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Robert has held the positions of Northeast Regional Manager, Technical Services Manager, and Senior Consultant for a Cisco Gold Partner. His time there was spent designing, configuring, and implementing highly accessible data networks for various enterprise, service provider, and Internet companies across the world; some of those clients included Quaker Oats, Milwaukee Electric Tool, AC Nielsen, Cogent Communications, and EthnicGrocer.com, among numerous others. Upon the completion of each client implementation, he would develop and instruct customized training courses to help the client manage the newly designed networks. Robert has taught as an adjunct faculty member at Rensselaer Polytechnic Institute (RPI) for their Computer Science, Engineering, and Information Technology curricula and as an adjunct technical instructor for a technical institute in Poughkeepsie, NY. He has also held the positions of Senior Network Engineer for About.com, Inc., Internet and Intranet Infrastructure Webmaster at AT&T Solutions, and Systems Engineer at Kodak Imaging Services.

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Whenever Robert has a free moment (which isn’t very often), he enjoys spending time with his wife, Kara, two sons, Luca and Rylan, and their dog, Tripster (a coonhound who always stands right behind him and his wife so they take full advantage of her name...as they trip over her).

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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!

Luca, you are one of a kind—don’t ever let that trait get away from you! You make me smile, laugh, and are teaching me so much as you grow.

Rylan, you are pure joy! You make me smile, laugh, and help maintain the child within me.

**Michael Scheuing:** I dedicate this book to my loving family, Doris and Paola, in thanks for their unending support, understanding, and love throughout the many hours of writing and editing.
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Nick and Karen, thanks for always being there and for your unbiased support.

Margie, God rest your soul! You were a true inspiration growing up! We love you!

Dave, God rest your soul! You were like a second father to me! You are truly missed!

And thank you for the team behind the scenes at Cisco Press in making the manuscript come to life.

Michael Scheuing: I would like to thank my co-author, Robert Cannistra, for the opportunity to collaborate on this book with him. Robert’s enthusiasm for the topic was contagious and his expertise helped to shape this book, making it current and relevant.

To Dad and Carol, thank you for your support and love throughout it all.

To Mom, thank you for believing I could do anything.

To my brother Rob who helped me to learn what it takes to succeed and inspired me to push myself further than I thought possible. Your business philosophy and work ethic is something I continue to use every day.

To Nino: “It’s gotta be done!”

To the technical editors, thank you for your thoughtful feedback and expert guidance.

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Icons Used in This Book

- Workgroup Switch
  Voice-Enabled
- Network Cloud, White
- Cisco Unity Server
- IP Telephony Router
- File/Application Server
- Cisco Unified Presence Server
- PC
- Cisco CallManager
- Network Cloud, Gold
- IP Phone
- Workgroup Switch
- Voice-Enabled Router
- Cell Phone
- Phone
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 (|)** 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 Unity 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 a feature within a small Cisco Voice solution. This book is also a helpful supplement 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 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
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).
Table 7-1  Cisco Unity Connection Administration Interfaces

<table>
<thead>
<tr>
<th>Administration Interface</th>
<th>Access Method</th>
<th>Username/Password Combo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Unity Connection Administration</td>
<td>https://&lt;IPAddress&gt;/cuadmin</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Cisco Unified Serviceability</td>
<td>https://&lt;IPAddress&gt;/ccmservice</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Cisco Unified OS Administration</td>
<td>https://&lt;IPAddress&gt;/cmplatform</td>
<td>Platform Username/Password</td>
</tr>
<tr>
<td>Disaster Recovery System</td>
<td>https://&lt;IPAddress&gt;/drf</td>
<td>Platform Username/Password</td>
</tr>
<tr>
<td>Cisco Unity Connection Serviceability</td>
<td>https://&lt;IPAddress&gt;/cuservice</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Command Line Interface</td>
<td>SSH to &lt;IPAddress&gt;</td>
<td>Platform Username/Password</td>
</tr>
</tbody>
</table>

**NOTE** There is a web interface for end users to access their voice messages and manage their account. Their account must have a Class of Service (COS) that enables access to the Cisco Personal Communications Assistant (PCA)

End User Web Access | https://<IPAddress>/ciscopca | End UserID / Password

**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.

Table 7-2  Common CLI Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin:?</td>
<td>Shows available commands</td>
</tr>
<tr>
<td>admin:help &lt;command&gt;</td>
<td>Help for a command.</td>
</tr>
<tr>
<td>admin:show version active</td>
<td>Displays active system version.</td>
</tr>
<tr>
<td>admin:show version inactive</td>
<td>Displays if there are any other alternative versions installed. This is used when an upgrade is performed.</td>
</tr>
<tr>
<td>admin:utils service list</td>
<td>Displays a list of services and their status.</td>
</tr>
<tr>
<td>admin:show tech all</td>
<td>Displays useful information for Cisco TAC.</td>
</tr>
<tr>
<td>admin:utils network ping &lt;IPAddress&gt;</td>
<td>Pings an address and displays the result.</td>
</tr>
</tbody>
</table>
admin:utils network traceroute
   <IPAddress>
   Performs a traceroute to an IP address and 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.
2. 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.
4. 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.
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.

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.)

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.)

![Figure 7-6  Save the User Template](image)

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.)
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.)
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).

1. 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.

2. 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.

4. Choose Telephony Integrations > Phone System. Select PhoneSystem; then choose Edit > Cisco Unified Communications Manager AXL Servers. (See Figure 7-10.)

5. 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.
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.)
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>
<thead>
<tr>
<th>LDAP Configuration Name</th>
<th>Name used in Unity Connection to identify this LDAP Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate LDAP</td>
<td></td>
</tr>
</tbody>
</table>

| 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.


5. Check the box for Enable Synchronizing from LDAP Server, and click the Save button. (See Figure 7-13.)

6. Choose System Settings > LDAP > LDAP Directory Configuration, and click the Add New button.

7. 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.)
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.)
10. 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.)

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)](image-url)
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.)

![Download the Export File](image)

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.

![Complete the Columns with User Information](image)

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.


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.

13. 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](https://example.com/figure720.png)

**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](https://example.com/figure721.png)

**Figure 7-21**  BAT Import Successful
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.
5. 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.)
6. Choose Edit > Caller Input. (See Figure 7-24.)

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.)
10. Choose Edit > Caller Input. Select the 9 key. This is the Directory Key.

11. Select the radio button next to Directory Handler, and select System Directory Handler. Then click the Save button.
12. Choose **Edit > Greetings**. There are multiple greetings available. (See Figure 7-27.)

---

![Image of Cisco Unity Connection Administration interface](image.png)

**Figure 7-27**  Greetings

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

<table>
<thead>
<tr>
<th>Greeting Type</th>
<th>Greeting Override?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate</td>
<td>Overrides all other greetings</td>
<td>Useful for special situations like out of office for an extended period of time.</td>
</tr>
<tr>
<td>Busy</td>
<td>Overrides standard, internal, closed, and holiday greetings</td>
<td>Plays when the target’s extension is busy.</td>
</tr>
<tr>
<td>Error</td>
<td>None</td>
<td>Plays when a caller enters invalid digits in a call handler/mailbox.</td>
</tr>
<tr>
<td>Internal</td>
<td>Overrides standard, closed, and holiday greetings</td>
<td>This greeting is for internal callers and tends to be more informal or adds information that only internal callers need to know like, “I am in the Sales Meeting in Room 1776 today.”</td>
</tr>
<tr>
<td>Greeting Type</td>
<td>Greeting Override?</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Closed</td>
<td>Overrides standard greeting</td>
<td>Plays when the business is closed according to the active schedule.</td>
</tr>
<tr>
<td>Standard</td>
<td>None</td>
<td>Plays when not overridden by another greeting.</td>
</tr>
<tr>
<td>Holiday</td>
<td>Overrides the standard and closed greeting</td>
<td>Plays when the business is closed for a holiday as specified in the active schedule’s holiday dates.</td>
</tr>
</tbody>
</table>

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.

14. 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.)

![Figure 7-28 Save Call Handler Message Settings](image)

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.)
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.

---

Figure 7-29  Add Selected User

Figure 7-30  Unity Connection Report List
Cisco Unified Presence Server Administration Interfaces

The Cisco Unified Presence Server uses CUCM for user administration.

Table 7-5  Cisco Unified Presence Server Administration Interfaces

<table>
<thead>
<tr>
<th>Administration Interface</th>
<th>Access Method</th>
<th>Username/Password Combo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Unified Presence Administration</td>
<td>https://&lt;IPAddress&gt;/cupadmin</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Cisco Unified Service-ability</td>
<td>https://&lt;IPAddress&gt;/ccmservice</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Cisco Unified OS Administration</td>
<td>https://&lt;IPAddress&gt;/cmplatform</td>
<td>Platform Username/Password</td>
</tr>
<tr>
<td>Disaster Recovery System</td>
<td>https://&lt;IPAddress&gt;/drf</td>
<td>Platform Username/Password</td>
</tr>
<tr>
<td>Cisco Unified Reporting</td>
<td>https://&lt;IPAddress&gt;/cucreports</td>
<td>Application Username/Password</td>
</tr>
<tr>
<td>Command Line Interface</td>
<td>SSH to &lt;IPAddress&gt;</td>
<td>Platform Username/Password</td>
</tr>
<tr>
<td>End User Web Access</td>
<td>https://&lt;IPAddress&gt;/cupuser</td>
<td>End UserID /Password</td>
</tr>
</tbody>
</table>

**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.
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