Phone & Modems; Admin Tools ->ODBC ->System DSN
- C. GUI Gray; Unable to Connect/Login: Connectivity Status; Windows Services ->Stop/Start
- D. Reset Activation, Change Configuration: Windows Registry; UCC.XML in System32
- E. Cannot View Information (caller id, search results): Popup Options; UCC Debug Logs
- F. Toolbar Not Showing, IE/Outlook Crash: Unregister/Register.bat files
- G. Activation Timeout: Check firewall and IE settings

Cannot Register (TSP Mode) with the IP Phone

Description

The Cisco Unified CME router can be successfully pinged, but the Wizard or TSP cannot register to CME.

Possible Causes

- Invalid user name and password have been entered.
- Another TSP is running and using the same IP-Phone.
- Ephone has not been configured with the User Name and Password.

Procedures

- Step 1: Verify that the account information has been entered correctly. Enable CME Debug for IP Phone Registration
- Step 2: Re-enter the information and verify connectivity using the Wizard.
- Step 3: If the Wizard still displays the error, then contact your system administrator or service provider.

Activation Fails with Timeout

Description

When Activating Serial Number, the progress bar run through three times and posts an error message.

Possible Causes

- No access to the Internet from this PC
- Access to the UnifiedCallConnector.com site is not resolved/available.
- Firewalls may be blocking Popup access to internet.

Procedures

- Step 1: Verify that there is access to Internet. Browse to www.cisco.com.
- Step 2: Verify proxy settings on Internet Explorer, if proxy is in use.
- Step 3: Verify that the firewalls on the PC allow Popup external access
- Step 4: Verify that there is access to the License Server site. Browse to www.unifiedcallconnector.com.
- Step 5: If the Activation still displays the error, then contact your system administrator or service provider.

Phone Lines are Not Shown or Cannot Dial

Description

When trying to select a phone line from the Popup menu, the phone lines are not shown. Or attempting to dial, but the call is not being dialed out.

Possible Causes

- Client is not logged in.
- CallController Server is stopped or session to CME dropped.
- IP Phone has been disconnected or not in service.
- IP Phone has not been configured with the CME.

Procedures

- Step 1: Check whether logged in or logged out.
- Step 2: If IE or Outlook open, click on Cisco button in UCC Toolbar and check on servers in Connectivity.
- Step 3: Right-click on the red Popup system tray icon, select Options and Click on the Server tab.
- Step 4: If Server Tab displays the Logout button, then logged in. If it shows a Login and Reset button, then logged out.
- Step 5: If you are logged out, then type your Login name and password and click on the Login button. If not using UCC Server, uncheck/check 'Use Local TAPI Driver' to reset user-name and password.
- Step 6: Check whether or not the CallController Server is down from Option-Server or Toolbar->Cisco->Connectivity.
- Step 7: If in TAPI mode, check in Services to see if the ccCallController service is stopped. If it has stopped, then select the service and click the "play" icon on the top to start the service.
- Step 8: If in Server mode, check the CallController Server on the Server machine to see if it has stopped. If it has stopped, then start the service from the Services menu.
- Step 9: Verify that IP Phone is operating properly and all lines are visible.
- Step 10: If TAPI mode, use TAPITest tool to verify phone operation.
- Step 11: If Server mode, use the sharpshooter to isolate problems. If problem persists, collect debug and report the problem.

Call Logs Not Showing

Description

When you click on the Logs, none of the Call Logs are shown.

Possible Causes

- No Calls have been made.
- Presence Server is not writing Call Logs because it is stopped.
- Presence Server not receiving messages from the Radius Server.
- Your Login name isn't associated with a contact entry.
- Your contact's business phone number hasn't been filled in.

Procedures

- Step 1: Verify that Call Logs are not being shown. Make a phone call to any number and hang up. Open the Call Logs Window in Internet Explorer. Right-click on the menu and click refresh. If nothing is shown, proceed with the next step.
- Step 2: Check if the Presence Server on the Server Machine is stopped. On the Server Machine open the Services menu and hit the refresh button. If the Presence Service has failed

Parts of the Toolbar are Grayed out

Description

Some parts of the toolbar such as the presence status buttons and the QuickSearch box maybe grayed out. Ask customer which parts of toolbar are grayed to determine area of need.

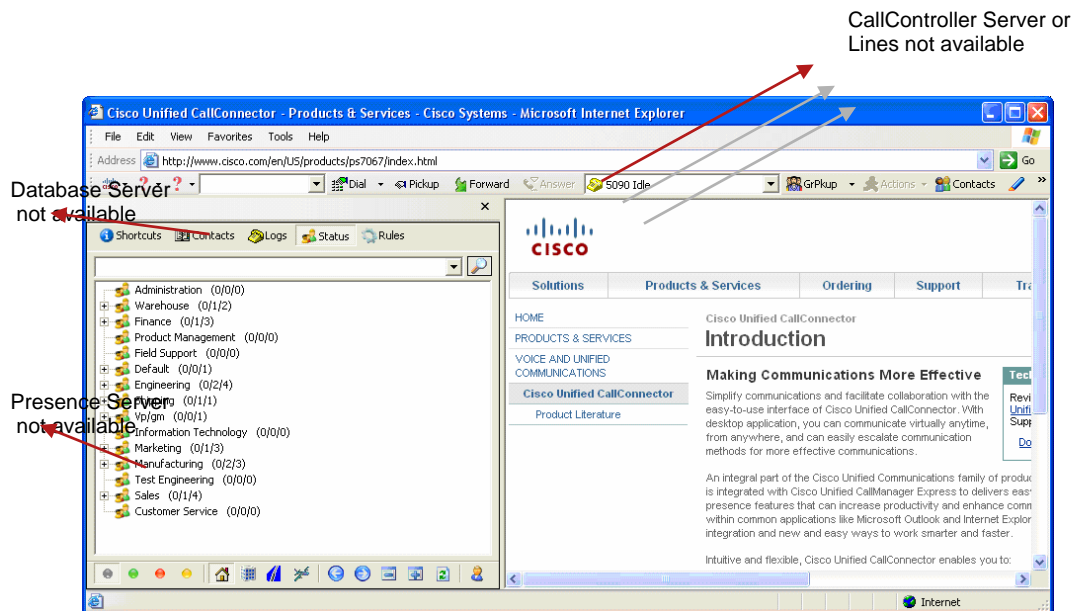
Possible Causes

- Auto Recovery has not been turned on (by default this is enabled).

Some services stopped working, need to determine cause (and restart service)

Procedures

- Step 1: Determine which servers are stopped using Toolbar->Cisco->Connectivity.
- Step 2: Enable Auto Recovery if disabled from toolbar or in UCC.XML file
- Step 3: Restart Internet Explorer or Outlook for auto-recovery to be enabled.
- Step 4: If Servers are stopped, restart the servers using Windows-Services or Popup-Services.



1. Local SIP Server not Available – All Objects Grayed Out
2. CallController Server Not Available – Line Display show “ No Phone Lines Available”
3. Presence Server Not Available – Status Window Grayed Out
4. Database Server Not Available – Shortcuts, Contacts, Logs Grayed Out

Presence Buttons are Grayed Out

Description

The Presence buttons on the toolbar are grayed out and cannot be used.

Possible Causes

Presence Server on UCC Server is stopped.

Procedures

- Step 1: View Services status using CTI Services Manager
- Step 2: Restart the Presence Server. On the Server machine, open the Services menu from Administrative tools in the Control Panel.
- Step 3: Select the ccPresenceServer item and press the play button at the top to start the service.
- Step 4: You may have to restart the application that you are running (Internet Explorer or Outlook) because the Presence buttons may not refresh when you change your availability and location.

Popup System Tray Icon Becomes Gray

Description

The red Popup icon in the System Tray becomes grayed out.

Possible Causes

- The Local SIP Server has stopped.
- The System SIP Server has stopped.
- The CallController Server has stopped and you cannot get phone lines.

Procedures

- Step 1: Check to see whether the Local SIP Server has stopped.
 - Step 2: Right-click on the Popup system tray icon.
 - Step 3: Then move the mouse over the Services menu item. A menu showing the status of the local services will appear.
 - Step 4: If the Local SIP Server is stopped, then please start the service by clicking on Start All Services.
 - Step 5: Check to see whether the System SIP Server has stopped. You can check this on the server machine that it is running from. In Control Panel\Administrative Tools\Services, you can verify if the System SIP Server has stopped.
 - Step 6: If it has stopped, right-click on the service and select start.
- Step 7: Check to see whether the CallController Server has stopped. If you are in TAPI mode, open Control Panel\Administrative Tools\Services. Check whether

ccCallController service has stopped. If it stopped, right-click on the service and select start to restart the service.

- Step 8: If you are in Server mode, check to make sure whether the CallController Server has stopped on the Server machine. You can check that from the Services menu. Find the service called CallController Server and see if it is started or stopped. If it stopped, right-click on the service and select start to restart the service.
-

Cannot Login

Description

You cannot login.

Possible Causes

- Wrong User information.
- Local SIP Server stopped (TAPI Mode).
- System SIP Server stopped (Server Mode).
- Database Server has stopped.

Procedures

- Step 1: Check whether you typed in the wrong user information.
- Step 2: The login information for TAPI mode and Server mode are completely different.
- Step 3: If you are unsure about what your username and password are for either modes or you don't have a username and password, talk to your system administrator or service provider for assistance.
- Step 4: Check whether the Local SIP Server has stopped. If it is stopped, there is no way for your client to communicate with the System SIP Server or Local CallController to log in.
- Step 5: On your machine, check in Services to see if the ccLocalSIPServer service is stopped. If it has stopped, then select the service and click the "play" icon on the top to start the service.
- Step 6: Check whether the System SIP Server has stopped. If you are logging in, in Server mode, the System SIP Server must be running to authenticate the user.
- Step 7: On the Server machine, check in Services to see if the ccSystemSIPServer service is stopped. If it has stopped, then select the service and click the "play" icon on the top to start the service.
- Step 8: Check whether the Database Server has stopped running. In order for the user to be logged in the System SIP Server (Server mode) or CallController (TAPI mode) needs to be able to access the database to authenticate the user.