



CCNA Voice Portable Command Guide

All the CCNA Voice 640-461 commands in one compact, portable resource

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Robert M. Cannistra Michael E. Scheuing



CCNA Voice Portable Command Guide

Robert M. Cannistra Michael Scheuing

Cisco Press 800 East 96th Street Indianapolis, IN 46240

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Robert M. Cannistra & Michael Scheuing

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Dedications

Robert M. Cannistra: To my wonderful and amazing family: my wife, Kara, and our two boys, Luca and Rylan. Without their love, encouragement, support, laughter, and smiles, I don't know what I would do.

Kara, you truly are an absolutely wonderful person and I'm so thankful to spend my life with you! Thank you for always maintaining a positive attitude and bringing happiness to everyone around you!

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To Nino: "It's gotta be done!"

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Icons Used in This Book



Workgroup Switch Voice-Enabled



IP Telephony Router



PC



IP Phone



Cell Phone



Network Cloud, White



File/Application Server



Cisco CallManager



Workgroup Switch



Phone



Cisco Unity Server



Cisco Unified Presence Server



Network Cloud, Gold



Voice-Enabled Router

Command Syntax Conventions

The conventions used to present command syntax in this book are the same conventions used in the IOS Command Reference. The Command Reference describes these conventions as follows:

- Boldface indicates commands and keywords that are entered literally, as shown. In actual configuration examples and output (not general command syntax), boldface indicates commands that are manually input by the user (such as a show command).
- Italics indicate arguments for which you supply actual values.
- Vertical bars (I) separate alternative, mutually exclusive elements.
- Square brackets [] indicate optional elements.
- Braces { } indicate a required choice.
- Braces within brackets [{ }] indicate a required choice within an optional element.

Introduction

Welcome to CCNA Voice! This *Portable Command Guide* was written to help give you another resource to utilize as you prepare for the CCNA Voice exam. While this book was designed to provide details for task-oriented and step-by-step administrative functions, it is not intended to be your only source of information for CCNA Voice. The step-by-step nature of this book provides the background information to help you further understand the material you learn.

We think that once you earn your CCNA Voice certification you will find yourself referring to this book as you administer your Cisco voice products. Since the book covers a wide variety of topics with examples as well as hints and tips, it could be a valuable resource for years to come as well!

Who Should Read This Book?

Whether you are studying for the CCNA Voice certification exam 640-461 ICOMM (Introducing Cisco Voice and Unified Communications Administration) v8.0 or just want to dive into the configuration of a Cisco Voice and Unified Communications Network, this book will be useful to keep on hand. This book takes a detailed, practical approach to the configuration and implementation of Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unify Connection, and Cisco Unified Presence utilizing Cisco routers, switches, and IP phones.

Readers will obtain the appropriate knowledge to proactively configure, monitor, maintain, and troubleshoot their organizations' Voice infrastructure by utilizing Cisco Voice and Unified Communications CLI and GUI. I (Robert) have been a consultant and instructor/professor for well over 11 years. Throughout my years of teaching technology, I have found that students learn best by using a mixed theoretical and practical approach. With this approach, students learn the theory behind a particular protocol or technology and then implement it in a practical fashion. This method blends the two primary styles of learning and provides the students with a complete understanding of the technology. This book is meant to be a standalone book in the sense that students and professionals would/could use this book to learn the concepts, the configuration, and the troubleshooting steps necessary for a successful implementation. However, this book can also be used by the professional who needs to simply implement to the *CCNA Voice Official Exam Certification Guide*, written by Jeremy Cioara and Michael Valentine, which goes into more theoretical depth on each topic.

How This Book Is Organized

Although you could read this book cover-to-cover, it is designed to be flexible and allow you to easily move between chapters and sections of chapters to cover only the material you need. If you do intend to read them all, the order in which they are presented is an excellent sequence.

Chapters 1 through 9 cover the following topics:

- Chapter 1, "Voice Fundamentals for Unified Communications": This chapter provides an overview on voice fundamentals, traditional voice with the PSTN, Cisco VoIP structure, and other protocols used in voice communication.
- Chapter 2, "Cisco Switch, Router, and Phone Fundamentals for Unified Voice": This chapter focuses on setting up the foundation for CME utilizing the CLI.
- Chapter 3, "Cisco Unified Communications Manager Express": This chapter focuses on the basic operation and configuration of Cisco Unified CME.
- Chapter 4, "Cisco Unified CME Features": This chapter focuses on the administration and configuration of several voice features within Cisco Unified CME.
- Chapter 5, "Cisco Unified Communications Manager (CUCM) Administration and Management": This chapter focuses on the administration and management of end users and devices in Cisco Unified Manager through the GUI.
- Chapter 6, "Cisco Unified Communications Manager (CUCM) Telephony and Mobility Features": This chapter focuses on the configuration and enablement of Telephony and Mobility features within CUCM through the GUI.
- Chapter 7, "Cisco Unity Connection and Cisco Unified Presence": This chapter focuses on voicemail integration with Cisco Unity Connection and the configuration of Cisco Unified Presence.
- Chapter 8, "Management, Monitoring, and Troubleshooting CUCM":

This chapter focuses on the common issues associated with a Cisco Unified Solutions implementation. Included is managing, monitoring, and troubleshooting CUCM and monitoring Cisco Unity Connection.

• Chapter 9, "Pulling It All Together": This chapter pulls the majority of the topics discussed within this book together into one advanced small- to medium-sized business voice network topology demonstrating how these technologies can work together to provide voice communication across a network infrastructure. This page intentionally left blank

CHAPTER 7 Cisco Unity Connection and Cisco Unified Presence

This chapter provides information and commands concerning the following topics:

- Cisco Unity Connection Administration Interfaces
- Configuring Class of Service in Cisco Unity Connection
- Configuring Partitions and Search Spaces in Unity Connection
- Configuring User Templates in Cisco Unity Connection
- Managing Users in Cisco Unity Connection
 - Adding users manually
 - Importing users via AXL from CUCM
 - Importing users with LDAP
 - Importing users with BAT
- Configuring Call Handlers in Cisco Unity Connection
- Cisco Unity Connection Reports
- Cisco Unified Presence Server Administration Interfaces
- Cisco Unity Connection and Cisco Unified Presence Backup and Restore



Topology



Cisco Unity Connection Administration Interfaces

Cisco Unity Connection

There are six administration interfaces for Cisco Unity Connection. Five interfaces are available via web-based GUI and one CLI available via SSH. It might be confusing to remember which login to use for a particular administration interface.

To help you avoid the confusion, Table 7-1 lists the name of the administration interface, the method to access the interface, and what username and password to use.

If you have more than one Cisco Unity Connection server in a cluster, be sure to perform all administration on the first node (Publisher).

Administration Interface	Access Method	Username/Password Combo
Cisco Unity Connection Administration	https:// <ipaddress>/ cuadmin</ipaddress>	Application Username/ Password
Cisco Unified Service- ability	https:// <ipaddress>/ ccmservice</ipaddress>	Application Username/ Password
Cisco Unified OS Admin- istration	https:// <ipaddress>/ cmplatform</ipaddress>	Platform Username/Pass- word
Disaster Recovery System	https:// <ipaddress>/drf</ipaddress>	Platform Username/Pass- word
Cisco Unity Connection Serviceability	https:// <ipaddress>/ cuservice</ipaddress>	Application Username/ Password
Command Line Interface	SSH to <ipaddress></ipaddress>	Platform Username/Pass- word
NOTE There is a web inter and manage their account. enables access to the Cisc	rface for end users to access the Their account must have a Cla communications As	heir voice messages lss of Service (COS) that ssistant (PCA)
End User Web Access	https:// <ipaddress>/ ciscopca</ipaddress>	End UserID / Password

Table 7-1 Cisco Unity Connection Administration Interfaces

TIP You can also access the various web GUIs by using the drop-down menu in the upper-right corner of the web page and then clicking the **Go** button.

NOTE You can switch between interfaces using the same username/password combo without logging in each time. For example, if you were already logged in to the Cisco Unified Serviceability interface and switched to the Cisco Unity Connection Administration interface, you would not need to log in again because they use the same username and password.

admin:?	Shows available commands
admin:help <command/>	Help for a command.
admin:show version active	Displays active system version.
admin:show version inactive	Displays if there are any other alternative versions installed. This is used when an upgrade is performed.
admin:utils service list	Displays a list of services and their status.
admin:show tech all	Displays useful information for Cisco TAC.
admin:utils network ping <ipaddress></ipaddress>	Pings an address and displays the result.

Table 7-2 Common CLI Commands

admin:utils network traceroute	Performs a traceroute to an IP address and
<ipaddress></ipaddress>	displays the result.
admin:quit	Logs you out and ends the management session.

TIP You can press the **Tab** key to autocomplete some commands. You can also press the **up-arrow key** to recall previously entered commands.

NOTE Complete words must be entered when issuing commands. A command such as **sh tech sys hardware** does not work because it does not use the complete words.

CAUTION Be careful when using the CLI. Some commands that can affect system stability have Are You Sure prompts, but not all. Take the time to research commands and be familiar with the effects before pressing the **Enter** key.

Configuring Class of Service in Cisco Unity Connection

This section refers to the network topology referred to in Figure 7-1 and provides configuration steps for Class of Service (COS) in Unity Connection.

The COS defines what features and permissions a user has access to. It also defines the maximum length of the recorded name, greeting, and message.

NOTE The web management interface differs in some ways from the CUCM because the menu items display along the side of the page vertically instead of along the top of the page horizontally. (See Figure 7-2.) Some similarities include the Navigation menu in the upper right with the **Go** button and that you must save your changes on the page before leaving or the changes would be lost.

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- Choose Class of Service > Class of Service. Click the Add New button. (Refer to Figure 7-2.)
- 3. Enter Employees_NY_COS as the Display Name.
- Under Licensed Features, check Allow Users to Access Voice Mail Using an IMAP Client. This allows users to use an IMAP email client to access messages for easier message management.
- **5.** Under Features, check **Allow Users to Use the Messaging Assistant**. This feature enables the user to access the Cisco Personal Communications Assistant (PCA), which is a web interface for users to manage their messages.
- 6. Under Message Options, uncheck Allow Users to Send Messages to System Distribution Lists because this option could be abused. (See Figure 7-3.)
- 7. Click the **Save** button.

Cisco Unity Conr cisco For Cisco Unified Comm	Intection Administration Navigation Cisco Unity Connection Administration V Go unications Solutions appadmin Search Documentation About Sign Out
	Search Class of Service Search Class of Service
Lisco Unity Connection Users Users Synch Users Gass of Service Class of Service Contact Conta	Search Class of Service Search Class of Service Class of Service Refresh Help Status
Supervision Uses System Distribution Lists System Call Handlers Directory Handlers Directory Handlers Directory Handlers Post Greeting Recordings #: Call Routing Message Storage Mailbox Storage Mailbox Storage	Delete Selected Add New Bulk Edit
Massage Aging Policy Massage Aging Policy Mallox Quotas Networking thick Locations VPIM Connection Location Passwords Dial Plan Partitions Search Spaces	

Figure 7-2 Adding a COS



Figure 7-3 Restricting Access to System Distribution Lists

Configuring Partitions and Search Spaces in Unity Connection

Partitions and Search Spaces serve a similar function in Cisco Unity Connection as they do in CUCM. Partitions are logical groupings of devices with similar reachability, and a Search Space is an ordered list of partitions.

Extensions must be unique within a Partition, but in a Search Space they do not need to be. So you can have overlapping extensions in a Search Space, like 0 (zero).

In Figure 7-4 the Partitions are organized at the top indicating three locations. Below the Partitions are the Search Spaces that contain an ordered list of Partitions for reachability. The Executives_SS Search Space can access NewYork_PT, Chicago_PT, and LosAngeles_PT, making it possible to do things like send a companywide broadcast message and perform directory searches. The Employees_SS for each location have access to only their own location, and the Marketing_SS Search Space has access to both NewYork_PT and LosAngeles_PT because there are Marketing teams in both locations.



Figure 7-4 Partition and Calling Search Space Relationships

When you are designing your dial plan, it is a good idea to logically separate the areas if possible so that features and functions, like Handlers and Directories, are sectioned from one another, increasing flexibility and lessening the chance for system conflict by overlapping numbers.

To configure a Partition, follow these steps:

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Dial Plan > Partitions. Click the Add New button.
- 3. Enter NewYork_PT in the Name field, and click the Save button.
- **4.** The page refreshes, and you can now enter **New York Employees** in the Description field; click the **Save** button.

To configure a Search Space, follow these steps:

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Dial Plan > Search Spaces. Click the Add New button.
- 3. Enter Executives_SS in the Name field, and click the Save button.
- **4.** The page refreshes, and you can now enter **New York Employees** in the Description field; click the **Save** button.
- **5.** Move the Partitions from the Unassigned Partitions field up to the Assigned Partitions field by selecting the Partition you want to move and then using the up arrow between the fields. You can then rearrange the order of the Partitions in the Assigned Partitions field using the arrows on the side of the field. (See Figure 7-5.)

Cisco Unity Conn Cisco For Cisco Unified Commu	ection Administration nications Solutions	Navigation Cisco Unity Connection Administration 🚽 Go appadmin Search Documentation About Sign Out
▼ Cisco Unity Connection	Edit Search Space (Executives SS)	Search Search Spaces > Edit Search Space (Executives_SS)
Class of Service Membership Templates - User Templates - Call Handler Templates - Contact Templates - Contacts	Search Space Refresh Help Status A This search space does not contain any partitions.	
Contacts Distribution Lists System Distribution Lists Call Management	Created Search Space(s) Save Delete Previous Next County Space(s)	
System Call Handlers	Search space Name* Executives_SS Description Executive Search Space Partition Membershin	
Message Storage Mailbox Stores Mailbox Stores Membership Message Aging Policy Mailbox Quotas	Assigned Partitions NewYork_PT Chicago_PT	*
Networking	<u> </u>	*
	Unassigned Partitions unity Partition LosAngeles_PT	^
Dial Plan Partitions Search Spaces		
System Settings General Configuration Cluster Ecxternal Services	Save Delete Previous Next Fields marked with an asterisk (*) are required.	
Roles +		

Figure 7-5 Rearrange the Partitions by Using the Arrows

Configuring User Templates in Cisco Unity Connection

Before entering large numbers of new users, you can save a lot of time by building a User Template that applies the same settings to all the newly imported users.

NOTE Changes to the templates after the users have been imported have no effect on those previously imported users.

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Templates > User Templates. Click the Add New button.
- **3.** Enter **NewYorkEmployees** in the Alias field and **New York Employees** in the Display Name field. Leave the other settings as default, and click the **Save** button. (See Figure 7-6.)

Cisco Unity Cor cisco For Cisco Unified Com	nection Administration nunications Solutions	Navigation Cisco Unity Connection Administration - Go appadmin Search Documentation About Sign Out
 Cisco Unity Connection 	New User Template	Search User Templates 🔸 New User Template
Users	User Template Reset Help New User Template Name Alias* Name New York Employees Hailbox Store Mailbox Mai	

Figure 7-6 Save the User Template

- **4.** The page refreshes with more settings available. Select **NewYork_PT** for the Partition.
- 5. Select NYEmployees_SS for the Search Scope.
- **6.** Select **Employees_NY_COS** for the COS, and click the **Save** button. (See Figure 7-7.)

Cisco Unity Conn Cisco Unified Commu	ection Administration	Navigation Cisco Unity Connection Administration V Go appadmin Search Documentation About Sign Out
Cisco Unity Connection		Search User Templates 🕨 Edit User Template Basics
Users Users Import Users Class of Service Class of Service Users User Templates	Edit User Template Basics (NewYorkEmployees) User Template Edit Refresh Help Save, Delete Previous Next Status Created User Template(s) Name tight	(NewYorkEmployees)
Call Handler Templates Contact Templates Contact Templates Contacts Distribution Lists System Distribution Lists Call Management System Call Handlers - Directory Handlers - Interview Handlers Post Greeting Recordings Bir Call Second	Alise* NewYorkEmployees Display Name* New York Employees Display Name Generation @ First Name, Then Last Name	
Message Storage Malibox Stores Malibox Stores Membership Message Aging Policy Malibox Quatas Networking Contection Location Passwords VPIM Connection Location Passwords Dial Plan Partitions Search Spaces *********************************	Active Schedule All Hours Set for Self-enrollment at Next Sign-In Sign to in Directory Sign Hon-Delivery Receipts on Failed Message Delivery Sign PIW When Calling From a Known Extension Use Short Calendar Caching Poll Interval Location Address Building	View

Figure 7-7 Select Additional COS Options

Managing Users in Cisco Unity Connection

There are four ways to add users to Cisco Unity Connection. Users can be added manually, by synching to a CUCM, by using LDAP, and finally by using the Bulk Administration Tool (BAT).

Adding Users Manually

Adding users manually is typically used after the system is up and running and you are just adding only a few users at a time. If you have multiple users to add, use one of the other methods here to help speed up the process and add the users in a consistent manner.

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Users > Users, and then click the Add New button.
- **3.** Because you already created a User Template, be sure it is selected in the **Based on Template** field. In the Alias field, enter **jsmith** and in the **Extension** field, enter **1010.** The other fields are optional, but usually you should enter the user's first and last name in the appropriate fields.
- 4. Click the Save button. The user is added and the template applied to the new user.
- **5.** After the user is successfully created, the **Edit** menu appears. The Edit menu enables the administrator to change the password, roles, message settings, notification devices, and much more. (See Figure 7-8.)



Figure 7-8 Edit Menu

Importing Users via AXL from CUCM

Users can be synched with end users that are already configured on the CUCM system using Administrative XML (AXL).

- Make sure that the AXL service is activated. Using a web browser, open https://10.0.1.21/ccmservice, and enter the Application username and password.
- Choose Tools > Service Activation and check the box next to Cisco AXL Web Service. Then click the Save button. (See Figure 7-9.)
- **3.** Using the drop-down navigation menu on the upper right of the page, select **Cisco Unity Connection Administration**, and click the **Go** button.
- Choose Telephony Integrations > Phone System. Select PhoneSystem; then choose Edit > Cisco Unified Communications Manager AXL Servers. (See Figure 7-10.)
- Click the Add New button, and enter the CUCM IP Address 10.0.1.20 in the IP Address field. Then enter 8443 in the Port field.

NOTE The username and password must be for a user that has the Standard AXL API Access role assigned in CUCM.

cise	Cisco Unified Serviceability For Cisco Unified Communications Solutions	Navigation Cisco Unified Serviceability - Go		
Alarm -	Alarm + Irace + Togis + Samp + Help +			
Service	Activation	Related Links: Control Center - Feature Services 👻 Go		
	Save 🕫 Set to Default 🔿 Refresh			
-Statu	S			
0,50	ius : Ready			
Selec	t Server			
Serve	r* unity T Go			
C Cł	neck All Services			
Datab	ase and Admin Services			
	Service Name	Activation Status		
V	Cisco AXL Web Service	Activated		
V	Cisco UXL Web Service	Activated		
Perfo	rmance and Monitoring Services			
	Service Name	Activation Status		
V	Cisco Serviceability Reporter	Activated		
Direct	tory Services			
	Service Name	Activation Status		
V	Cisco DirSync	Activated		
- Sav	e Set to Default Refresh			
1 5				

Figure 7-9 Activating Cisco AXL Web Service

Phone System E	Basics	(PhoneSystem)	Search Phone Syster Related Links
Phone System	Edit	Refresh Help	
Save Del	P	hone System Basics	
	C	isco Unified Communications M	lanager AXL Servers
Phone System Phone System N	Phone System Associations		

Figure 7-10 Phone System Basics Edit Menu Choices

- 6. Click the Save button. (Figure 7-11.) Click the Test button to ensure that the configuration is correct.
- 7. Choose Users > Import Users. Select PhoneSystem for the Find End Users In field, and click the Find button.
- **8.** Choose **NewYorkEmployees** for the Based on Template field, and then check the boxes next to the users that were found as the search result. Click the **Import Selected** button. (See Figure 7-12.)

cisco Unity Co For Cisco Unified Co	mnection Administration	Navigation Cisco Unity Connection Administration 🚽 G appadmin Search Documentation About Sign O
Cisco Unity Connection		Search Phone Systems > Phone System Ba
System Settings - General Configuration - Cluster - Review - Authentication Rules - Roles - Restriction Tables - Licenses - Holiday Schedules	Edit AXL Servers Phone System Edit Refresh Help Save Status Test message successfully sent to AXL serv AXL Servers	Related Links Check Telephony Configuration -
Global Nicknames Subject Line Formats Attachment Descriptions Enterprise Parameters Service Parameters Plugins Fax Server B-LDAP	Delete Selected Add New Order 0 0 10.0.1.20 Delete Selected Add New	IP Address Port 8443 Test
B-SMTP Configuration	Username	ccxadmin
Telephony Integrations Phone System Port Group Port Trunk	E	5.0 or Greater (SSL) V
m security Tools Task Management Bulk Administration Tool Custom Keypad Mapping B Migration Utilities Grammar Statistics ShTP Address Search Show Deendencies		

Figure 7-11 AXL Test Message Successful

cisco For Cisco Unified Commu	inications Solutions		appadmin Search Docu	umentation About Sign Out
Cisco Unity Connection	Import Users			Import Use
Users User User	Status Status Pround 2 Unified Comm Find End Users In Phones Where Alias Be Import With Based on Template NewY Directory Search Result Import Selected Im	Help unications Manager User(s) ystem ystem yst	End	
Orectory Handlers Interview Handlers Past Greeting Recordings Ith Call Routing Message Storage Mailbox Stores Mailbox Stores Mailbox Stores Mailbox Stores Mailbox Stores Mailbox Stores Mailbox Cuotas Hetworking Units Locations	Alias A IO2 IO03 Import Selected Import Selected	First Name Charles John port All	Last Name Smith Jones	Extension 1002 1003

Figure 7-12 Import Selected Users

NOTE The end users to be imported from CUCM must have a device associated with them and also a primary extension assigned, or they will not appear in the search results. On the End User Configuration page in CUCM in the Device Information section,

make sure there is a controlled device configured. After that is done, scroll down to the Directory Number Associations section, and select the correct DN and Partition for the Primary Extension field.

9. Now choose **Users** > **Users**, and click the **Find** button to verify that the users were imported correctly.

Importing Users with LDAP

Table 7-3 contains the details used when configuring LDAP on Cisco Unity Connection.

Table 7-3	LDAP	Configuration
-----------	------	---------------

LDAP Configuration Name: Corporate LDAP	Name used in Unity Connection to iden- tify this LDAP Directory
LDAP Manager Distinguished Name: mike@voicepcg.local	User with administrative rights to LDAP
User Search Base: cn=Users, dc=voicepcg, dc=local	Defines where Unity Connection looks for users
LDAP Server Information>IP Address: 10.0.1.23	Defines the IP address of the LDAP server

- 1. Make sure that the Cisco DirSync service is activated. Using a web browser, open https://10.0.1.21/ccmservice, and enter the Application username and password.
- 2. Choose Tools > Service Activation, and check the box next to Cisco DirSync then click the Save button.
- **3.** Using the drop-down navigation menu on the upper right of the page, select **Cisco Unity Connection Administration**, and click the **Go** button.
- 4. Choose System Settings > LDAP > LDAP Setup.
- **5.** Check the box for **Enable Synchronizing from LDAP Server**, and click the **Save** button. (See Figure 7-13.)
- Choose System Settings > LDAP > LDAP Directory Configuration, and click the Add New button.
- In the LDAP Configuration Name field, enter Corporate LDAP. In the LDAP Manager Distinguished Name field, enter mike@voicepcg and enter the password twice below. In the LDAP User Search Base field, enter cn=Users, dc=voicepcg, dc=local and in the LDAP Server Information > IP Address field, type 10.0.1.23.
- **8.** Click the **Save** button. Unity Connection attempts to make a connection to the LDAP server, and if it is successful, it saves the configuration. If the connection fails, an error message displays indicating what failed. (See Figure 7-14.)

CISCO Unity Conne CISCO For Cisco Unified Commun	ction Administration ications Solutions	Navigation Cisco Unity Connection Administration Go appadmin Search Documentation About Sign Out
Cisco Unity Connection	LDAP Setup	LDAP Set
 System Settings A General Configuration Cluster Global Schedules Schedules Service Parameters Pugins Fax Server B-LDAP Directory Configuration LDAP Authentication Advanced LDAP Settings Telephony Integrations Phone System Pont Group Pont Group Service Ponts Service Ponts 	LDAP Setup Refresh Help Status Update successful Save IDAP System Information IDAP Server LDAP Server LDAP Server LDAP Attribute for User ID sAMAccountName Save Fields mBriced with an asterisk (*) are required.	

Figure 7-13 LDAP Setup

Restriction Tables						
- Licenses	-I DAP Directory Information					
	LDAP Configuration Name*	Corporate LD	DAP		1	
Schedules	LDAP Manager Distinguished Name*	mike@voicep	co.local			
Holiday Schedules	LDAP Password*		.,			
Global Nicknames	Confirm Password*					
-Attachment Descriptions	LDAP User Search Base*	cn=lisers do	-voicence de-local			
Enterprise Parameters	LDAP Custom Filter	< None >	.=voicepog, dc=ideal			
Service Parameters		< NOTE >		•1		
-Fax Server -LDAP -LDAP Setup -LDAP Directory Configuration -DAP Authentication -Advanced LDAP Settings	Perform Sync Just Once Perform a Re-sync Every* Next Re-sync Time (YYYY-MM-DD hh	rmm)* 2012-	07-17 00:00	AY .		
LDAP Custom Filter	Cisco Unified Communications Manage	er User Fields	LDAP User Fields	Cisco Unified Com	nunications Manager User Field	ds I
B SMTP Configuration	User ID		sAMAccountName	First Name		1
H: Advanced			middleName 👻	Last Name		5
H-Advanced Telephony Integrations	Middle Name					
B-Advanced Telephony Integrations Phone System	Middle Name Manager ID		manager	Department		0
Advanced Telephony Integrations Phone System Port Group	Middle Name Manager ID Phone Number		manager telephoneNumber 👻	Department Mail ID		-
B-Advanced Telephony Integrations Phone System Port Port Trunk B-Security E	Middle Name Manager ID Phone Number LDAP Server Information Host Name or IP Address for	Server*	manager telephoneNumber 👻	Department Mail ID	LDAP Port [*] Use SSL	+
Bi-Advanced Telephony Integrations —Phone System —Port Group —Port —Trunk Bi-Security Tools	Middle Name Manager ID Phone Number LDAP Server Information Host Name or IP Address for 10.0.1.23	Server*	manager telephoneNumber 👻	Department Mail ID	LDAP Port [*] Use SSL	+

Figure 7-14 Save the LDAP Configuration

9. When the test completes and the page refreshes, click the new button labeled **Perform Full Sync Now** on the bottom. (See Figure 7-15.)

	P Server Information			
	Host Name or IP Address for Server [*]			
	10.0.1.23			
	Add Another Redundant LDAP Server			
Sav	e Delete Copy Perform Full Sync Now Add New			

Figure 7-15 Performing an LDAP Sync

- Choose Users > Import Users. In the Find End User In drop-down, select LDAP Directory, and click the Find button.
- **11.** A list of users in LDAP will be returned. Select the **NewYorkEmployees** template. Next, check the box next to the users you would like to import, and click the **Import Selected** button. (See Figure 7-16.)

CISCO For Cisco Unified Commi	unications Solutions		app	admin Search Document	ation About Sign
Cisco Unity Connection	Import Users				
3 Users	Find End Users 1 Find End Users 1 Where Alias Directory Search	Refresh Help P User(s) n (DAP Directory • •) Begins With •) ate NewYorkEmployees ch Results etc. [mont All 25 •	T	End.)	
	Alias	Eirst Name	Last Name	Phone Number	Extension
Interview Handlers	mike	Mike	Smith		
Post Greeting Recordings	✓ user1	User	One	1001	1001
Message Storage	V user2	User	Two	1002	1002
Mailbox Stores	✓ user3	User	Three	1003	1003
Mailbox Stores Membership	Ø user4	User	Four	1004	1004
Message Aging Policy	Ø user5	User	Five	1005	1005
Networking H-Links Locations VPIM	Import Selecte	d Import All			

Figure 7-16 Import Users Found in LDAP

12. Choose Users > Users to verify that the users were imported successfully.

Importing Users with the Bulk Administration Tool (BAT)

Adding users with the Bulk Administration Tool (BAT) in Cisco Unity Connection is similar to using BAT in CUCM. There are three basic tasks that need to be done to import users using BAT in Cisco Unity Connection.

1. Select and export the comma separated value (CSV) file to your workstation.

- 2. Add the users to the downloaded CSV file.
- 3. Upload the CSV file, and import the users into Cisco Unity Connection.

NOTE For the procedure required to add users with BAT to CUCM, see the Chapter 5, "Cisco Unified Communications Manager (CUCM) Administration and Management," section "Adding End Users and Phones with the Bulk Administration Tool (BAT)."

Following is the procedure to import users with BAT in Cisco Unity Connection:

- 1. Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Tools > Bulk Administration Tool.
- 3. In the Select Operation section, click the radio button next to Export.
- 4. In the Select Object Type section, click the radio button next to Users with Mailbox.

CAUTION Updating or creating large numbers of users can negatively impact the performance of the system and should be done only during a maintenance window.

5. In the **Select File** section, type **unity_connection.csv** in the CSV File field. Click the **Submit** button. (See Figure 7-17.)

Figure 7-17 Export CSV File with the Bulk Administration Tool (BAT)

6. After the export operation finishes, the Status area at the top of the page generates a link that you can use to download the file. Click **Download the Export File.** (See Figure 7-18.)

deb Cisco Unity Connection Administration ×	+		-
Cisco Unity Conne Cisco For Cisco Unified Commun	ection Administration ications Solutions	Navigation Cisco Unity Conr appadmin Search Docume	nection Administration 🚽 Go entation About Sign Out
✓ Clasco Unity Connection General Configuration -Cluster -Authentication Rules -Roles -Schedules -Holiday Schedules -Global Nichannes -Stroice Parameters -Flugins -Fax Server -Nuance Server Code B-DAP B-Marcad B -Toles System -Port -Trunk B -Tools Custom Keyzad Mapping B'Migration Utilities -Gramme Statistics -ShTP Address Search -Shour Domodencies	Bulk Administration Tool Bulk Administration Tool Refresh Help Submit Cancel Display Last Operation Status Source Display Last Operation Status Source Download the Export File Select Operation Create Update Do Not Delete Users With Items in Their Mailboxe Select Object Type Select Object Type Select File CSV File (UTF-8 or UTF-16 encoding only)* unity_con Gubmit Cancel Display Last Operation Fields marked with an asterisk (*) are required. Callers may experience delays when you create or up hours.	successes: 2, Number of failures: 0 is Distribution Distribution List Members inection.csv pdate large numbers of users. Consider d	Bulk Administration Tool

Figure 7-18 Download the Export File

7. Open the downloaded file with Microsoft Excel or other software that can edit the CSV file. There are many columns to fill in, but just use the following six columns: Alias, FirstName, LastName, DisplayName, Extension, and ListInDirectory. The column letters are included in Figure 7-19, and other columns are hidden that you are not using right now. Add the users as indicated here, and save the edited CSV file.

	A	0	R	Y	AV	
1	Alias	FirstName	LastName	Extension	ListInDirectory	
2	user1	User	One	1005	1	
3	user2	User	Two	1006	1	
4	user3	User	Three	1007	1	
5	user4	User	Four	1008	1	
6					13	

Figure 7-19 Complete the Columns with User Information

- **8.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 9. Choose Tools > Bulk Administration Tool.
- 10. In the Select Operation section, click the radio button next to Update.

- **11.** In the **Select Object Type** section, click the radio button next to **Users with Mailbox**.
- **12.** In the **User Template** section, click the radio button next to **Yes**, and select **NewYorkEmployees** in the drop-down menu.
- In the Select File section, type unity_connection.csv in the CSV File field. In the Failed Objects Filename field, type failed.csv. Click the Submit button. (See Figure 7-20.)

Figure 7-20 Upload the BAT File to Import the Users

14. A status section appears and shows the progress of the import. (See Figure 7-21.) After the operation is complete, you can then choose **Users > Users** to verify that the users were indeed imported. (See Figure 7-22.)



Figure 7-21 BAT Import Successful

$\frac{d}{d}$ Cisco Unity Connection Administration ×	-	
aluda Cisco Unity Conn	tion Administration Navigatio	n Cisco Unity Connection Administration 🚽 Go
CISCO For Cisco Unified Commu	ations Solutions appadmin	Search Documentation About Sign Out
▼ Cisco Unity Connection	User Refresh Help	
E Users		
Users	- Status	
Import Users	A	
Synch Users	Found 9 User(s)	
Class of Service		
Class of Service	Search Limits	
Class of Service Membership	Limit search to All	
E Templates		
····User Templates		
····Call Handler Templates	Users (1 - 9 of 9)	Pows per Page 25
Contact Templates		Nons per ruge 15
Contacts	Find Users where Alias	Find
Contacts		
Distribution Lists	Alias Extension First Name	Last Name Display Name
System Distribution Lists	appadmin appadmin	appadmin
Call Management		Operator
System Call Handlers		
Directory Handlers	Replication Replication	Agent Replication Agent :
Interview Handlers	undeliverablemessagesmailbox 99999	Undeliverable Messages
Post Greeting Recordings		Neuroine Circultuite Connection
H-Call Routing	DirtyConnection Cisco Unity	Messaging Cisco Unity Connection System Messaging System
Hessage Storage	Queer1 1005 Licer	One Licer One
Mailbox Stores		
Mailbox Stores Membership	<u>user2</u> 1006 User	Two User Two
Mailbox Quotas	user3 1007 User	Three User Three
Message Aging	🕅 🚨 user4 1008 User	Four User Four
Links Ring		
C LINKS	Delete Selected Add New Bulk Edit Show Dependencies	
LUCAUOIS		
Connection Location Parenter	Q	
E Unified Messaging	Cocal User	
Unified Massaging	Remote User	
III F	Cisco Unity User	

Figure 7-22 Verifying That the Users Were Imported

Configuring Call Handlers in Cisco Unity Connection

A call handler can serve multiple functions in Cisco Unity Connection. A call handler can answer calls, take messages, be part of an auto-attendant, play a recorded announcement, and transfer calls to users or other call handlers.

In this example, you create a call handler with which a user can press 0 to go to the operator and press 9 for the directory.

- **1.** Using a web browser, open https://10.0.1.21/cuadmin, and enter the Application username and password.
- 2. Choose Call Management > System Call Handlers. Click the Add New button.
- 3. Enter Main_Menu_CH in the Display Name field.

TIP You can enter a name followed by some indication of what the name refers to. For example, here you can use **Main_Menu_CH** for Main Menu Call Handler. If you are making a new Partition, use **Menu_PT** to indicate it is a Menu Partition. Appending a descriptor such as _CH or _PT helps when reviewing traces and log files to identify configured items.

- 4. Type 5000 in the Extension field, and click the Save button.
- Select NewYork_PT for the Partition, and click the Play/Record button to record the Main Menu. Click the Save button. (See Figure 7-23.)



Figure 7-23 Record the Main Menu

6. Choose Edit > Caller Input. (See Figure 7-24.)

Edit Call Handler Basics (Main_Menu_CH) Search Call Handlers >			
Call Handler	Edit	Refresh Help	
<u>S</u> ave D	0	Call Handler Basics	
Call Handlor	1	ransfer Rules	
Display Name	(Caller Input	
	0	Greetings	
Creation Time	F	ost Greeting Recording	
Phone System		lessage Settings	
Active Schedu		Call Handles Owners	✓ View
🛙 Use Syster	трега	uit nime zone	
Time Zone	(GI	IT-05:00) America/New_Y	ork 👻
Language	O	Use System Default Langu	age

Figure 7-24 Edit the Caller Menu Options

- 7. Select the 0 key. (See Figure 7-25.)
- 8. Select the radio button next to **Call Handler**, and select **Operator** from the menu. When users dial 0 from the menu, they will be connected to the operator. Attempt transfer means that the system will transfer the call to the operator's phone. If you choose Go Directly to Greetings, the operator will not have a chance to answer the call, and the operator's greeting starts playing.
- 9. Click the Save button. (See Figure 7-26.)

Cisco Unity Conn Cisco For Cisco Unified Commu	ection Adr	ninistration ^{ions}	Navigation <mark>Cisc</mark> appadmin Sea	o Unity Connection Administration 🚽 Go arch Documentation About Sign Out
 Cisco Unity Connection 	Caller Input		Search Call Handlers 🕨 Edit Call Har	ndler Basics (Main_Menu_CH) Caller Inpu
Users Users Synch Users	Call Handler	Edit Refresh Help		
Class of Service	Caner Inp	at Keys	Tourset	Chalue
Class of Service		Cand college to	Ciae In	. Status
Tamplatar	1	Serio caller to	Sign-In	Locked
Liser Templates	±	Skip greeting		Locked
Call Handler Templates		Ignore key		Unlocked
Contact Templates	1	Ignore key		Unlocked
Contacts	4	Ignore key		Unlocked
LContacts	2	Ighore key		Unlocked
Distribution Lists	4	Ignore key		Unlocked
System Distribution Lists	2	Ighore key		Unlocked
Call Management	2	Ignore key		Unlocked
System Call Handlers	Z	Ignore key		Unlocked
Directory Handlers	8	Ignore key		Unlocked
Interview Handlers	9	Ignore key		Unlocked
Post Greeting Recordings		an and here and		
Call Routing	Wait for Add	tional Digits [1500 milliseconds		
Message Storage				
Mailbox Stores	Prepend Di	gits to Dialed Extensions		
Mailbox Stores Membership	E Saphla			
Message Aging Policy	and chable	-		
Mailbox Quotas	Digits to	Prepend		
Networking				
El-Links	gave			
Locations				
VPIM				
Connection Location Passwords				
🖽 Dial Plan				
Partitions				

Figure 7-25 Change the Options for "0"

Cisco Unity Connection	Search Call Handlers > Edit Call Handler Basics (Main_Menu_CH) > Caller Input > Edit Calle
Lisco Unity Connection Users Users Users Users Class of Service Class of S	dit Caller Input (0) Search Call Handlers → Edit Call Handler Basics (Main_Menu_CH) → Caller Input → Edit Caller Call Handler Edit Refresh Help Save Edit Caller Input Key 0 Ignore Additional Input (Locked) Action Call Action Ignore Extension Description Transfer Type Release to Switch Rings to Wait For 4 Call Handler Operator Go Directly to Greetings Interview Handler Go Directly to Greetings User with Mailoox 0 de Directly to Greetings User with Mailoox 0 de Directly to Greetings Save Save Save Save Save Save Save Save

Figure 7-26 Transfer to the Operator Call Handler

- **10.** Choose **Edit > Caller Input**. Select the 9 key. This is the Directory Key.
- Select the radio button next to Directory Handler, and select System Directory Handler. Then click the Save button.

Choose Edit > Greetings. There are multiple greetings available. (See Figure 7-27.)

Cisco Unity Conn cisco For Cisco Unified Commu	ection Ac	iministration utions	Navigation Cisco appadmin Sear	Unity Connection Administration Go Ch Documentation About Sign Out
 Cisco Unity Connection 	Greetinas		Search Call Handlers 🕨 Edit Call Ha	ndler Basics (Main_Menu_CH) > Greeting
Users Users Import Users Synch Users	Call Handl	er Edit Refresh Help		
Class of Service	Greetin	igs		
Class of Service	Enabled	Greeting	End Date	Source
L. Class of Service Membership		Alternate		System
Templates	E1	Busy	1777)	System
User Templates		Error	No End Date	System
Call Handler Templates		Internal		System
E Contacts	E	Closed		System
Contacts	121	Standard	No End Date	System
Distribution Lists		Holiday		System
System Distribution Lists				
Gan Handgement System Call Handlers Directory Handlers Interview Handlers Post Greeting Recordings B-Call Routing	Save All dates a	and times displayed in (GMT-05	:00) Eastern Time (US & Canada)	
Message Storage Mailbox Stores Mailbox Stores Membership Message Aging Policy Mailbox Quotas				
Networking				
B-Links Locations VPIM				
Dial Plan Partitions				

Figure 7-27 Greetings

Table 7-4 provides details about how the greetings are used and what greetings override other greetings.

Greeting Type	Greeting Override?	Description
Alternate	Overrides all other greet- ings	Useful for special situa- tions like out of office for an extended period of time.
Busy	Overrides standard, inter- nal, closed, and holiday greetings	Plays when the target's extension is busy.
Error	None	Plays when a caller enters invalid digits in a call han- dler/mailbox.
Internal	Overrides standard, closed, and holiday greetings	This greeting is for internal callers and tends to be more informal or adds in- formation that only internal callers need to know like, "I am in the Sales Meeting in Room 1776 today."

 Table 7-4
 Greeting Descriptions

Greeting Type	Greeting Override?	Description
Closed	Overrides standard greeting	Plays when the business is closed according to the active schedule.
Standard	None	Plays when not overridden by another greeting.
Holiday	Overrides the standard and closed greeting	Plays when the business is closed for a holiday as specified in the active schedule's holiday dates.

- **13.** Select the **Standard** greeting, and record a message for callers indicating that they can dial 0 for the operator or 9 for the directory. Click the **Save** button.
- Choose Edit > Message Settings. Uncheck Callers Can Edit Messages, and change the Message Recipient to User with Mailbox. Then select user5. Click the Save button. (See Figure 7-28.)

Cisco Unity Com For Cisco Unified Comm	nection Administration	n	Navigation Cisco Unity Connection Administration - Go appadmin Search Documentation About Sign Out
Cisco Unity Connection Users Users Users Users Synch Users Class of Service Class of Service	Message Settings Maximum Message Length* 3(Callers Can Edit Messages Message Urgency ® Mark Normal © Mark Vorgent	00 seconds	
Head of the set wide Memorrania period to the set of the set	Ak Callers Ak Caller Call Action Acter Call Action Call Action Call Action Call Action Call Action Acter Call Action Call Acter Call Action Call Acter Call Action Call Acter Call Act	userS All Voice Mail Users & for Dispatch Delivery p v v v v v v v v v v v v v v v v v v	•
Partitions	Fields marked with an asterisk	(*) are required.	

Figure 7-28 Save Call Handler Message Settings

15. Choose the owner of the call handler to administer the greetings and other settings. Choose Edit > Call Handler Owners, and click the Add User button. A new window opens with the users available to be the call handler owner. Check jsmith and click Add Selected User. Then click the Close button. (See Figure 7-29.)

_ Status			
D Found 8 User(s) That Can Be Added to Call Handler			
Call Handler Potential Owner Search Results			
Find Call Handler Owner to Add Where Display Name Begins With	Eind		
Add Selected User 25 Rows Per Page			
Alias	Display Name		
undeliverablemessagesmailbox	Undeliverable Messages		
operator	Operator		
🕅 jsmith	John Smith		
1002	Charles Smith		
1003	John Jones		
user1	User One		
user4	User Four		
user5 User Five			
Add Selected User			
Close			

Figure 7-29 Add Selected User

Cisco Unity Connection Reports

Cisco Unity Connection includes many built-in reports that you can run to monitor and troubleshoot the system.

- **1.** Using a web browser, open https://10.0.1.21/cuservice, and enter the Application username and password.
- 2. Choose Tools > Reports. (See Figure 7-30.)

The reports can be viewed as a web page, comma-separated value (CSV) or PDF.

Reports
Phone Interface Failed Logon Report
Users Report
Message Traffic Report
Port Activity Report
Mailbox Store Report
Dial Plan Report
Dial Search Scope Report
User Phone Login and MWI Report
User Message Activity Report
Distribution Lists Report
User Lockout Report
Unused Voice Mail Accounts Report
Transfer Call Billing Report
Outcall Billing Detail Report
Outcall Billing Summary Report
Call Handler Traffic Report
System Configuration Report
SpeechView Activity Report By User
SpeechView Activity Summary Report

Cisco Unified Presence Server Administration Interfaces

The Cisco Unified Presence Server uses CUCM for user administration.

Administration Interface	Access Method	Username/Password Combo
Cisco Unified Presence Administration	https:// <ipaddress>/ cupadmin</ipaddress>	Application Username/ Password
Cisco Unified Service- ability	https:// <ipaddress>/ ccmservice</ipaddress>	Application Username/ Password
Cisco Unified OS Admin- istration	https:// <ipaddress>/ cmplatform</ipaddress>	Platform Username/Pass- word
Disaster Recovery System	https:// <ipaddress>/drf</ipaddress>	Platform Username/Pass- word
Cisco Unified Reporting	https:// <ipaddress>/ cucreports</ipaddress>	Application Username/ Password
Command Line Interface	SSH to <ipaddress></ipaddress>	Platform Username/Pass- word
End User Web Access	https:// <ipaddress>/ cupuser</ipaddress>	End UserID /Password

 Table 7-5
 Cisco Unified Presence Server Administration Interfaces

NOTE There is a web interface for end users to access their presence setting and manage their account.

Cisco Unity Connection and Cisco Unified Presence Backup and Restore

The Backup and Restore functionality in Cisco Unity Connection and Cisco Unified Presence is the same as CUCM, which is covered in Chapter 8, "Management, Monitoring, and Troubleshooting CUCM" in the "Configuring Backup and Recovery" section. Refer to that chapter and section for details on backup and restore configuration. This page intentionally left blank