Cisco Unity Express 2.3
CLI Administrator Guide

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Configuring System-Wide Voice-Mail Parameters 77
Configuring Password and PIN Parameters 82
  Configuring Password and PIN Length and Expiry Time 82
  Displaying Password and PIN System Settings 84
Configuring a Holiday List 85
  Overview of Holiday Lists 85
  Using the Holiday Lists 86
  Configuring a Holiday List 86
  Displaying the Holiday List 86
  Deleting Holidays from the List 88
Configuring Business Hours 89
  Overview of Business-Hours Schedules 89
  Using the Business-Hours Schedule 89
  Creating a Business-Hours Schedule 90
  Modifying Business Schedules 92
  Displaying Business-Hours Schedules 94
  Deleting a Business Schedule 95

**Configuring Users and Groups** 97
Prerequisites 97
Adding and Modifying a User 98
  Required Data for This Procedure 98
Adding and Modifying a Group 104
  Required Data for This Procedure 104
Configuring Privileges 108
Sending Future Messages 109
  Permitted Subscribers 109
  Message Delivery Time 109
  System Status Impact 110
  Unsuccessful Message Delivery 110
  Loss of Future Messages 110
  Incorrect Message Delivery 110
  Backup and Restore of Future Messages 111
  Displaying and Deleting Future Messages 111

**Configuring Mailboxes** 113
Types of Mailboxes 113
Mailbox Properties 114
Configuring Mailboxes 114
## Contents

- **Prerequisites** 114
- **Required Data for This Procedure** 114
- **Examples** 117

Unlocking a Voice Mailbox 119
Refresh Message Waiting Indicators 120

### Configuring Distribution Lists 121

- **Overview of Distribution Lists** 121
- **Properties of Distribution Lists** 121
- **Public Distribution Lists** 122
- **Private Distribution Lists** 123
- **Differences Between Cisco Unity Express and Cisco Unity Distribution Lists** 125

- **Configuring Public Distribution Lists** 126
  - **Prerequisites** 126
  - **Required Data for This Procedure** 126
  - **Examples** 128

- **Configuring Private Distribution Lists** 129

- **Displaying Distribution Lists** 129
  - **Displaying All Public Distribution Lists** 129
  - **Displaying Details of a Public Distribution List** 130
  - **Displaying an Owner’s Lists** 130
  - **Displaying Details of a Private Distribution List** 131

- **Deleting Distribution Lists** 131

### Configuring Security 133

- **Overview of Security** 133

- **Obtaining a Certificate and Private Key** 134
  - **Generating a Certificate-Key Pair** 134
  - **Importing a Certificate-Key Pair** 134

- **Displaying the Certificate-Key Pairs** 135

- **Changing the Default Certificate-Key Pair** 135

- **Deleting a Certificate-Key Pair** 135

### Configuring SNMP Monitoring 137

- **Prerequisites for Implementing SNMP Monitoring on Cisco Unity Express** 137

- **Enabling the SNMP Agent, Passwords, and Trap Server** 137
  - **Prerequisites** 138
  - **Required Data for This Procedure** 138
  - **Verifying the Enabling of the SNMP Agent, Passwords, and Trap Server** 140
Contents

Notification Profile 160
Message Notification Settings 160
  System-Wide Message Notification Settings 160
  Subscriber and Device-Specific Settings 163
  Options and Settings 164
Sending and Receiving Message Notifications 165
  Notifications to Phone Devices 165
  Notifications to Numeric Pagers 166
  Notifications to E-mail Inboxes 166
  Notifications to Text Pagers 166
Configuring System-Wide Settings 167
  Required Data for This Procedure 167
  Examples 172
Enabling Message Notification for a Subscriber or Group 172
Configuring Message Notification for Devices 173
  Configuring Message Notification for Phone Devices 173
  Configuring Message Notification for a Numeric Pager 177
  Configuring Message Notification for E-mail 180
  Configuring Message Notification for a Text Pager 185

Configuring VoiceView Express 189
Overview of VoiceView Express 189
  VoiceView Express Session Count 189
  Configuring Cisco Unified CallManager for VoiceView Express 190
  Configuring Cisco Unified CallManager Express for VoiceView Express 190
  Session Termination 190
Configuring VoiceView Express 191
  Prerequisites 191
  Required Data for This Procedure 191
  Examples 192
Configuring the Phone-Authentication Service 193
  Prerequisites 193
  Required Data for This Procedure 193
  Example 194
  Displaying and Terminating VoiceView Express Sessions 194

Advanced Configuration 195
  Configuring Application Parameters 196
  Required Data for This Procedure 196
<table>
<thead>
<tr>
<th>Examples</th>
<th>198</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuring Multiple Triggers for an Application</td>
<td>200</td>
</tr>
<tr>
<td>Port Sharing Among Multiple Triggers</td>
<td>200</td>
</tr>
<tr>
<td>Required Data for This Procedure</td>
<td>200</td>
</tr>
<tr>
<td>Examples</td>
<td>203</td>
</tr>
<tr>
<td>Configuring the Hostname</td>
<td>204</td>
</tr>
<tr>
<td>Examples</td>
<td>205</td>
</tr>
<tr>
<td>Configuring the DNS Server</td>
<td>206</td>
</tr>
<tr>
<td>Examples</td>
<td>207</td>
</tr>
<tr>
<td>Configuring NTP Servers</td>
<td>208</td>
</tr>
<tr>
<td>Adding NTP Servers</td>
<td>208</td>
</tr>
<tr>
<td>Removing an NTP Server</td>
<td>210</td>
</tr>
<tr>
<td>Displaying NTP Server Information</td>
<td>211</td>
</tr>
<tr>
<td>Configuring a Syslog Server</td>
<td>212</td>
</tr>
<tr>
<td>Required Data for This Procedure</td>
<td>212</td>
</tr>
<tr>
<td>Examples</td>
<td>212</td>
</tr>
<tr>
<td>Configuring the Clock Time Zone</td>
<td>214</td>
</tr>
<tr>
<td>Examples</td>
<td>215</td>
</tr>
</tbody>
</table>

**Networking Cisco Unity Express**

<table>
<thead>
<tr>
<th>Examples</th>
<th>217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Cisco Unity Express Networking</td>
<td>217</td>
</tr>
<tr>
<td>Types of Remote Addressing</td>
<td>218</td>
</tr>
<tr>
<td>Delivery Notifications</td>
<td>218</td>
</tr>
<tr>
<td>Configuring Network Locations</td>
<td>219</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>219</td>
</tr>
<tr>
<td>Required Data for This Procedure</td>
<td>219</td>
</tr>
<tr>
<td>Examples</td>
<td>223</td>
</tr>
<tr>
<td>Disabling a Network Location</td>
<td>225</td>
</tr>
<tr>
<td>Examples</td>
<td>226</td>
</tr>
<tr>
<td>Downloading and Uploading Network Location Spoken Names</td>
<td>226</td>
</tr>
<tr>
<td>Required Data for This Procedure</td>
<td>227</td>
</tr>
<tr>
<td>Downloading the Location Spoken Name</td>
<td>227</td>
</tr>
<tr>
<td>Uploading the Location Spoken Name</td>
<td>227</td>
</tr>
<tr>
<td>Adding Remote Subscribers to the Local Directory</td>
<td>228</td>
</tr>
<tr>
<td>Configuring the Local Directory with Remote Subscribers</td>
<td>228</td>
</tr>
<tr>
<td>Displaying Remote Subscribers</td>
<td>232</td>
</tr>
<tr>
<td>Deleting Remote Subscriber Information</td>
<td>233</td>
</tr>
<tr>
<td>Downloading and Uploading Remote Subscriber Spoken Names</td>
<td>234</td>
</tr>
<tr>
<td>Required Data for This Procedure</td>
<td>234</td>
</tr>
</tbody>
</table>
Contents

Downloading the Remote Subscriber Spoken Name 234
Uploading the Remote Subscriber Spoken Name 234
Configuring Caller ID for Incoming Messages 235
Enabling Caller ID on the Local System 235
Disabling Caller ID on the Local System 236
Configuring a Location with vCard Information 236
Enabling and Disabling vCard Information 236
Displaying vCard Status 238
Configuring the LRU Cache 239
Enabling and Disabling the LRU Cache 239
Displaying LRU Cache Data 240
Configuring the Broadcast Message VPIM ID for a Network Location 240
Required Data for This Procedure 240
Examples 241
Troubleshooting Commands 241

Monitoring the System 245
Monitoring Active Calls 245
Displaying Active Calls by Application 245
Displaying Active Calls by Route 247
Terminating an Active Call 249
Monitoring Future Messages 250
Displaying Future Messages 250
Deleting a Future Message 251
Monitoring Active IMAP and VoiceView Express Sessions 251
Displaying IMAP Sessions 251
Displaying VoiceView Express Sessions 252
Terminating an Active VoiceView Express Session 252
Monitoring Queues 252
Monitoring Network Queues 253
Monitoring Notification Queues 253
Displaying SNMP and Management Data Activity 254
Viewing System Activity Messages 256
Checking AIM Compact Flash Memory Wear Activity 256

Backing Up and Restoring Data 257
Restrictions 258
Setting Backup Parameters 258
Prerequisites 258
Contents

Required Data for This Procedure 258
Examples 259

Backing Up Files 260
Examples 261

Restoring Files 263
Example 264

Copying Configurations 265
  Copying from Flash Memory to Another Location 265
  Copying from the Network FTP Server to Another Location 266
  Copying the Flash Running Configuration to Another Location 266
  Copying the Network TFTP Configuration to Another Location 267

Restoring Factory Default Values 268

Troubleshooting 269
  Troubleshooting Guidelines 269
  System Reports 270
  Log Files 270
  Users and Groups 270
  Hardware and Software 271
  Voice Mail 273
  Message Waiting Indicators (MWIs) (Cisco Unified CME Only) 273
  Auto-Attendant Prompts 274
  Checking Log and Trace Files 274
  Troubleshooting Commands 274

Index
Cisco Unity Express Features

Last Updated: July 25, 2006

This guide describes the set of Cisco Unity Express command-line interface (CLI) commands and tasks for installing, configuring, managing, and maintaining Cisco Unity Express applications, such as voice mail.

This guide complements the graphical user interface (GUI) administration tasks described in the Cisco Unity Express GUI Administrator Guide.

The focus of this guide is the Cisco Unity Express application. It does not provide information on installation of Cisco routers, Cisco network modules, Cisco Unified CallManager Express router., or Cisco Unified CallManager server. For more information about those topics, see “Additional References” on page 14.

This chapter contains the following sections:

- Platforms and Cisco IOS Software Images, page 1
- Cisco Unity Express Feature List, page 2

Platforms and Cisco IOS Software Images

Cisco Unity Express applications use a set of commands that are similar in structure to Cisco IOS software commands. However, Cisco Unity Express commands do not affect the Cisco IOS configuration.

See the Release Notes for Cisco Unity Express 2.3 for detailed information about the Cisco Unity Express hardware and software platforms.

Note

We highly recommend attaching an uninterruptible power supply (UPS) to the router housing the Cisco Unity Express module. Any reliable UPS unit provides continuous power to maintain the operation of the router and the Cisco Unity Express module. Consider the unit’s capacity and run time because power consumption differs among Cisco platforms. Ideally, a UPS should include a signaling mechanism that directs the router to shut down Cisco Unity Express properly and then powers off the router.
# Cisco Unity Express Feature List

Table 1 lists Cisco Unity Express features by version. Features that are introduced in a particular version are available in that and subsequent versions.

## Table 1  
**Cisco Unity Express Features by Release**

<table>
<thead>
<tr>
<th>Version</th>
<th>Features Introduced in That Version</th>
<th>Feature Description</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>Multiple languages</td>
<td>Cisco Unity Express supports several languages for voice-mail prompts. Only one can be installed on the system.</td>
<td>See the <em>Release Notes for Cisco Unity Express 2.3</em> for a list of available languages</td>
</tr>
<tr>
<td></td>
<td>Increased system capacity</td>
<td>Cisco Unity Express supports increased number of mailboxes, increased number of remote and cached users, larger storage capacity, and number of public distribution lists.</td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
</tr>
</tbody>
</table>
|         | Integrated Messaging                 | Cisco Unity Express voice-mail subscribers can access and manage their voice messages and e-mail using an e-mail client on a single PC. | • From the CLI: See “Configuring Integrated Messaging” on page 153  
• From the GUI: Use the Voice Mail > Integrated Messaging option and the online help. |
|         | Message Notification                 | Cisco Unity Express can notify voice-mail subscribers of new voice messages on their cell phones, home phones, work phones, numeric pagers, text pagers, and e-mail inboxes. | • From the CLI: See “Configuring Message Notification” on page 159  
• From the GUI: Use the Voice Mail > Message Notification option and the online help. |
|         | VoiceView Express                    | Cisco Unity Express voice-mail subscribers can browse, listen, manage, and send voice messages and manage their mailbox options from their Cisco IP phone. VoiceView Express supports only Cisco IP phones 7940, 7941, 7960, 7961, 7970, and 7971. | • From the CLI: See “Configuring VoiceView Express” on page 189  
• From the GUI: Use the Voice Mail > VoiceView Express option and the online help. |
|         | Future message delivery              | Voice-mail subscribers can schedule messages to be delivered at a future time to subscribers on local or remote systems. | “Monitoring Future Messages” on page 250 |
### Table 1  
**Cisco Unity Express Features by Release (continued)**

<table>
<thead>
<tr>
<th>Version</th>
<th>Features Introduced in That Version</th>
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</thead>
</table>
|         | Local broadcast privilege           | Voice-mail subscribers with this privilege can send broadcast messages only to other voice-mail subscribers on the local system. | - From the CLI: See “Configuring the Local-Broadcast Privilege” on page 150  
- From the GUI: Select a group from the **Configure > Groups** option and use the online help. |
|         | Mailbox selection                   | This configurable option specifies the mailbox in which a voice message is stored. | - From the CLI: See “Configuring System-Wide Voice-Mail Parameters” on page 77  
- From the GUI: Use the **Defaults > Voice Mail** option and use the online help. |
|         | Voice mail box mask                 | This feature permits Cisco Unity Express to send a redirected incoming call from Cisco Unified CallManager 4.2 to the correct mailbox. | “Unlocking a Voice Mailbox” on page 119 |
|         | Consulting call transfers (SIP Call Control only) | Cisco Unity Express permits attended and semi-attended call transfer modes in addition to blind transfers. | “Configuring the Call Transfer Mode” on page 36 |
|         | DTMF relay (SIP Call Control only)  | This feature handles incoming and outgoing DTMF signals for SIP calls. | “Configuring DTMF Options” on page 38 |
|         | MWI Notifications in Cisco SRST mode | Cisco Unity Express includes the MWI status update capability to Cisco SRST mode. | - From the CLI: See “Configuring the MWI Notification Option” on page 41  
- From the GUI: Use the **Voice Mail > Message Waiting Indicators > Settings** option and use the online help. |
|         | Mandatory message expiry            | This feature forces the subscriber to delete messages when they expire. | - From the CLI: See “Configuring System-Wide Voice-Mail Parameters” on page 77  
- From the GUI: Use the **Defaults > Voice Mail** option and use the online help. |
### Table 1 Cisco Unity Express Features by Release (continued)

<table>
<thead>
<tr>
<th>Version</th>
<th>Features Introduced in That Version</th>
<th>Feature Description</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Unity Express Script Editor enhancements</td>
<td>Enhanced debugging procedures and two new steps are available.</td>
<td><a href="#">Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts</a></td>
<td></td>
</tr>
<tr>
<td>Cisco Unity Express GUI enhancements</td>
<td>New configuration screens and options are available through the Cisco Unity Express GUI. These new options parallel most of the new CLI commands.</td>
<td><a href="#">Cisco Unity Express 2.3 GUI Administrator Guide</a></td>
<td></td>
</tr>
<tr>
<td>AvT enhancements</td>
<td>Rerecording existing prompts and returning the status of the alternate greeting are new capabilities for the AvT.</td>
<td><a href="#">Cisco Unity Express 2.3 AvT Administrator Guide</a></td>
<td></td>
</tr>
<tr>
<td>Support for Cisco Unified CallManager 4.2 and 5.0</td>
<td>Cisco Unity Express supports Cisco Unified CallManager 4.1, Cisco Unified CallManager 4.2, and Cisco Unified CallManager 5.0. Previous Cisco Unified CallManager releases are not supported.</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Change in AIM-CUE support.</td>
<td>Cisco Unity Express does not support the 512 MB AIM-CUE.</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>CISCO-UNITY-EXPRESS-MIB</td>
<td>Monitor the health, conduct performance monitoring, data collection, and trap management for Cisco Unity Express voice mail and auto attendant applications.</td>
<td>“Configuring SNMP Monitoring” on page 137</td>
</tr>
<tr>
<td>2.1</td>
<td>Additional languages support.</td>
<td>Danish, U.K. English, Latin American Spanish, Italian, and Brazilian Portuguese were added as choices for the default language of the telephone user interface (TUI) system prompts and greetings.</td>
<td><a href="#">Cisco Unity Express 2.3 Installation and Upgrade Guide</a></td>
</tr>
<tr>
<td>Distribution lists.</td>
<td>Create public and private distribution lists of local and remote subscribers for sending messages to more than one subscriber.</td>
<td>From the GUI: Use the <strong>Voice Mail &gt; Distribution Lists</strong> option and the online help. From the CLI: See “Configuring Distribution Lists” on page 121.</td>
<td></td>
</tr>
<tr>
<td>Broadcast messages.</td>
<td>Privileged subscribers can send messages to all subscribers on the network.</td>
<td>From the GUI: Use the <strong>Configure &gt; Groups</strong> option and the online help. From the CLI: See “Configuring Broadcast Messages” on page 146.</td>
<td></td>
</tr>
</tbody>
</table>
Table 1  Cisco Unity Express Features by Release (continued)

<table>
<thead>
<tr>
<th>Version</th>
<th>Features Introduced in That Version</th>
<th>Feature Description</th>
<th>Feature Information</th>
</tr>
</thead>
</table>
|         | Schedules for holidays and business hours. | Create schedules of holidays and business hours to automatically play alternate auto attendant greetings to callers. | • From the GUI: Use the Voice Mail > Holidays Settings and Voice Mail > Business Hours Settings options and the online help.  
• From the CLI: See “Configuring Business Hours” on page 89 and “Configuring a Holiday List” on page 85. |
|         | Increased security for passwords and PINs. | Set minimum lengths and expiry times for passwords and personal identification numbers (PINs). | • From the GUI: Use the Defaults > User option and the online help.  
• From the CLI: See “Configuring Password and PIN Parameters” on page 82. |
|         | Support for caller ID information in incoming messages. | Permit playing of caller identification information as part of the message envelope for new incoming voice mail messages. | “Configuring Caller ID for Incoming Messages” on page 235. |
|         | Addition of remote subscribers to the local directory. | Add frequently called remote subscribers to the local directory, which permits local subscribers to address voice mail messages to remote subscribers using dial-by-name and to receive spoken name verification of the remote subscriber address. | • From the GUI: Use the Configure > Remote Users option and the online help.  
• From the CLI: See “Adding Remote Subscribers to the Local Directory” on page 228. |
|         | Support for vCard information from remote subscribers. | Permit vCard information from remote subscribers to update their directory entries. | “Configuring a Location with vCard Information” on page 236 and “Configuring the LRU Cache” on page 239. |
|         | Simple auto-attendant script. | Simple aa_simple.aef script is available for handling alternate, holiday, and business hours greetings. | “Configuring and Managing the Auto-Attendant Application” on page 55 |
|         | Undelete voice messages. | Permits subscribers to restore a voice mail message that was deleted during the current voice message retrieval session. | Cisco Unity Express Voice-Mail System User’s Guide |
|         | Restore to factory defaults. | Permits the administrator to reset the entire system to the factory default values. | “Restoring Factory Default Values” on page 268. |
### Cisco Unity Express Features by Release (continued)

<table>
<thead>
<tr>
<th>Version</th>
<th>Features Introduced in That Version</th>
<th>Feature Description</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased port density.</td>
<td>Network modules with 512 MB of SDRAM now support 16 voice ports. Advanced integration modules (AIMs) running at 300 MHz now support 6 ports on new router platforms.</td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
<td></td>
</tr>
<tr>
<td>Repurposing of general delivery mailboxes (GDMs)</td>
<td>GDMs may be repurposed as personal mailboxes, which expands the personal mailbox capacity of each license level.</td>
<td>“Configuring Mailboxes” on page 114</td>
<td></td>
</tr>
<tr>
<td>Support for multiple languages</td>
<td>Several languages are available in the telephone user interface (TUI) and auto-attendant prompts.</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Streamlined software upgrade process</td>
<td>Modified upgrade process to reduce installation time.</td>
<td><em>Cisco Unity Express 2.3 Installation and Upgrade Guide</em></td>
<td></td>
</tr>
<tr>
<td>Increased storage on the AIM</td>
<td>AIM flash storage capacity can be increased from 512 MB to 1 GB and with the 1GB flash can support 14 hours of voice-mail message storage.</td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
<td></td>
</tr>
<tr>
<td>Housing Cisco Unity Express and Cisco CallManager Express software on different routers</td>
<td>Cisco Unity Express software installed on a router communicates with Cisco CallManager Express installed on a different router.</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Networking across multiple sites</td>
<td>Voice Profile for Internet Mail version 2 (VPIMv2) support for voice-mail messaging interoperability between Cisco Unity Express sites and between Cisco Unity Express and Cisco Unity with Non-Delivery Record (NDR) for networked messages and blind addressing.</td>
<td>“Networking Cisco Unity Express” on page 217</td>
<td></td>
</tr>
<tr>
<td>Support for Cisco Unified CallManager Release 3.3(3),3.3(4), and 4.0(1)</td>
<td>Capability of auto detecting the Cisco CallManager JTAPI version on a remote system for handling call control and user import functionality.</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>1.1.2</td>
<td>NTP server configuration support</td>
<td>New commands permit configuration of the NTP server.</td>
<td>“Configuring NTP Servers” on page 208</td>
</tr>
<tr>
<td>1.1</td>
<td>Advanced integration module (AIM) card</td>
<td>AIM card with network connectivity through the PCI interface, and access to Cisco IOS software and the console using back-to-back Ethernet through the parallel interface. No external interfaces or cabling is required.</td>
<td><em>Installing Advanced Integration Modules in Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers</em></td>
</tr>
</tbody>
</table>
### Table 1  Cisco Unity Express Features by Release (continued)

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</thead>
<tbody>
<tr>
<td></td>
<td>Custom auto-attendant script creation using the Cisco Unity Express script editor</td>
<td>Script editor creates custom scripts for handling incoming calls to the automated attendant (AA). Activating a custom script deactivates the default auto-attendant script that ships with Cisco Unity Express. The default script cannot be modified. The network module (NM) and the advanced integration module (AIM) supports up to four customized auto attendants.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternate auto-attendant greetings and prompts</td>
<td>Recording of alternate AA greetings and prompts that can be uploaded or downloaded as needed. These alternate greetings and prompts are in addition to the default greetings and prompts that ship with Cisco Unity Express. The NM supports up to 50 alternate prompts. The AIM supports up to 25 alternate prompts.</td>
<td>“Recording an Auto-Attendant Greeting or Prompt File” on page 61</td>
</tr>
<tr>
<td></td>
<td>Access to a greeting management system from the telephone user interface (TUI)</td>
<td>Access from the TUI to a greeting management system (GMS) for recording alternate greetings and prompts. Subscribers with administrative privileges have access to the GMS.</td>
<td>Cisco Unity Express Voice Mail System Quick Start Guide</td>
</tr>
<tr>
<td>1.0</td>
<td>Linux-based software</td>
<td>Linux-based software installed on a module card that is installed in the Cisco CallManager router. (See the Note in “Platforms and Cisco IOS Software Images” section on page 1 regarding a UPS device.) The software includes the operating system, application software, and ordered license information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network module card</td>
<td>Network module card with access to Cisco IOS software using back-to-back Ethernet and console. No external interfaces or cabling is required.</td>
<td>Cisco Network Modules Hardware Installation Guide</td>
</tr>
<tr>
<td></td>
<td>Orderable license packages</td>
<td>Four orderable license packages. A license must be ordered for each voice-mail system. See Table 2 on page 10, Table 4 on page 11, and Table 6 on page 12 for the system capacities available with each license.</td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
</tr>
</tbody>
</table>
### Table 1  **Cisco Unity Express Features by Release (continued)**

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<th>Feature Description</th>
<th>Feature Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare modules</td>
<td>Spare modules with factory installed software and license. Upgrades to larger capacity require purchase of a license and download of the license file.</td>
<td></td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
</tr>
<tr>
<td>License upgrades and downgrades</td>
<td>Upgrades or downgrades from one license size to another.</td>
<td></td>
<td>“Software Licenses and Factory-Set Limits” on page 9</td>
</tr>
<tr>
<td>Two administrative interfaces</td>
<td>Two administrative interfaces. (See the “Networking Cisco Unity Express with Other Voice-Mail Systems” on page 13.)</td>
<td></td>
<td>“Networking Cisco Unity Express with Other Voice-Mail Systems” on page 13</td>
</tr>
<tr>
<td>Integrated GUI with Cisco CallManager Express</td>
<td>An integrated administration GUI for both Cisco Unity Express and Cisco CME. The integrated interface permits configuration of some Cisco CME parameters, such as telephones and extensions.</td>
<td></td>
<td><em>Cisco Unity Express 2.3 GUI Administrator Guide</em></td>
</tr>
<tr>
<td>Bulk provisioning of multiple sites</td>
<td>Bulk provisioning of multiple sites using CLI scripts not provided by Cisco Unity Express. Systems are administered individually.</td>
<td></td>
<td><em>Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts</em></td>
</tr>
<tr>
<td>System access anywhere in the IP network</td>
<td>Systems accessible anywhere on the IP network. If the Cisco Unity Express installer uses TFTP, the site running the installer must be closely located to the TFTP server. All other functions use FTP, which allows the servers to be anywhere in the IP network.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Manual backup and restore | Manual backup and restore using an FTP server located anywhere in the customer network. |  | • From the GUI: Use the Administration > Backup/Restore menu option and the online help.  
• From the CLI:  
  “Backing Up and Restoring Data” section on page 257 |
| System reports and log files for troubleshooting | Reports are available from the Cisco Unity Express GUI screens. All troubleshooting reports and files are available using the Cisco Unity Express CLI commands. |  | • From the GUI: Use the Reports > System menu option and the online help.  
• From the CLI:  
  “Troubleshooting” section on page 269 |

1. Features that are introduced in a particular version are available in that and subsequent versions.
Overview of Cisco Unity Express Voice Mail and Auto Attendant

Last Updated: July 25, 2006

The Cisco Unity Express voice-mail and auto-attendant applications work with Cisco Unified Communications Manager Express (Cisco Unified CME, formerly known as Cisco Unified CallManager Express) or Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager) to provide small- and medium-sized companies with the capability to:

- Create and maintain voice mailboxes for onsite or remote telephone subscribers. The maximum number of mailboxes depends on the hardware module and license agreement purchased for Cisco Unity Express. See Software Licenses and Factory-Set Limits, page 9 for the system limits.
- Record and upload messages for callers to hear when they dial the company’s telephone number and prompts to guide the callers to specific extensions or employees.

Guidelines and procedures for installing and upgrading the Cisco Unity Express software are described in the Cisco Unity Express 2.3 Installation and Upgrade Guide.

Contents

- Software Licenses and Factory-Set Limits, page 9
- Networking Cisco Unity Express with Other Voice-Mail Systems, page 13
- Administration Interfaces, page 13
- Additional References, page 14

Software Licenses and Factory-Set Limits

Several system capacity increases are available starting with Cisco Unity Express 2.3.

- Number of voice mailboxes—The NM-CUE-EC supports new licenses for 150, 200, and 250 voice mailboxes. Each new license size supports 25 general delivery mailboxes (GDMs).
- Voice-mail storage capacity—Voice-mail storage is increased from 100 hours to 300 hours on the NM-CUE-EC, regardless of license size.
- Number of remote subscribers—The number of remote subscribers is increased from 50 to 100 on the NM-CUE-EC.
- Number of cached users—the number of subscribers cached in the LRU is increased from 50 to 100 on the NM-CUE-EC.
- Number of public distribution lists—the number of public distribution lists is increased from 15 to 25 on the NM-CUE-EC.
- Number of custom prompts—the number of custom prompts that can be recorded, uploaded, and stored on the system is increased from 50 to 120 on the NM-CUE and NM-CUE-EC.

Factory-set system limits are determined by the ordered license.

Table 2 and Table 3 list the system limits for the NM-CUE-EC.
Table 4 and Table 5 list the system limits for the NM-CUE.
Table 6 and Table 7 list the system limits for the AIM-CUE.

### Table 2 NM-CUE-EC System Capacities for Mailboxes, Storage Hours, Ports, Scripts, and Prompts

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Total Mailbox Storage (Hours)</th>
<th>Default Mailbox Size (Sec)</th>
<th>No. of Concurrent Voice Mail and Auto Attendant Ports/Sessions</th>
<th>No. of Scripts</th>
<th>No. of Prompts</th>
<th>No. of Public Distribution Lists</th>
<th>No. of Triggers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM SCUE-LIC-12CME</td>
<td>300</td>
<td>63529</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM SCUE-LIC-25CME</td>
<td>300</td>
<td>36000</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-50CCM SCUE-LIC-50CME</td>
<td>300</td>
<td>16115</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-100CCM SCUE-LIC-100CME</td>
<td>300</td>
<td>9600</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-150CCM SCUE-LIC-150CME</td>
<td>300</td>
<td>6171</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-200CCM SCUE-LIC-200CME</td>
<td>300</td>
<td>4800</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-250CCM SCUE-LIC-250CME</td>
<td>300</td>
<td>3297</td>
<td>16</td>
<td>8</td>
<td>120</td>
<td>25</td>
<td>8 SIP 8 JTAPI</td>
</tr>
</tbody>
</table>

1. The default mailbox size calculation includes the allocation for the General Delivery Mailboxes (GDMs).

### Table 3 NM-CUE-EC Maximum Number of Mailboxes, Users, Groups, Owners, and Members

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Default Number of Personal Mailboxes</th>
<th>Default Number of General Delivery Mailboxes</th>
<th>Total Number of Mailboxes</th>
<th>Number of Users</th>
<th>Number of Groups</th>
<th>Number of Owners</th>
<th>Number of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM SCUE-LIC-12CME</td>
<td>12</td>
<td>5</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>400</td>
<td>880</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM SCUE-LIC-25CME</td>
<td>25</td>
<td>10</td>
<td>35</td>
<td>50</td>
<td>20</td>
<td>400</td>
<td>1000</td>
</tr>
</tbody>
</table>
Overview of Cisco Unity Express Voice Mail and Auto Attendant

Software Licenses and Factory-Set Limits

Table 3  NM-CUE-EC Maximum Number of Mailboxes, Users, Groups, Owners, and Members (continued)

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Default Number of Personal Mailboxes</th>
<th>Default Number of General Delivery Mailboxes</th>
<th>Total Number of Mailboxes</th>
<th>Number of Users</th>
<th>Number of Groups</th>
<th>Number of Owners</th>
<th>Number of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-50CCM SCUE-LIC-50CME</td>
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<td>15</td>
<td>65</td>
<td>100</td>
<td>30</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>SCUE-LIC-100CCM SCUE-LIC-100CME</td>
<td>100</td>
<td>20</td>
<td>120</td>
<td>200</td>
<td>40</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>SCUE-LIC-150CCM SCUE-LIC-150CME</td>
<td>150</td>
<td>25</td>
<td>175</td>
<td>300</td>
<td>40</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>SCUE-LIC-200CCM SCUE-LIC-200CME</td>
<td>200</td>
<td>25</td>
<td>225</td>
<td>300</td>
<td>40</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>SCUE-LIC-250CCM SCUE-LIC-250CME</td>
<td>250</td>
<td>25</td>
<td>275</td>
<td>300</td>
<td>40</td>
<td>400</td>
<td>1000</td>
</tr>
</tbody>
</table>

Table 4  NM-CUE System Capacities for Mailboxes, Storage Hours, Ports, Scripts, and Prompts

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Total Mailbox Storage (Hours)</th>
<th>Default Mailbox Size (Sec)</th>
<th>No. of Concurrent Voice Mail and Auto Attendant Ports/Sessions</th>
<th>No. of Scripts</th>
<th>No. of Prompts</th>
<th>No. of Public Distribution Lists</th>
<th>No. of Triggers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM SCUE-LIC-12CME</td>
<td>100</td>
<td>21120</td>
<td>8</td>
<td>8</td>
<td>120</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM SCUE-LIC-25CME</td>
<td>100</td>
<td>10260</td>
<td>8</td>
<td>8</td>
<td>120</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-50CCM SCUE-LIC-50CME</td>
<td>100</td>
<td>5520</td>
<td>8</td>
<td>8</td>
<td>120</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-100CCM SCUE-LIC-100CME</td>
<td>100</td>
<td>3000</td>
<td>8</td>
<td>8</td>
<td>120</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
</tbody>
</table>

1. The default mailbox size calculation includes the allocation for the General Delivery Mailboxes (GDMs).

Table 5  NM-CUE Maximum Number of Mailboxes, Users, Groups, Owners, and Members

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Default Number of Personal Mailboxes</th>
<th>Default Number of General Delivery Mailboxes</th>
<th>Total Number of Mailboxes</th>
<th>Number of Users</th>
<th>Number of Groups</th>
<th>Number of Owners</th>
<th>Number of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM SCUE-LIC-12CME</td>
<td>12</td>
<td>5</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>400</td>
<td>880</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM SCUE-LIC-25CME</td>
<td>25</td>
<td>10</td>
<td>35</td>
<td>50</td>
<td>20</td>
<td>400</td>
<td>1000</td>
</tr>
</tbody>
</table>
**Table 5**  
**NM-CUE Maximum Number of Mailboxes, Users, Groups, Owners, and Members (continued)**

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Default Number of Personal Mailboxes</th>
<th>Default Number of General Delivery Mailboxes</th>
<th>Total Number of Mailboxes</th>
<th>Number of Users</th>
<th>Number of Groups</th>
<th>Number of Owners</th>
<th>Number of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM</td>
<td>12</td>
<td>5</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SCUE-LIC-12CME</td>
<td>12</td>
<td>5</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM</td>
<td>14</td>
<td>1320</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SCUE-LIC-25CME</td>
<td>14</td>
<td>1320</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SCUE-LIC-50CCM</td>
<td>14</td>
<td>720</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>SCUE-LIC-50CME</td>
<td>14</td>
<td>720</td>
<td>17</td>
<td>24</td>
<td>20</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

1. Cisco Unity Express 2.3 does not support the 512-MB AIM.
2. The default mailbox size calculation includes the allocation for the General Delivery Mailboxes (GDMs).

**Table 6**  
**1-GB AIM-CUE System Capacities for Mailboxes, Storage Hours, Ports, Scripts, and Prompts**

<table>
<thead>
<tr>
<th>Cisco Unity Express License/Software SKU</th>
<th>Total Mailbox Storage (Hours)</th>
<th>Default Mailbox Size (Sec)</th>
<th>No. of Concurrent Voice Mail and Auto Attendant Ports/Sessions</th>
<th>No. of Scripts</th>
<th>No. of Prompts</th>
<th>No. of Public Distribution Lists</th>
<th>No. of Triggers</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCUE-LIC-12CCM</td>
<td>14</td>
<td>2700</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-12CME</td>
<td>14</td>
<td>2700</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-25CCM</td>
<td>14</td>
<td>1320</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-25CME</td>
<td>14</td>
<td>1320</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-50CCM</td>
<td>14</td>
<td>720</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
<tr>
<td>SCUE-LIC-50CME</td>
<td>14</td>
<td>720</td>
<td>4 (Cisco 2600XM, Cisco 2691) 6 (Cisco 2800 series, Cisco 3700 series, Cisco 3800 series)</td>
<td>4</td>
<td>25</td>
<td>15</td>
<td>8 SIP 8 JTAPI</td>
</tr>
</tbody>
</table>

1. Cisco Unity Express 2.3 does not support the 512-MB AIM.
2. The default mailbox size calculation includes the allocation for the General Delivery Mailboxes (GDMs).
Networking Cisco Unity Express with Other Voice-Mail Systems

Cisco Unity Express supports the capability to network Cisco Unity Express with a voice-mail system located at a different site. Subscribers can send and receive messages from subscribers on remotely located, compatible voice-mail systems configured on Cisco Unified Communications Manager or Cisco Unified CME call control platforms. Supported configurations include:

- Cisco Unity Express to Cisco Unity Express
- Cisco Unity to Cisco Unity Express
- Cisco Unity Express to Cisco Unity

For more information about configuring the networking capability, see “Networking Cisco Unity Express” on page 217.

Administration Interfaces

Cisco Unity Express offers two administration interfaces:

- Graphical user interface (GUI)—This user-friendly, web-based interface permits administration of all voice-mail and auto-attendant functions.
  
  The GUI is targeted for administrators who are familiar with web-based applications and who have little or no experience with Cisco IOS command structure. See the Cisco Unity Express 2.3 GUI Administrator Guide for the configuration procedures using the GUI menus and screens.

- Command-line interface (CLI)—This text-based interface has the same administration and configuration capabilities as the GUI. Installation, upgrade, and troubleshooting functions are available only through the CLI commands. The administrator accesses this interface through a Telnet session to the router.
  
  The CLI is targeted for installers, resellers, support personnel, and others familiar with Cisco IOS command structure and routers. For them, accessing the system using the CLI may be easier than using the GUI, especially for troubleshooting, scripting, and bulk provisioning of many sites. See “Entering the Command Environment” on page 19 for the instructions to enter the CLI environment.
The Cisco Unity Express CLI commands have a structure very similar to Cisco IOS CLI commands. However, the Cisco Unity Express CLI commands do not affect Cisco IOS configurations. After you have logged in to the Cisco Unity Express module, the command environment is no longer the Cisco IOS environment.

Error messages in Cisco Unity Express are not always the same as error messages in the Cisco IOS environment.

The GUI and CLI are accessible from a PC or server anywhere in the IP network. To access the GUI, use Microsoft Internet Explorer 6.0 or a later release. Cisco Unity Express does not support any other browser. To access the CLI, Telnet to the router, and then use the `service-module` command.

### Additional References

The following sections provide references related to Cisco Unity Express.

### Documents Related to Cisco Unity Express

<table>
<thead>
<tr>
<th>Related Topic</th>
<th>Document Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Unity Express administration</td>
<td>• <em>Cisco Unity Express 2.3 CLI Administrator Guide</em></td>
</tr>
<tr>
<td></td>
<td>• <em>Cisco Unity Express 2.3 GUI Administrator Guide</em></td>
</tr>
<tr>
<td></td>
<td>• <em>Cisco Unity Express 2.3 Command Reference</em></td>
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<td>• <em>Cisco Unity Express 2.3 Installation and Upgrade Guide</em></td>
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<tr>
<td></td>
<td>• <em>Cisco Unity Express AvT Administrator Guide</em></td>
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<tr>
<td></td>
<td>• <em>Release Notes for Cisco Unity Express 2.3</em></td>
</tr>
<tr>
<td>Cisco Unity Express voice-mail scripts</td>
<td><em>Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts</em></td>
</tr>
<tr>
<td>Cisco Unity Express voice-mail subscriber</td>
<td><em>Cisco Unity Express User Guides</em></td>
</tr>
<tr>
<td>information</td>
<td></td>
</tr>
<tr>
<td>Cisco modules hardware installation</td>
<td>• <em>Cisco Network Modules Hardware Installation Guide</em></td>
</tr>
<tr>
<td></td>
<td>• <em>AIM Installation Quick Start Guide: Cisco 2600, 3600, and 3700 Series</em></td>
</tr>
<tr>
<td></td>
<td>• <em>Replacing Compact Flash Memory on Cisco AIM-CUE Advanced Integration Modules</em></td>
</tr>
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<td></td>
<td>• <em>AIM-CUE Slot Restriction on Cisco 3745 Routers</em></td>
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<td>Cisco Unity Express software copyrights and licenses</td>
<td><em>Cisco Unity Express Software Copyrights and Licenses</em></td>
</tr>
<tr>
<td>Technical support documentation for Cisco Unity</td>
<td><em>Cisco Unity Express Troubleshoot and Alerts</em></td>
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<td>Express</td>
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## Additional References

### Related Cisco IOS Documents

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<tr>
<th>Related Topic</th>
<th>Document Title</th>
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<tbody>
<tr>
<td>Cisco IOS configuration</td>
<td>• <a href="#">Cisco IOS Debug Command Reference, Release 12.4T</a></td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Cisco IOS Voice Command Reference</a></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>For general voice configuration topics, see the <a href="#">Cisco IOS Voice Configuration Library, Release 12.4</a>.</td>
</tr>
<tr>
<td>Cisco IOS voice troubleshooting information</td>
<td><a href="#">Cisco IOS Voice Troubleshooting and Monitoring Guide</a></td>
</tr>
<tr>
<td>Cisco IP Telephony</td>
<td><a href="#">IP Telephony Solution Reference Network Design Guide</a></td>
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### Related Topic Document Title

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<thead>
<tr>
<th>Related Topic</th>
<th>Document Title</th>
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<tbody>
<tr>
<td>Cisco Unified Communications Manager</td>
<td>• <a href="#">Cisco Unified Communications Manager Administration Guide</a></td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Cisco Unified Communications Manager System Guide</a></td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Cisco Unified Communications Manager Features and Services Guide</a></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>See the <a href="#">Cisco Unity Express Compatibility Matrix</a> for Cisco Unified</td>
</tr>
<tr>
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<td>Communications Manager versions compatible with Cisco Unity Express 2.3.</td>
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<tr>
<td>Cisco Unified Communications Manager Express</td>
<td>• <a href="#">Cisco Unified Communications Manager Express System Administrator Guide</a></td>
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<tr>
<td><strong>Note</strong></td>
<td>See the <a href="#">Cisco Unity Express Compatibility Matrix</a> for Cisco Unified CME</td>
</tr>
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<td>versions compatible with Cisco Unity Express 2.3.</td>
</tr>
<tr>
<td>Cisco Unity</td>
<td>• <a href="#">Networking in Cisco Unity Guide</a></td>
</tr>
<tr>
<td>Cisco hardware platforms</td>
<td>• <a href="#">Cisco 2600 Series Hardware Installation Guide</a></td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Cisco 2800 Series Hardware Installation</a></td>
</tr>
<tr>
<td></td>
<td>• <a href="#">Cisco 3700 Series Hardware Installation Guide</a></td>
</tr>
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<td></td>
<td>• <a href="#">Cisco 3700 Multiservice Access Routers Configuration Guide</a></td>
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<td>• <a href="#">Cisco 3800 Series Hardware Installation</a></td>
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<tr>
<td>Cisco Unity Express</td>
<td>• <a href="#">Cisco Unified Communications Manager Express Command Reference</a></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>See the <a href="#">Cisco Unity Express Compatibility Matrix</a> for Cisco Unified CME</td>
</tr>
<tr>
<td></td>
<td>versions compatible with Cisco Unity Express 2.3.</td>
</tr>
</tbody>
</table>
### MIBs

<table>
<thead>
<tr>
<th>MIBs</th>
<th>MIBs Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CISCO-UNITY-EXPRESS-MIB</td>
<td>To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a></td>
</tr>
<tr>
<td>• CISCO-VOICE-CONNECTIVITY-MIB</td>
<td></td>
</tr>
<tr>
<td>• CISCO-VOICE-APPLICATIONS-OID-MIB</td>
<td></td>
</tr>
<tr>
<td>• CISCO-PROCESS-MIB</td>
<td></td>
</tr>
<tr>
<td>• SNMPv2-MIB</td>
<td></td>
</tr>
<tr>
<td>• IF-MIB</td>
<td></td>
</tr>
<tr>
<td>• IP-MIB</td>
<td></td>
</tr>
<tr>
<td>• SYSAPPL-MIB</td>
<td></td>
</tr>
</tbody>
</table>

### RFCs

<table>
<thead>
<tr>
<th>RFCs</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1869</td>
<td>SMTP Service Extensions</td>
</tr>
<tr>
<td>1893</td>
<td>Enhanced Mail System Status Codes</td>
</tr>
<tr>
<td>2045</td>
<td>Multipurpose Internet Mail Extensions Part One: Format of Internet Message Bodies, RFC</td>
</tr>
<tr>
<td>2421</td>
<td>Voice Profile for Internet Mail - Version 2</td>
</tr>
<tr>
<td>2821</td>
<td>Simple Mail Transfer Protocol</td>
</tr>
<tr>
<td>2833</td>
<td>RTP Payloads for DTMF Digits, Telephony Tones and Telephony Signals</td>
</tr>
<tr>
<td>3261</td>
<td>SIP: Session Initiation Protocol</td>
</tr>
<tr>
<td>3501</td>
<td>Internet Message Access Protocol - Version 4rev1</td>
</tr>
</tbody>
</table>

### Technical Assistance

<table>
<thead>
<tr>
<th>Description</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cisco Technical Support &amp; Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.</td>
<td><a href="http://www.cisco.com/techsupport">http://www.cisco.com/techsupport</a></td>
</tr>
</tbody>
</table>
Entering and Exiting the Command Environment

Last Updated: July 25, 2006

This chapter describes the procedures for entering and exiting the Cisco Unity Express command environment, where Cisco Unity Express configuration commands are executed. The following sections describe these procedures:

- EXEC and Configuration Modes, page 19
- Entering the Command Environment, page 19
-Exiting the Command Environment, page 20

EXEC and Configuration Modes

The Cisco Unity Express command modes, EXEC and configuration, operate similarly to the EXEC and configuration modes for Cisco IOS CLI commands. However, Cisco Unity Express EXEC mode permits some parameters to be configured or modified, which are not allowed in Cisco IOS EXEC mode. This Cisco Unity Express capability saves the configured parameters to flash memory so that the system has some minimum information available if a catastrophic failure, such as a power outage, occurs. The description for each command in this guide indicates the command mode.

Entering the Command Environment

After the Cisco Unity Express software is installed and active, use this procedure to enter the command environment.

Prerequisites

The following information is required to enter the command environment:

- IP address of the router that contains the Cisco Unity Express module
- Username and password to log in to the router
- Slot number of the module
**SUMMARY STEPS**

1. Open a Telnet session.
2. `telnet ip-address`
3. Enter the user ID and password of the router.
4. `service-module service-engine slot/port session`
5. (Optional) `enable`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Open a Telnet session. Use a DOS window, a secure shell, or a software emulation tool such as Reflection.</td>
</tr>
</tbody>
</table>
| **Step 2**        | `telnet ip-address`
**Example:**
C:\>telnet 172.16.231.195
| Specifies the IP address of the Cisco Unified CallManager or Cisco Unified CME router. |
| **Step 3**        | Username: Password: |
| **Step 4**        | `service-module service-engine slot/port session`
**Example:**
Router# service-module service-engine 1/0 session
| Enters the Cisco Unity Express command environment using the module located in `slot` and `port`. The prompt changes to “se” with the IP address of the Cisco Unity Express module. |
| **Step 5**        | `enable`
**Example:**
se-10-0-0-0# enable
| (Optional) Enters Cisco Unity Express EXEC mode. You are ready to begin the configuration tasks. |

**Exiting the Command Environment**

To leave the Cisco Unity Express command environment and return to the router command environment, return to the Cisco Unity Express EXEC mode and enter the `exit` command twice.

The following example illustrates the exit procedure:

```
se-10-0-0-0# exit
se-10-0-0-0> exit
router-prompt#
```
Configuration Tasks

Last Update: July 25, 2006

This chapter lists the tasks for configuring and maintaining Cisco Unity Express and contains the following sections:

- Configuring the System Using CLI Commands, page 21
- Configuring the System Using the GUI, page 21
- Initial Tasks, page 22
- Ongoing Tasks, page 31
- As-Needed Tasks, page 31

Configuring the System Using CLI Commands

If you will configure one or more Cisco Unity Express systems exclusively using CLI scripts, enter the command environment as described in “Entering the Command Environment” on page 19. Proceed with the scripts, using the sections in this chapter as a guideline for configuring the system components. When entering the GUI for the first time and the initialization wizard appears, choose the skip option to avoid reconfiguring the system.

Configuring the System Using the GUI

The Cisco Unity Express GUI provides the initialization wizard software tool to configure the basic system parameters and import any subscribers configured on Cisco Unified CallManager or Cisco Unified CME.

If you log in to the GUI web interface after installation, the initialization wizard is the first screen to appear. You cannot activate it again except by reinstalling Cisco Unity Express software. All the parameters configured through the initialization wizard are available through GUI screens and CLI commands. See “Configuring the System for the First Time,” in the Cisco Unity Express 2.3 GUI Administrator Guide for more information about the initialization wizard.
Initial Tasks

Table 8 lists the initial configuration tasks, the section describing each procedure, and additional information needed for each task.

<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| 1. Configuring the SIP Proxy Server Location for Cisco Unity Express, page 34 | • Hostname or IP address of the SIP proxy server.  
• UDP or TCP port on the SIP proxy server. |
| 2. Configuring the Call Transfer Mode, page 36 | Select a transfer mode: attended, semi-attended, or blind. |
| 3. Configuring DTMF Options, page 38 | Select a DTMF relay option: rtp-nte, sub-notify, sip-notify, or info. |
| 4. Configuring the MWI Notification Option, page 41 | Choose an MWI notification option: outcall, sub-notify, or unsolicited. |
| 5. Configuring the MWI Notification Option, page 41 | Cisco Unity Express uses these extensions with the affected telephone extension to generate a SIP call to Cisco Unified CME, which changes the status of the telephone’s MWI light. |
| 7. Configuring JTAPI Parameters (Cisco Unified CallManager Only), page 48 | • IP address or hostname for the primary, secondary, and tertiary Cisco Unified CallManager servers  
• JTAPI user ID and password from Cisco Unified CallManager. The password is case sensitive. These values must match the JTAPI user ID and password that were configured on Cisco Unified CallManager.  
• List of CTI ports |
| 8. Configuring the Voice-Mail Application, page 52 | • Maximum number of subscribers who can access voice mail simultaneously. This number is limited by the number of ports purchased with Cisco Unity Express. Check your license agreement and see “Software Licenses and Factory-Set Limits” on page 9 for this maximum number.  
• Telephone number to access the voice-mail system. |
| 9. Configuring the Administration via Telephone Application, page 55 | Telephone number for accessing the Administration via Telephone (AvT). |
10. **Configuring and Managing the Auto-Attendant Application, page 55**

- To use your own welcome greeting, create a .wav file that contains the prerecorded welcome greeting. This file must be uploaded to the Cisco Unity Express module so that it can be located and saved in the auto-attendant script. Alternatively, you can use the AvT to record the welcome greeting. See “Recording an Auto-Attendant Greeting or Prompt File” on page 61 and “Uploading the Auto-Attendant Script File” on page 63 for guidelines on recording and uploading a greeting.
- Number of times the auto attendant will replay instructions to a caller before the call is disconnected. This count begins when the caller moves past the main menu and starts to hear instructions for a submenu. The main menu will play five times and then, if the caller makes no choice or incorrect choices, will transfer to the operator.
- Extension number of the operator. Auto attendant dials this extension when the caller presses the zero (“0”) button.
- Telephone number that the caller must dial to reach the auto attendant. In many cases, this number is your company telephone number.
- Maximum number of callers that auto attendant can handle simultaneously. This number is limited by the number of ports purchased with Cisco Unity Express. Check your license agreement and see “Software Licenses and Factory-Set Limits” on page 9 for this maximum number.

11. **Configuring Auto-Attendant Prompts, page 60**

- Prerecorded prompt files in .wav format. Use the AvT to record the prompts.
- Prompt filenames.

12. **Configuring Auto-Attendant Scripts, page 63**

- Preconfigured script files. Use the Cisco Unity Express script editor to create the files. See the *Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts* for more information.
- Script filenames.

13. **Configuring SIP Triggers for the Applications, page 64**

- Telephone number that invokes the application. This number must be different for voice-mail, auto-attendant, and AvT.
- Maximum number of callers, or sessions, the application can handle simultaneously. The total for all applications must not exceed the maximum number of ports for the system. (See “Software Licenses and Factory-Set Limits” on page 9 for the maximum number of ports.) The applications need not have the same maximum number; for example, voice mail might need three sessions while auto attendant needs five sessions.
### Table 8  Configuration Task Sequence (continued)

<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| **14.** Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only), page 66 | - Telephone number that invokes the application. The number must not be the same for both voice mail and auto attendant.  
- Number of seconds the system must wait for a caller response before it times out and drops the call.  
- Language to use for the prompts. Cisco Unity Express supports several languages. Only one can be installed on the system. See the *Release Notes for Cisco Unity Express 2.3* for a list of available languages.  
- Maximum number of callers that can access the trigger simultaneously. See the “Sharing Ports Among Applications and Triggers” section on page 52 for guidelines on assigning this value. |
| **15.** (Optional) Configuring System-Wide Voice-Mail Parameters, page 77 | - Capacity—The total amount of storage time in hours allowed for all mailboxes in the system. The factory default is the maximum allowed storage for your system.  
- Expiration date—The number of days a message is saved in the mailbox before the voice-mail system deletes it. The factory default value is 30 days.  
- Language—The language used for voice mail prompts. Cisco Unity Express supports several languages. Only one can be installed on the system. See the *Release Notes for Cisco Unity Express 2.3* for a list of available languages.  
- Mailbox size—The maximum number of seconds of storage for voice messages in a mailbox. The factory default value is determined by dividing the maximum storage capacity by the maximum number of mailboxes (personal plus general delivery).  
- Message length—The maximum number of seconds for any one stored message in a mailbox. The factory default is 60 seconds.  
- Recording time—The maximum amount of time for a subscriber’s recorded mailbox greeting.  
- Operator extension—The extension of the voice-mail operator.  
- Destination mailbox for forwarded calls—Choose either the original called number or last redirected number where you want to store the voice message of a forwarded call. |
| **16.** (Optional) Configuring System-Wide Voice-Mail Parameters, page 77 | Turn this feature on or off. |
| **17.** Configuring Password and PIN Parameters, page 82 | - Password length and expiry time  
- PIN length and expiry time |
| **18.** (Optional) Configuring a Holiday List, page 85 | Month, day, year, and description of each holiday. |
### Table 8 Configuration Task Sequence (continued)

<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| 19. (Optional) Configuring Business Hours, page 89 | **Schedule name**  
The maximum length of the name is 31 alphanumeric characters, including uppercase letters A to Z, lowercase letters a to z, digits 0 to 9, underscore (_), and dash (-). The first character of the name must be a letter.  
If a schedule with this name does not exist, the system will create it. If the schedule already exists, any changes will modify the schedule. If the maximum number of schedules exists and you request another one, the system displays an error message.  
**Day of the week**  
**Starting and ending clock times when the business is open and when the business is closed**  
Use the 24-hour clock format for the hours. Valid minute values are 00 and 30 only.  
For a new schedule, specify the closed hours; the remaining hours are open because a newly created schedule has 24 hours open each day by default. |
| 20. Adding and Modifying a User, page 98 | **Username**—The user ID. The username must be at least 3 and no more than 32 characters in length. Users IDs must start with a letter. Do not use spaces in the username.  
**(Optional) Full name**—First and last name of the subscriber.  
**(Optional) Group**—Name of a group in which this subscriber is a member.  
**Extension**—Phone extension for the subscriber.  
If you create a subscriber or group with the CLI, you may choose to provide a password and PIN.  
**Password**—Password for this subscriber for accessing the Cisco Unity Express GUI.  
**PIN**—Personal identification number for this subscriber for accessing the Cisco Unity Express telephone user interface (TUI). |
### Table 8  Configuration Task Sequence (continued)

<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| **21.** Adding and Modifying a Group, page 104 | EXEC mode:  
  - Name of the group.  
  - (Optional) Description of the group.  
  - (Optional) Full name of the group.  
Configuration mode:  
  - Name of the group.  
  - (Optional) One or more member user IDs.  
  - (Optional) User ID of the owner.  
  - (Optional) Extension or telephone number of the group.  
  - (Optional) Full E.164 telephone number of the group.  
The group need not have a mailbox associated with it.  
**Note** If a subscriber must access a general delivery mailbox (GDM), the subscriber must have a personal mailbox assigned first. |
| **22.** Configuring Mailboxes, page 114 |  
  - Mailbox owner  
  - (Optional) Mailbox size—Total number of seconds from all messages stored in a subscriber’s voice mailbox.  
  - (Optional) Message storage time—Number of days that the system will save old messages.  
  - (Optional) Message length—Maximum number of seconds for any message stored in a voice mailbox.  
  - (Optional) Telephone numbers for the voice-mail system, auto-attendant, and operator extension. |
23. (Optional) Configuring SNMP Monitoring, page 137

- SNMP community strings (passwords) that permit users to read and write SNMP MIB objects (variables). Specify whether these community strings will have read-only or read-write privileges. The system supports a maximum of 5 read-only community strings and 5 read-write community strings. Each community string may have a maximum of 15 alphanumeric characters, including letters A to Z, letters a to z, digits 0 to 9, underscore (_), and hyphen (-).
- IP address and community string of the host server that will receive SNMP traps from Cisco Unity Express. If no host is defined, the system discards the trap. The system supports a maximum of 5 hosts (trap receivers).
  
  No host is considered the primary host. The system sends the SNMP notifications to all enabled hosts.
- (Optional) SNMP server contact information for this managed node.
- (Optional) SNMP server location information for this managed node.
- Threshold values for the following activities:
  - Entering a login user name.
  - Entering a password.
  - Entering a personal identification number (PIN) user ID.
  - Entering a PIN password.
  - Resetting a PIN.

24. (Optional) Configuring Integrated Messaging, page 153

- Maximum number of simultaneous IMAP client sessions permitted by the Cisco Unity Express IMAP server. The default is 50 concurrent sessions.
- Number of minutes an IMAP session can be idle after which the system automatically logs out the session.
- Type of connections that are permitted. Options include SSL only, non-SSL only, or both SSL and non-SSL. The default is non-SSL only.

Note The system must have a default security certificate and private key before SSL connections are permitted on Cisco Unity Express. Use the `show crypto key` command to display the system default certificate-key pair. If no default certificate-key pair exists, follow the procedure in “Configuring Security” on page 133.

- Name of the group with the privilege to use IMAP.


Integrated Messaging is disabled by default. Enable it to use its capabilities.
### Table 8  **Configuration Task Sequence (continued)**

<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| 26. (Optional) Configuring Message Notification, page 159 | System-wide parameters:  
- User IDs or group names if a subset of subscribers or groups will have access to message notification  
- Notification preference  
- Number of seconds for the connection timeout  
- If you want to add phone numbers to the restriction table:  
  - Minimum and maximum number of digits in a dial-string  
  - At least one dial-string pattern  
- SMTP server hostname and authentication values (user ID and password or credential string)  
- Permission for subscribers to log into their voice mailboxes during notification calls  
- Permission for subscribers to attach voice messages to e-mail messages  
  
Subscriber or group parameters for cell phones, home phones, work phones, or numeric pagers:  
- Phone number  
- Extra digits, if any  
- Notification preference  
- Days and times when notification is active  
  
E-mail parameters:  
- E-mail address  
- Status of attaching voice messages to e-mail notifications  
- Message text  
- Notification preference  
- Days and times when notification is active  
  
Text message parameters:  
- E-mail address  
- Message text  
- Notification preference  
- Days and times when notification is active  |
<table>
<thead>
<tr>
<th>Task and Procedure Location</th>
<th>Additional Information Needed</th>
</tr>
</thead>
</table>
| **27.** (Optional) Configuring VoiceView Express, page 189 | • For Cisco Unified CallManager systems: ensure that all phones configured to use VoiceView Express are controlled by the JTAPI user configured on Cisco Unity Express.  
• For Cisco Unified CME systems: ensure that the Cisco Unified CME authentication server URL points to Cisco Unity Express.  
• Number of minutes a VoiceView Express session can be inactive before the system disconnects the session.  
• (Optional) URL for the fallback authentication server (for Cisco Unified CME systems) |
28. (Optional) Configuring Network Locations, page 219

- Network location ID number—Unique ID number for each location used by the voice-mail sender to send a remote message. The maximum length of the number is 7 digits. Cisco Unity Express supports a maximum of 500 locations.
- E-mail domain name—E-mail domain name or IP address for the local Cisco Unity Express system that is attached to the local voice-mail originator’s extension when sending a VPIM message. The local system’s e-mail domain name must be configured to receive remote voice-mail messages.
- (Optional) Location name—Descriptive name of the network location.
- (Optional) Abbreviated location name—Abbreviated description of the network location.
- (Optional) Voice-mail system telephone number prefix—Phone number prefix that is added to a local voice-mail originator’s extension to create a VPIM address. A prefix is required only if an e-mail domain services multiple locations, and extensions between the locations are not unique. The maximum length of the prefix is 15 digits.
- (Optional) Length of the voice-mail system extensions.
- (Optional) VPIM encoding scheme—Encoding scheme options for translating voice-mail messages at the local Cisco Unity Express system are dynamic, G.711ulaw, or G.726.
- (Optional) Voice-mail spoken name capability—Enabling this functionality permits receipt of a voice-mail originator’s spoken name, which is played at the beginning of the received voice-mail message.

29. (Optional) Configuring Distribution Lists, page 121

The following information is required to create a public distribution list:
- List name and number
- (Optional) List owner
- (Optional) List description—The description can have a maximum of 64 characters.

The following information is required to add members to a distribution list:
- Member type (user, group, GDM, list, remote, or blind)
- Member name or extension

Note
Local and remote subscribers must be previously defined on the system.
Ongoing Tasks

Perform the tasks listed in Table 9 on a regular basis.

Table 9  Ongoing Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back up and restore system data.</td>
<td>“Backing Up Files” on page 260 and “Restoring Files” on page 263</td>
</tr>
</tbody>
</table>
| Monitor system status. | • “Monitoring the System” on page 245  
• “Monitoring Future Messages” on page 250  
• “Monitoring Active Calls” on page 245  
• “Monitoring Active IMAP and VoiceView Express Sessions” on page 251  
• “Monitoring Queues” on page 252  
• Displaying SNMP and Management Data Activity, page 254  
• Checking AIM Compact Flash Memory Wear Activity, page 256  
• “Troubleshooting” on page 269 |

As-Needed Tasks

Perform the tasks listed in Table 10 on an as-needed basis.

Table 10  As-Needed Configuration Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add, display, modify, and delete voice mailboxes.</td>
<td>Configuring Mailboxes, page 114</td>
</tr>
<tr>
<td>Unlock a voice mailbox.</td>
<td>Unlocking a Voice Mailbox, page 119</td>
</tr>
<tr>
<td>Add, display, modify, and delete subscribers.</td>
<td>Adding and Modifying a User, page 98</td>
</tr>
<tr>
<td>Add, display, modify, and delete groups.</td>
<td>Adding and Modifying a Group, page 104</td>
</tr>
<tr>
<td>Change a subscriber’s voice-mail password.</td>
<td>Adding and Modifying a User, page 98</td>
</tr>
<tr>
<td>Change the voice mailbox size or storage time.</td>
<td>Configuring System-Wide Voice-Mail Parameters, page 77</td>
</tr>
<tr>
<td>Modify the auto-attendant application properties.</td>
<td>Configuring and Managing the Auto-Attendant Application, page 55</td>
</tr>
<tr>
<td>Add, modify, and delete the auto-attendant prompts.</td>
<td>Configuring Auto-Attendant Prompts, page 60</td>
</tr>
<tr>
<td>Add, modify, and delete the auto-attendant scripts.</td>
<td>Configuring Auto-Attendant Scripts, page 63</td>
</tr>
<tr>
<td>Troubleshoot software problems.</td>
<td>Troubleshooting Guidelines, page 269</td>
</tr>
</tbody>
</table>

Tip  
Bookmark the Cisco Unity Express documentation home page for easy access to all the documents. Print out and have available the documentation for these Ongoing and As-Needed tasks.
Configuring System Components

Last Updated: July 25, 2006

Command-line interface (CLI) commands are available to configure Cisco Unity Express system components. You enter some commands in EXEC mode and others in configuration mode.

This chapter describes how to configure the following basic Cisco Unity Express components:

- SIP parameters that Cisco Unity Express needs to communicate with Cisco Unified CallManager Express (Cisco Unified CME).
- JTAPI parameters that Cisco Unity Express needs to communicate with Cisco Unified CallManager.
- Voice-mail, auto-attendant, and Administration via Telephone applications that ship with Cisco Unity Express.

Additional procedures for configuring optional or advanced system components, such as servers and custom auto-attendant scripts, are described in “Advanced Configuration” on page 195.

All the procedures in this chapter can be implemented using either CLI commands or the graphical user interface (GUI) options. Use the CLI procedures for bulk provisioning, scripting, upgrading, and troubleshooting systems.

This chapter contains the following procedures for configuring Cisco Unity Express system components:

- Configuring SIP Call Control Parameters, page 34
  - Configuring the SIP Proxy Server Location for Cisco Unity Express, page 34
  - Configuring the Call Transfer Mode, page 36
  - Configuring DTMF Options, page 38
  - Configuring the MWI Notification Option, page 41
  - Configuring the MWI On and Off Extensions (Cisco Unified CME Only), page 44
  - Configuring Cisco Unified CME SIP Options for RFC Compliance, page 46
- Configuring JTAPI Parameters (Cisco Unified CallManager Only), page 48
- Configuring the Voice-Mail Application, page 52
- Configuring the Administration via Telephone Application, page 55
- Configuring and Managing the Auto-Attendant Application, page 55
- Configuring Auto-Attendant Scripts, page 63
- Configuring SIP Triggers for the Applications, page 64
- Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only), page 66
Configuring SIP Call Control Parameters

This section describes the procedures for configuring SIP call control parameters and contains the following sections:

- Configuring the SIP Proxy Server Location for Cisco Unity Express, page 34
- Configuring the Call Transfer Mode, page 36
- Configuring DTMF Options, page 38
- Configuring the MWI Notification Option, page 41
- Configuring the MWI On and Off Extensions (Cisco Unified CME Only), page 44
- Configuring Cisco Unified CME SIP Options for RFC Compliance, page 46

Configuring the SIP Proxy Server Location for Cisco Unity Express

The Session Initiation Protocol (SIP) proxy server resides on the router where Cisco Unified CME is installed. Beginning in Cisco Unity Express 2.1, Cisco Unified CME can be installed on a different router from where the Cisco Unity Express hardware and software is installed. The SIP proxy server location information must be configured properly to enable all communications between Cisco Unity Express and Cisco Unified CME. The SIP proxy server also enables the message waiting indicators (MWIs) to work with the Cisco Unity Express voice-mail application.

Required Data for This Procedure

The following information is required to configure the SIP proxy server:

- Hostname or IP address of the router where the SIP proxy server resides
- UDP port of the router where the SIP proxy server resides

SUMMARY STEPS

1. `config t`
2. `ccn subsystem sip`
3. `gateway address ip-address`
4. `gateway port port-number`
5. `end`
6. `exit`
7. show ccn subsystem sip
8. copy running-config startup-config

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>config t</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# config t</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>ccn subsystem sip</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# ccn subsystem sip</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Enters SIP configuration mode.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>gateway address <em>ip-address</em></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# gateway address 10.100.6.9</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Specifies the hostname or IP address of the router where the SIP proxy server resides.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>gateway port <em>port-number</em></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# gateway port 5060</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Specifies the UDP port number on which the SIP proxy server listens for incoming SIP messages. The default value is 5060.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>It is strongly recommended that this port number not be changed.</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>end</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# end</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Exits SIP configuration mode.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td>exit</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# exit</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td>show ccn subsystem sip</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# show ccn subsystem sip</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Displays the SIP subsystem parameters.</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td>copy running-config startup-config</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# copy running-config startup-config</td>
</tr>
<tr>
<td><strong>Purpose:</strong></td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
</tbody>
</table>
Examples

The following example illustrates the `show ccn subsystem sip` output, which displays the SIP gateway IP address and SIP port number:

```
se-10-0-0-0# show ccn subsystem sip

SIP Gateway:                          10.10.5.1
SIP Port Number:                       5060
DTMF Relay:                            sip-notify,sub-notify
MWI Notification:                     sub-notify
Transfer Mode:                         refer-consult
SIP RFC Compliance:                   Pre-RFC3261

se-10-0-0-0#
```

Configuring the Call Transfer Mode

Cisco Unity Express permits configuration of attended and semi-attended call transfer modes in addition to blind transfers.

Additionally, a remote location can send blind transfer calls to Cisco Unity Express. Cisco Unity Express handles these calls as new SIP calls.

SUMMARY STEPS

1. `config t`
2. `ccn subsystem sip`
3. `transfer-mode {attended | semi-attended | blind refer | blind bye-also}`
4. `end`
5. `end`
6. `show ccn subsystem sip`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td><code>ccn subsystem sip</code></td>
<td>Enters SIP configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# ccn subsystem sip</code></td>
<td></td>
</tr>
</tbody>
</table>
Configuring System Components

Configuring SIP Call Control Parameters

Examples

The following example displays the output of the `show ccn subsystem sip` command.

```
se-10-0-0-0# show ccn subsystem sip
SIP Gateway: 172.19.167.208
SIP Port Number: 5060
DTMF Relay: sip-notify rtp-nte
MWI Notification: outcall
Transfer Mode: attended (REFER)
SIP RFC Compliance: Pre-RFC3261
```
Configuring DTMF Options

Several options are available for handling incoming and outgoing DTMF signals for SIP calls from Cisco Unified CME and Cisco SRST mode.

Cisco Unity Express provides the following options for transferring DTMF signals for incoming and outgoing SIP calls.

- **rtp-nte**—Uses the media path to relay incoming and outgoing DTMF signals.

  To use the `rtp-nte` option, verify that the Cisco IOS SIP gateway is configured to use Unsolicited NOTIFY for SIP calls, as shown in the following example:

  ```
  dial-peer voice 1000 voip
  destination-pattern 6700
  session protocol sipv2
  session target ipv4:10.100.9.6
  dtmf-relay sip-notify rtp-nte
  codec g711ulaw
  no vad
  ```

- **sub-notify**—Uses Subscribe and Notify messages to relay incoming DTMF signals to Cisco Unity Express. This option is not available for outgoing DTMF signals from Cisco Unity Express.

- **info**—Uses the Info message to relay outgoing DTMF signals from Cisco Unity Express to the Cisco IOS SIP gateway.

- **sip-notify**—Uses Unsolicited-Notify messages for incoming and outgoing DTMF signals.

  To use the `sip-notify` option, verify that the Cisco IOS SIP gateway is configured to use Unsolicited NOTIFY for SIP calls, as shown in the following example:

  ```
  dial-peer voice 1 voip
  destination-pattern 6700
  session protocol sipv2
  session target ipv4:10.100.9.6
  dtmf-relay sip-notify
  codec g711ulaw
  no vad
  ```

Configure more than one option for transferring DTMF signals. The order in which you configure the options determines their order of preference.

Table 11 shows the various option combinations, the remote end capability, and the signaling option for incoming and outgoing DTMF signals.

### Table 11  DTMF Relay Option Combinations

<table>
<thead>
<tr>
<th>Cisco Unity Express Configuration</th>
<th>Option Supported at Remote End</th>
<th>Option Used for Incoming DTMF to Cisco Unity Express</th>
<th>Option Used for Outgoing DTMF from Cisco Unity Express</th>
</tr>
</thead>
<tbody>
<tr>
<td>sub-notify</td>
<td>—</td>
<td>sub-notify</td>
<td>no DTMF</td>
</tr>
<tr>
<td>info</td>
<td>—</td>
<td>no DTMF</td>
<td>info</td>
</tr>
<tr>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, rtp-nte</td>
<td>rtp-nte, sip-notify</td>
<td>sip-notify&lt;sup&gt;1&lt;/sup&gt;</td>
<td>sip-notify&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>sip-notify, rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
</tbody>
</table>
Table 11  DTMF Relay Option Combinations (continued)

<table>
<thead>
<tr>
<th>Cisco Unity Express Configuration</th>
<th>Option Supported at Remote End</th>
<th>Option Used for Incoming DTMF to Cisco Unity Express</th>
<th>Option Used for Outgoing DTMF from Cisco Unity Express</th>
</tr>
</thead>
<tbody>
<tr>
<td>sip-notify, info</td>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, info</td>
<td>no support²</td>
<td>no DTMF</td>
<td>info</td>
</tr>
<tr>
<td>sip-notify, sub-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, sub-notify</td>
<td>no support²</td>
<td>sub-notify</td>
<td>sub-notify</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, info</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, info</td>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, info</td>
<td>no support²</td>
<td>no DTMF</td>
<td>info</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>no support²</td>
<td>sub-notify</td>
<td>no DTMF</td>
</tr>
<tr>
<td>sub-notify, info</td>
<td>—</td>
<td>sub-notify</td>
<td>info</td>
</tr>
<tr>
<td>rtp-nte, sub-notify</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>rtp-nte, sub-notify</td>
<td>no support²</td>
<td>sub-notify</td>
<td>no DTMF</td>
</tr>
<tr>
<td>rtp-nte, info</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>rtp-nte, info</td>
<td>no support²</td>
<td>no DTMF</td>
<td>info</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>sip-notify, rtp-nte</td>
<td>sip-notify</td>
<td>sip-notify</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
<td>rtp-nte</td>
</tr>
<tr>
<td>sip-notify, rtp-nte, sub-notify</td>
<td>no support²</td>
<td>sub-notify</td>
<td>info</td>
</tr>
</tbody>
</table>

1. For incoming call. For outgoing call, the remote end decides between rtp-nte and sip-notify.
2. No support for rtp-nte and sip-notify.

SUMMARY STEPS

1. config t
2. ccn subsystem sip
3. dtmf-relay { rtp-nte | sub-notify | info | sip-notify }
   To configure more than one signal option, specify them using a single dtmf-relay command.
4. end
5. end
6. show ccn subsystem sip
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> ccn subsystem sip</td>
<td>Enters SIP configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# ccn subsystem sip</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> dtmf-relay {rtp-npe</td>
<td>sub-notify</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-sip)# dtmf-relay sip-notify rtp-npe</td>
<td></td>
</tr>
<tr>
<td>- rtp-npe—Uses the media path to relay incoming and outgoing DTMF signals.</td>
<td></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Verify that the Cisco IOS gateway has a dial-peer configured to use <code>rtp-npe</code>.</td>
</tr>
<tr>
<td>- sub-notify—Uses Subscribe and Notify messages to relay for incoming DTMF signals to Cisco Unity Express.</td>
<td></td>
</tr>
<tr>
<td>- info—Uses the Info message to relay outgoing DTMF signals from Cisco Unity Express to the Cisco IOS SIP gateway.</td>
<td></td>
</tr>
<tr>
<td>- sip-notify—Uses Unsolicited-Notify messages to relay incoming and outgoing DTMF signals.</td>
<td></td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Verify that the Cisco IOS gateway has a dial-peer configured to use <code>sip-notify</code>.</td>
</tr>
<tr>
<td><strong>Step 4</strong> end</td>
<td>Exits SIP configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-sip)# end</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> end</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# end</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> show ccn subsystem sip</td>
<td>Displays SIP configuration parameters.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn subsystem sip</td>
<td></td>
</tr>
</tbody>
</table>

### Examples

The following example displays the output of the `show ccn subsystem sip` command.
Configuring SIP Call Control Parameters

se-10-0-0-0# show ccn subsystem sip
SIP Gateway: 172.19.167.208
SIP Port Number: 5060
DTMF Relay: sip-notify rtp-nte
MWI Notification: outcall
Transfer Mode: consult (REFER)
SIP RFC Compliance: Pre-RFC3261

Configuring the MWI Notification Option

Cisco Unity Express expands MWI status update capability to include Cisco Unified CallManager and Cisco SRST mode. Three notification options are available:

- Outcall Notification, page 41
- Sub-Notify Notification, page 41
- Unsolicited Notification, page 42

The Voice Mail > Message Waiting Indicators > Settings also configures the MWI notification option.

Outcall Notification

Only Cisco Unified CME can use the SIP outcall mechanism for generating MWI notifications. Outcall will not work between Cisco Unity Express and a Cisco Unified CallManager system.

Note: If the MWI notification option is outcall, configure the MWI on and off extensions. See “Configuring the MWI On and Off Extensions (Cisco Unified CME Only)” on page 44.

The outcall option is available for backward compatibility. It is recommended that you use either sub-notify or unsolicited for the MWI notification option.

To use the outcall option, Cisco Unified CME must configure each ephone-dn that is registered to receive MWI notifications as follows:

ephone-dn 30
  number 8000
  mwi on
  .
ephone-dn 31
  number 8001
  mwi off

Sub-Notify Notification

Both Cisco Unified CME and Cisco Unified CallManager in SRST mode can use the sub-notify mechanism for generating MWI notifications. With this mechanism, the MWI notifications will reflect the accurate status of messages in a subscriber’s voice mailbox.

After an ephone-dn is configured with the sub-notify option, Cisco Unified CME sends a Subscribe message to Cisco Unity Express to register the phone for MWI notifications. When a new voice message arrives in the voice mailbox for the ephone-dn, Cisco Unity Express updates the MWI status. If Cisco Unity Express does not receive the Subscribe message for the ephone-dn, Cisco Unity Express will not update the MWI status when a new message arrives.
To use the **sub-notify** option, Cisco Unified CME must configure each ephone-dn that is registered to receive MWI notifications as follows:

**For Cisco IOS Releases Prior to 12.3(11)T7**

```
sip-ua
  .
    mwi-server ipv4:10.100.9.6 transport udp port 5060 number 2010
  ephone-dn 35
    mwi sip
```

**For Cisco IOS Releases 12.3(11)T7 and Later**

```
sip-ua
  .
    mwi-server ipv4:10.100.9.6 transport udp port 5060 number 2010
  ephone-dn 35
    mwi sip
```

**For Cisco SRST Mode**

```
sip-ua
  .
    mwi-server ipv4:10.100.9.6 transport udp port 5060 number 2010
  call-manager-fallback.
    mwi relay
```

The SIP server IP address used in these commands must be the IP address of Cisco Unity Express. In the examples shown above, this is 10.100.9.6.

### Unsolicited Notification

Both Cisco Unified CME and Cisco Unified CallManager in SRST mode can use the **unsolicited** mechanism for generating MWI notifications. With this mechanism, the MWI notifications will reflect the accurate status of messages in a subscriber’s voice mailbox.

The **unsolicited** option does not require Cisco Unified CME to send a subscription request for each ephone-dn to Cisco Unity Express for MWI notifications. Cisco Unity Express sends Notify messages to Cisco Unified CME whenever the voice mailbox for any ephone-dn receives a new message. In this way, the MWI status reflects the current voice mailbox message status.

To use the **unsolicited** option, Cisco Unified CME must configure each ephone-dn that is registered to receive MWI notifications as follows:

**For Cisco IOS Releases Prior to 12.3(11)T7**

```
telephony-service
  .
    mwi sip-server 10.100.9.6 transport udp port 5060 unsolicited number 2010
```
Configuring SIP Call Control Parameters

For Cisco IOS Release 12.3(11)T7 and Later

```plaintext
sip-ua
  .
    mwi-server ipv4:10.100.9.6 transport udp port 5060 unsolicited number 2010
  .
ephone-dn 35
  mwi sip
```

For Cisco SRST Mode

```plaintext
sip-ua
  .
    mwi-server ipv4:10.100.9.6 transport udp port 5060 unsolicited number 2010
  .
call-manager-fallback.
    mwi relay
```

The SIP server IP address used in these commands must be the IP address of Cisco Unity Express. In the examples shown above, this is 10.100.9.6.

**SUMMARY STEPS**

1. `config t`
2. `ccn subsystem sip`
3. `mwi sip {outcall | sub-notify | unsolicited}`
4. `end`
5. `end`
6. `show ccn subsystem sip`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td><code>ccn subsystem sip</code></td>
<td>Enters SIP configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td><code>se-10-0-0-0(config)# ccn subsystem sip</code></td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following example displays the output of the `show ccn subsystem sip` command.

```
se-10-0-0-0# show ccn subsystem sip

SIP Gateway: 172.19.167.208
SIP Port Number: 5060
DTMF Relay: sip-notify, sub-notify
MWI Notification: outcall
Transfer Mode: consult (REFER)
```

Configuring the MWI On and Off Extensions (Cisco Unified CME Only)

Cisco Unity Express uses the MWI on and off extensions with the affected telephone extension to generate a SIP call to Cisco Unified CME, which changes the status of the telephone’s MWI light. This configuration is required only if the MWI notification option is configured as `outcall`. (See the earlier section “Configuring the MWI Notification Option” on page 41.)

Cisco Unity Express refreshes the MWI lights automatically when new messages are received, saved, or deleted or when the software is initialized. Use the GUI option or CLI commands to refresh the MWI lights for a specific telephone or for all configured telephones. See the section, “Refreshing Message Waiting Indicators” on page 120 for the procedure to refresh MWI lights.
Prerequisites

Verify that the MWI on and off extensions are configured on Cisco Unified CME; otherwise, the MWI light will not work.

Required Data for This Procedure

The following information is required to configure the MWI on and off extensions:

- Extension number dedicated to the MWI on extension
- Extension number dedicated to the MWI off extension

SUMMARY STEPS

1. `config t`
2. `ccn application ciscomwiapplication`
3. `parameter strMWI_ON_DN on-extension`
4. `parameter strMWI_OFF_DN off-extension`
5. `end`
6. `exit`
7. `copy running-config startup-config`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>Command of Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td><code>ccn application ciscomwiapplication</code></td>
<td>Enters configuration mode for the MWI application.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config)# ccn application ciscomwiapplication</code></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td><code>parameter strMWI_ON_DN on-extension</code></td>
<td>Assigns the <em>on-extension</em> value as the MWI on extension.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config-application)# parameter strMWI_ON_DN 7000</code></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td><code>parameter strMWI_OFF_DN off-extension</code></td>
<td>Assigns the <em>off-extension</em> value as the MWI off extension.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config-application)# parameter strMWI_OFF_DN 7001</code></td>
<td></td>
</tr>
</tbody>
</table>
Configuring System Components

Configuring SIP Call Control Parameters

Cisco Unity Express 2.3 CLI Administrator Guide

Configuring Cisco Unified CME SIP Options for RFC Compliance

Cisco IOS software releases prior to the 12.4(2)T release are not RFC3261 compliant. The lack of compliance causes the Cisco Unity Express 2.3 software not to interwork properly with those older Cisco IOS releases when sip-notify or sub-notify are used for DTMF. Cisco Unity Express provides the protocol command to ensure compatibility with all Cisco IOS software releases.

Required Data for This Procedure

The release number of the Cisco IOS software running on your call platform.

SUMMARY STEPS

1. config t
2. ccn subsystem sip
3. protocol {pre-rfc3261 | rfc3261}
4. end
5. exit
6. show ccn subsystem sip
**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command of Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# config t</td>
</tr>
<tr>
<td>Step 2 ccn subsystem sip</td>
<td>Enters configuration mode for the SIP subsystem.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# ccn subsystem sip</td>
</tr>
<tr>
<td>Step 3 protocol {pre-rfc3261 | rfc3261}</td>
<td>Assigns the protocol type for RFC 3261 compatibility.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# protocol rfc3261</td>
</tr>
<tr>
<td>Step 4 end</td>
<td>Exits SIP subsystem configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-sip)# end</td>
</tr>
<tr>
<td>Step 5 exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config# exit</td>
</tr>
<tr>
<td>Step 6 show ccn subsystem sip</td>
<td>Displays the configured SIP subsystem parameters.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# show ccn subsystem sip</td>
</tr>
</tbody>
</table>

**Example**

The following example sets the SIP protocol option to RFC3261 for call platforms using Cisco IOS release 12.4(2)T or later.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ccn subsystem sip
se-10-0-0-0(config-sip)# protocol rfc3261
se-10-0-0-0(config-sip)# end
se-10-0-0-0(config-sip)# exit
se-10-0-0-0#
```

The following display illustrates the output for the `show ccn subsystem sip` command.

```
se-10-0-0-0# show ccn subsystem sip
SIP Gateway: 10.10.5.1
SIP Port Number: 5060
DTMF Relay: sip-notify,sub-notify
MWI Notification: sub-notify
```
Configuring JTAPI Parameters (Cisco Unified CallManager Only)

Use this procedure to configure the parameters that Cisco Unity Express needs to communicate with Cisco Unified CallManager.

Cisco Unified CallManager and Cisco Unity Express Version Compatibility
Cisco Unity Express can be configured to work with Cisco Unified CallManager 4.2 and 5.0. The following scenarios apply when installing Cisco Unity Express with a different version of Cisco Unified CallManager, or upgrading the Cisco Unified CallManager version:

- If Cisco Unity Express is installed with Cisco Unified CallManager 4.2 or 5.0, Cisco Unity Express will reload once after the reload that you initiate at the completion of the initialization wizard procedure.
- If Cisco Unity Express is installed with Cisco Unified CallManager 4.0 or lower, and Cisco Unified CallManager is upgraded to version 4.1, 4.2, or 5.0, then Cisco Unity Express reloads and updates its system files to work with the new version of Cisco Unified CallManager. No further action from you is required.

Caution
Cisco Unity Express 2.3 does not support versions of Cisco Unified CallManager prior to 4.1. If you are using an earlier version of Cisco Unified CallManager, you must upgrade to version 4.1 or higher to interoperate with Cisco Unity Express 2.3.

Required Data for This Procedure
The following information is required to configure the JTAPI parameters:

- IP address or hostname for the primary, secondary, and tertiary Cisco Unified CallManager servers
- JTAPI user ID and password from Cisco Unified CallManager. The password is case sensitive. These values must match the JTAPI user ID and password that were configured on Cisco Unified CallManager.
- List of CTI ports

Note
If you are using Cisco Unified CallManager 5.0 or later, verify that the AXL service is active. To do this, go to the Cisco Unified CallManager serviceability website, click on Tools > Service Activation. Look for Cisco AXL Web service.

SUMMARY STEPS

1. config t
2. ccn subsystem jtapi
3. `ccm-manager address {primary-server-ip-address | primary-server-hostname} {secondary-server-ip-address | secondary-server-hostname} {tertiary-server-ip-address | tertiary-server-hostname}`

4. `ccm-manager username jtapi-user-id password jtapi-user-password`

5. `ctiport cti-port-number`

6. `end`

7. `exit`

8. `show ccn subsystem jtapi`

9. `copy running-config startup-config`
## Configuring JTAPI Parameters (Cisco Unified CallManager Only)

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)#</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> ccn subsystem jtapi</td>
<td>Enters JTAPI configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# ccn subsystem jtapi</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)#</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> ccm-manager address {primary-server-ip-address</td>
<td>primary-server-hostname}</td>
</tr>
<tr>
<td>(secondary-server-ip-address</td>
<td>secondary-server-hostname)</td>
</tr>
<tr>
<td>(tertiary-server-ip-address</td>
<td>tertiary-server-hostname)</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ccm-manager address 10.100.10.120</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ccm-manager address 10.100.10.120 10.120.10.120 10.130.10.120</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> ccm-manager username jtapi-user-id password jtapi-user-password</td>
<td>Specifies the JTAPI user ID and password. The password is case sensitive. These values must match the JTAPI user ID and password that were configured on Cisco Unified CallManager.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ccm-manager username jtapiuser password myjtapi</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> ctiport cti-port1 cti-port2 cti-port3 cti-port4...</td>
<td>Specifies the JTAPI CTI ports that are configured on Cisco Unified CallManager and that are associated with the Cisco Unified CallManager JTAPI user.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ctiport 7008</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ctiport 7009</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ctiport 7010</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ctiport 7011</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# ctiport 6001 6002 6003 6004 6005 6006 6007 6008</td>
<td>Repeat the command to enter more than one port number or enter the ports on one line. For CUE-AIM, specify up to 4 ports. For CUE-NM, specify up to 8 ports. For CUE-NM-EC, specify up to 16 ports.</td>
</tr>
<tr>
<td><strong>Step 6</strong> end</td>
<td>Exits JTAPI configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-jtapi)# end</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)#</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following example illustrates the `show ccn subsystem jtapi` output:

```
se-10-0-0-0# show ccn subsystem jtapi

Cisco Call Manager: 10.100.10.120
CCM JTAPI Username: jtapiuser
CCM JTAPI Password: *****
Call Control Group 1 CTI ports: 7008,7009,7010,7011
```
Configuring the Voice-Mail Application

After the Cisco Unity Express software is installed on the system, the voice-mail application that ships with Cisco Unity Express must be configured using the procedures described in this section. The application is enabled by default.

To configure the voice-mail access and operator telephone numbers, see “Configuring SIP Triggers for the Applications” on page 64 or “Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only)” on page 66.

The commands are used in both EXEC and configuration modes.

Sharing Ports Among Applications and Triggers

One of the parameters that you may configure for the voice-mail and auto-attendant applications is the maximum number of callers who can concurrently access the application at any given time. This parameter, maxsessions, is limited by the number of ports on the Cisco Unity Express module. (See “Software Licenses and Factory-Set Limits” on page 9 for the number of ports on your module.) For Cisco Unified CallManager, the ports are configured using the ctiport command (see “Configuring JTAPI Parameters (Cisco Unified CallManager Only)” on page 48).

Consider your expected call traffic when assigning the number of ports to an application. One application may need more available ports than another, but each application should have at least one port available for incoming calls.

Suppose, for example, that your module has four ports and you assign four to the voice-mail application maxsessions and four to the auto-attendant maxsessions. If four callers access voice-mail simultaneously, no ports will be available for auto-attendant callers. Only when zero, one, two, or three callers access voice-mail simultaneously will at least one port be available for auto-attendant.

Suppose, instead, that you assign three to the voice-mail maxsessions and three to the auto-attendant maxsessions. At no time will one application use up all the ports. If voice-mail has three active calls, one caller can access auto-attendant. A second call to auto-attendant will not go through at that moment.

Similarly, you must assign the maxsessions parameter to each application trigger, which is the telephone number that activates the application’s script. The value of the trigger’s maxsessions must not exceed the application’s maxsessions value.

Required Data for This Procedure

The following information is required to configure the default voice-mail application:

- Application name: voicemail
- Maximum number of subscribers who can access voice-mail simultaneously
SUMMARY STEPS

1. `config t`
2. `ccn application voicemail`
3. `description "text"`
4. `maxsessions number`
5. `end`
6. `exit`
7. `show ccn application`
8. `copy running-config startup-config`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> <code>ccn application voicemail</code></td>
<td>Enters application configuration mode for the voice-mail application.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0(config)# ccn application voicemail</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> <code>description &quot;text&quot;</code></td>
<td>(Optional) Enters a description of the application. Use double quotes around the text.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0(config-application)# description &quot;Voice Mail&quot;</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> <code>maxsessions number</code></td>
<td>Specifies the number of subscribers who can access this application simultaneously. See “Sharing Ports Among Applications and Triggers” on page 52 for guidelines on assigning this value.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0(config-application)# maxsessions 6</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> <code>end</code></td>
<td>Exits application configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0(config-application)# end</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> <code>exit</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> <code>se-10-0-0-0(config)# exit</code></td>
<td></td>
</tr>
</tbody>
</table>
Example

The following example illustrates the show ccn application output:

```
se-10-0-0-0# show ccn application

Name: voicemail
Description: Voice Mail
Script: voicebrowser.aef
ID number: 1
Enabled: yes
Maximum number of sessions: 6
logoutUri: http://localhost/voicemail/vxmlscripts/mbxLogout.jsp
uri: http://localhost/voicemail/vxmlscripts/login.vxml

se-10-0-0-0#
```
Configuring the Administration via Telephone Application

The Administration via Telephone (AvT) application is a telephony-based interface that allows Cisco Unity Express that offers the following capabilities:

- Administrators can record new audio prompts or delete existing custom audio prompts without using a PC or sound-editing software, such as with the telephone user interface (TUI). These prompts can then be used in various Cisco Unity Express Automated Attendant (AA) scripts, such as the Welcome prompt in the default auto-attendant. The Emergency Alternate Greeting (EAG) is an option within the AvT that allows subscribers to record, modify, and enable or disable a special greeting to be played before the regular greeting, notifying callers of some temporary event or message.
- Administrators can rerecord existing prompts.
- Administrators can send broadcast messages. Subscribers who have the broadcast privilege can access a limited set of AvT capabilities.
- Administrators can record spoken names for remote locations and remote subscribers.

The Cisco Unity Express module installation automatically configures the AvT application. Only users with administrative (superuser) privileges or prompt management (ManagePrompt) privileges have access to the AvT. (See “Adding and Modifying a Group” on page 104 for information about assigning privileges.) When a caller dials the AvT number, the AvT authenticates the caller by requesting the caller’s extension and PIN. The AvT disconnects the caller if the caller does not have administrative authority.

To configure the AvT access telephone number, see “Configuring SIP Triggers for the Applications” on page 64 or “Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only)” on page 66.

Configuring and Managing the Auto-Attendant Application

After the Cisco Unity Express software is installed on the system, the auto-attendant application that ships with Cisco Unity Express must be configured using the procedures described in this section.

Default Prompts

The administrator can download, copy, and upload only the following prompts: AAWelcome.wav, AAHolidayPrompt.wav, AABusinessOpen.wav, and AABusinessClosed.wav.

To customize the default welcome prompt, see “Customizing the Default Auto-Attendant Welcome Prompt” on page 61.

Default Auto-Attendant Script aa.aef

The default auto-attendant script provided with Cisco Unity Express is named aa.aef. This file resides in the system directory, and cannot be downloaded, copied, or uploaded. This default auto-attendant application is also known as the “system script” or “system AA.” This default script supports basic functions such as dial-by-extension, dial-by-spelling username, and call operator functions. If additional functionality is required, then you must create a customized auto-attendant script.
The `aa.aef` script supports holiday lists and business-hours schedules. When a call reaches the auto-attendant, the system checks if the current day is a holiday. If it is, the system plays a holiday prompt called `AAHolidayPrompt.wav`, which states “We are closed today. Please call back later.” The script then executes the next operation in the script.

If the current day is not a holiday, the system checks if the business is open or not. If the business is open, the system plays the `AABusinessOpen.wav` prompt, which is an empty file. If the business is closed, the system plays the `AABusinessClosed.wav` prompt, which states “We are currently closed. Please call back later.”

Following are the parameters that may be configured for the `aa.aef` script:

- `welcomePrompt`—default: `AAWelcome.wav`
- `operExtn`—default: none
- `holidayPrompt`—default: `AAHolidayPrompt.wav`
- `businessOpenPrompt`—default: `AABusinessOpen.wav`
- `businessClosedPrompt`—default: `AABusinessClosed.wav`
- `businessSchedule`—default: `systemschedule`
- `disconnectAfterMenu`—default: false
- `allowExternalTransfers`—default: false

To modify any of these prompts, see “Configuring Auto-Attendant Prompts” on page 60.

To create customized script files, see “Configuring Auto-Attendant Scripts” on page 63.

To create a business-hours schedule, see “Configuring Business Hours” on page 89.

To create a holiday list, see “Configuring a Holiday List” on page 85.

### Simple Auto-Attendant Script `aasimple.aef`

Another simple system script `aasimple.aef` is available for the auto-attendant application. This script can be associated with an auto-attendant application and cannot be deleted or downloaded.

This script makes the same checks for an alternate greeting, holiday hours, and business schedule as does the `aa.aef` script.

The initial greeting prompt is a configurable parameter. Use the GUI options or CLI commands to configure the prompt with the names and extensions of the people who can be reached with the auto-attendant application. For example, the prompt may play “For Al, press 10. For Bob, press 20. For the operator, press 0.”

The caller can enter an extension without pressing the pound key (#). After the caller enters the extension, the script attempts to transfer to that extension. The script does not attempt to validate the extension before the transfer.

The script has another parameter (extensionLength) that specifies the length of the extension used by the Cisco Unity Express system. This parameter must be configured correctly for the script to be able to do a successful transfer.

Following are the parameters that may be configured for the `aasimple.aef` script:

- `welcomePrompt`—default: `AAWelcome.wav`
- `operExtn`—default: 0
- `MaxRetry`—default: 3
• holidayPrompt—default: AAHolidayPrompt.wav
• businessOpenPrompt—default: AABusinessOpen.wav
• businessClosedPrompt—default: AABusinessClosed.wav
• playExtensionsPrompt—default: AASPlayExtensions.wav
• extensionLength—default: 1
• businessSchedule—default: systemschedule
• disconnectAfterMenu—default: false
• allowExternalTransfers—default: false

To modify any of these prompts, see “Configuring Auto-Attendant Prompts” on page 60.

To create customized script files, see “Configuring Auto-Attendant Scripts” on page 63.

To create a business-hours schedule, see “Configuring Business Hours” on page 89.

To create a holiday list, see “Configuring a Holiday List” on page 85.

Configuring Other Auto-Attendant Parameters

To configure the auto-attendant access telephone number, see “Configuring SIP Triggers for the Applications” on page 64 or “Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only)” on page 66.

The commands are used in both EXEC and configuration modes.

See “Configuring Application Parameters” on page 196 for procedures to configure user-defined parameters.

Required Data for This Procedure

The following information is required to configure auto-attendant:

• To use your own welcome greeting, create a .wav file containing the prerecorded welcome greeting. This file must be uploaded to the Cisco Unity Express module so that it can be located and saved in the auto-attendant script. Alternatively, you can use the Administration via Telephone (AvT) application to record the welcome greeting. See “Recording an Auto-Attendant Greeting or Prompt File” on page 61 for guidelines on recording a greeting. See “Uploading the Auto-Attendant Greeting or Prompt File” on page 61 for the procedure to upload the prompt to Cisco Unity Express.

• Application name.

• Number of times the auto-attendant will replay instructions to a caller before the call is disconnected. This count begins when the caller moves past the main menu and starts to hear instructions for a submenu. The main menu will play five times and then, if the caller makes no choice or incorrect choices, will transfer to the operator.

• Extension number of the operator. Auto attendant dials this extension when the caller presses the zero (“0”) button.

• The customized .wav filename if you change the default Auto Attendant welcome prompt.

• Telephone number that the caller must dial to reach the auto-attendant. In many cases, this number is your company telephone number.
• Maximum number of callers that auto-attendant can handle simultaneously. See “Sharing Ports Among Applications and Triggers” on page 52 for guidelines on assigning this value.

### SUMMARY STEPS

1. config t
2. ccn application autoattendant
3. (Optional) description “text”
4. maxsessions number
5. parameter “name” “value”
6. end
7. exit
8. show ccn application
9. copy running-config startup-config

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 config t</td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# config t
```

<table>
<thead>
<tr>
<th>Step 2 ccn application autoattendant</th>
<th>Specifies the application to configure and enters application configuration mode. Use the full name of the application for the full-name argument.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config)# ccn application AutoAttendant
```

<table>
<thead>
<tr>
<th>Step 3 description “text”</th>
<th>(Optional) Enters a description of the application. Use double quotes around the text.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# description "Auto Attendant"
```

<table>
<thead>
<tr>
<th>Step 4 maxsessions number</th>
<th>Specifies the number of callers who can access this application simultaneously. See “Sharing Ports Among Applications and Triggers” on page 52 for guidelines on assigning this value.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# maxsessions 4
```
### Configuring System Components

#### Configuring and Managing the Auto-Attendant Application

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 5</strong></td>
<td></td>
</tr>
<tr>
<td>parameter &quot;name&quot; = &quot;value&quot;</td>
<td>Specifies parameters for the application. Each parameter must have a name and a value, which is enclosed in double quotes. The parameters below are case-sensitive. For more information, see the “Configuring Application Parameters” section on page 196. For the auto-attendant application, the parameters are:</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-application)# parameter &quot;operExtn&quot; &quot;1000&quot;</td>
<td>“operExtn”—Extension that the system dials when a caller presses “0” to reach the auto-attendant operator. This is also the extension where the call will be transferred to if there is no caller input (timeout).</td>
</tr>
<tr>
<td>se-10-0-0-0(config-application)# parameter &quot;MaxRetry&quot; &quot;3&quot;</td>
<td>“MaxRetry”—Maximum number of times a caller can incorrectly choose a submenu option before the application disconnects the call. The default is 3.</td>
</tr>
<tr>
<td>se-10-0-0-0(config-application)# parameter &quot;welcomePrompt&quot; &quot;ciscowelcome.wav&quot;</td>
<td>“welcomePrompt”—The .wav filename containing the customized AA welcome prompt that is uploaded to the Cisco Unity Express module.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td></td>
</tr>
<tr>
<td>end</td>
<td>Exits application configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-application)# end</td>
<td></td>
</tr>
</tbody>
</table>
Configuring System Components

Configuring and Managing the Auto-Attendant Application

Command or Action | Purpose
--- | ---
**Step 7** exit | Exits configuration mode.

**Example:**
```
se-10-0-0-0(config)# exit
```

**Step 8** show ccn application | Displays details about each configured application.

**Example:**
```
se-10-0-0-0# show ccn application
```

**Step 9** copy running-config startup-config | Copies the configuration changes to the startup configuration.

**Example:**
```
se-10-0-0-0# copy running-config startup-config
```

---

**Examples**

The following example illustrates the auto-attendant information from the `show ccn application` output:
```
se-10-0-0-0# show ccn application
```

<table>
<thead>
<tr>
<th>Name</th>
<th>autoattendant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>autoattendant</td>
</tr>
<tr>
<td>Script</td>
<td>aa.aef</td>
</tr>
<tr>
<td>ID number</td>
<td>3</td>
</tr>
<tr>
<td>Enabled</td>
<td>yes</td>
</tr>
<tr>
<td>Maximum number of sessions</td>
<td>8</td>
</tr>
<tr>
<td>busOpenPrompt</td>
<td>AABusinessOpen.wav</td>
</tr>
<tr>
<td>operExtn</td>
<td>1000</td>
</tr>
<tr>
<td>welcomePrompt</td>
<td>AAWelcome.wav</td>
</tr>
<tr>
<td>disconnectAfterMenu</td>
<td>false</td>
</tr>
<tr>
<td>busClosedPrompt</td>
<td>AABusinessClosed.wav</td>
</tr>
<tr>
<td>allowExternalTransfers</td>
<td>false</td>
</tr>
<tr>
<td>holidayPrompt</td>
<td>AAHolidayPrompt.wav</td>
</tr>
<tr>
<td>businessSchedule</td>
<td>systemschedule</td>
</tr>
<tr>
<td>MaxRetry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Configuring Auto-Attendant Prompts**

Cisco Unity Express supports customized greeting and prompt files. The CUE-NM-EC and CUE-NM support up to 120 prompts; the CUE-AIM supports up to 25 prompts.

Customizing prompts requires the following procedures:

- **Recording an Auto-Attendant Greeting or Prompt File, page 61** (Required)
- **Customizing the Default Auto-Attendant Welcome Prompt, page 61** (Required)
- **Uploading the Auto-Attendant Greeting or Prompt File, page 61** (Required)
- **Downloading an Auto-Attendant Greeting or Prompt File, page 62** (Optional)
- **Renaming an Auto-Attendant Greeting or Prompt File, page 62** (Optional)
- **Deleting an Auto-Attendant Greeting or Prompt File, page 62** (Optional)
Recording an Auto-Attendant Greeting or Prompt File

Two methods are available to create auto-attendant greeting and prompt files:

- Create a .wav file with the following format: G.711 u-law, 8 kHz, 8 bit, Mono. The file cannot be larger than 1 MB (about 2 minutes). After recording the greeting, use the GUI or Cisco Unity Express CLI `ccn copy url` command to copy the file in to the Cisco Unity Express system. See the next section, “Uploading the Auto-Attendant Greeting or Prompt File,” for the upload procedure.

- Use the AvT on the TUI to record the greeting or prompt. Dial the AvT telephone number and select the option to record a greeting. When finished recording, save the file. AvT automatically saves the file in Cisco Unity Express.

The AvT prompt filename has the format UserPrompt_DateTime.wav, for example: UserPrompt_11152003144055.wav. You may want to use CLI commands or GUI options to rename the file with a meaningful name.

Cisco recommends using the AvT on the TUI to record greetings and prompts because the AvT provides higher sound quality compared to .wav files recorded using other methods.

Uploading the Auto-Attendant Greeting or Prompt File

After recording the .wav greeting or prompt file, upload the file using the `ccn copy url` command in Cisco Unity Express EXEC mode:

```
ccn copy url source-ip-address prompt prompt-filename
```

Example:
```
se-10-0-0-0# ccn copy url ftp://10.100.10.123/AAprompt1.wav prompt AAprompt1.wav
se-10-0-0-0# ccn copy url http://www.server.com/AAgreeting.wav prompt AAgreeting.wav
```

This command is equivalent to using the GUI option Voice Mail > Prompts and selecting Upload. An error message appears if you try to upload more than the maximum number of prompts allowed on your Cisco Unity Express module.

Customizing the Default Auto-Attendant Welcome Prompt

The default AA greeting included with the system lasts two seconds and plays the prompt “Welcome to the AutoAttendant.” You can record a custom welcome prompt specifically for your system to welcome callers. The default .wav filename is `AWelcome.wav`. While the default welcome prompt in the .wav file lasts two seconds long, you can record a new welcome prompt up to 120 seconds long. The welcome prompt .wav file can be up to 1 MB in G.711 u-law format.

If you create a customized welcome prompt, use a different .wav filename and upload the new .wav file to the Cisco Unity Express module. Do not overwrite the default `AWelcome.wav` filename. For information about uploading the welcome prompt .wav file, see the “Uploading the Auto-Attendant Greeting or Prompt File” section on page 61.

The .wav file for the welcome prompt is not interruptible, meaning that the longer the recorded welcome prompt is, the longer callers must wait before being able to enter digits to reach other extensions. We recommend you record a short welcome prompt so that callers can access the voicemail system quickly.
Following this welcome prompt, the default script plays the menu announcement listing the menu options for callers. These are not customizable prompts within the default auto-attendant provided with the system. Note that if a caller uses the dial-by-extension option, the system will attempt to transfer to any extension, including extensions not defined using Cisco Unity Express. To prevent callers from transferring to extensions not defined using Cisco Unity Express, configure class of restrictions (COR) on the dial-peer, or develop a custom script to prevent the option.

**Downloading an Auto-Attendant Greeting or Prompt File**

Greetings and prompts can be copied from the auto-attendant and stored to another server or PC.

To copy a greeting or prompt file, use the `ccn copy prompt` command in Cisco Unity Express EXEC mode:

```
ccn copy prompt prompt-filename url ftp://destination-ip-address/prompt-filename
[language xx_YY] [username name password password]
```

where `prompt-filename` is the file to be copied, `destination-ip-address` is the IP address of the FTP server, `xx_YY` is the language of the prompt file, `name` is the FTP server login ID, and `password` is the FTP server password.

**Example:**

```
se-10-0-0-0# ccn copy prompt AAprompt2.wav url ftp://10.100.10.123/AAprompt2.wav
```

**Renaming an Auto-Attendant Greeting or Prompt File**

To rename an auto-attendant greeting or prompt file, use the `ccn rename prompt` command in Cisco Unity Express EXEC mode:

```
ccn rename prompt old-name new-name
```

where `old-name` is the existing filename and `new-name` is the revised name.

**Example:**

```
se-10-0-0-0# ccn rename prompt AAmyprompt.wav AAmyprompt2.wav
```

**Deleting an Auto-Attendant Greeting or Prompt File**

To delete an auto-attendant greeting or prompt file from Cisco Unity Express, use the `ccn delete` command in Cisco Unity Express EXEC mode:

```
ccn delete prompt prompt-filename
```

where `prompt-filename` is the file to be deleted.

**Example:**

```
se-10-0-0-0# ccn delete prompt AAgreeting.wav
```
Configuring Auto-Attendant Scripts

Cisco Unity Express supports customized script files. The CUE-NM-EC and CUE-NM support up to eight scripts; the CUE-AIM supports up to four scripts.

Customizing scripts involves the following procedures:

- Creating an Auto-Attendant Script File, page 63
- Uploading the Auto-Attendant Script File, page 63
- (Optional) Downloading an Auto-Attendant Script File, page 63
- (Optional) Deleting an Auto-Attendant Script File, page 64

Creating an Auto-Attendant Script File

The auto-attendant script file is created using the script editor program. Refer to the Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts for guidelines and procedures for creating a script file.

The file cannot be larger than 256 KB.

After creating the script, use the GUI or Cisco Unity Express ccn copy command to copy the file to the Cisco Unity Express system. See the next section, “Uploading the Auto-Attendant Script File,” for the upload procedure.

Uploading the Auto-Attendant Script File

After recording the .wav greeting or prompt file, upload the file using the ccn copy url command in Cisco Unity Express EXEC mode:

```
ccn copy url ftp://source-ip-address/script-filename.aef script script-filename.aef [username password password]
```

Example:

```
se-10-0-0-0# ccn copy url ftp://10.100.10.123/AVTscript.aef script AVTscript.aef
se-10-0-0-0# ccn copy url http://www.server.com/AVTscript.aef script AVTscript.aef
```

This command is equivalent to using the GUI option Voice Mail > Scripts and selecting Upload.

An error message appears if you try to upload more than the maximum number of scripts allowed on your Cisco Unity Express module.

Downloading an Auto-Attendant Script File

Scripts can be copied from the auto-attendant and stored on another server or PC.

To copy a script file, use the ccn copy script command in Cisco Unity Express EXEC mode:

```
ccn copy script script-filename url ftp://destination-ip-address/script-filename
```

Example:

```
se-10-0-0-0# ccn copy script AVTscript.aef url ftp://10.100.10.123/AVTscript.aef
```
Deleting an Auto-Attendant Script File

To delete an auto-attendant script file from Cisco Unity Express, use the `ccn delete` command in Cisco Unity Express EXEC mode:

```
ccn delete script script-filename
```

Example:
```
se-10-0-0-0# ccn delete script AVTscript.aef
Are you sure you want to delete this script? (y/n)
```

Configuring SIP Triggers for the Applications

After the voice-mail, auto-attendant and AvT applications are configured, the system must be configured to start the voice-mail, auto-attendant, and AvT applications when a specific signal, or trigger, is invoked. The trigger is a telephone number. When a caller dials a specified telephone number, the SIP subsystem starts the voice-mail, auto-attendant, or AvT application.

Cisco Unity Express supports a maximum of 8 SIP triggers for all applications combined. This applies to the CUE-NM-EC, CUE-NM, and the CUE-AIM. See “Advanced Configuration” on page 195 for procedures to configure multiple triggers for an application.

This configuration is required for Cisco Unified CME and Cisco Unified CallManager (SRST mode).

Required Data for This Procedure

The following information is required to configure the SIP triggers for auto-attendant:

- Telephone number that invokes the application. The number must be different for voice-mail, auto-attendant, and the AvT. The `number` value should match one of the patterns configured in the `destination-pattern` field of the SIP dial peer pointing to Cisco Unity Express.
- Maximum number of callers, or sessions, that can access the trigger simultaneously. See the section “Sharing Ports Among Applications and Triggers” on page 52 for guidelines on assigning this value.

SUMMARY STEPS

1. `config t`
2. `ccn trigger sip phonenumbe number`
3. `application string`
4. `enabled`
5. `maxsessions number`
6. `end`
7. `exit`
8. `show ccn trigger`
9. `copy running-config startup-config`
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> ccn trigger sip phonenumber number</td>
<td>Specifies the telephone number that acts as the trigger to start the application on the Cisco Unity Express module and enters trigger configuration mode. The number value should match one of the patterns configured in the destination-pattern field of the SIP dial peer pointing to Cisco Unity Express.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# ccn trigger sip phonenumber 50150</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# ccn trigger sip phonenumber 50160</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> application string</td>
<td>Specifies the name of the application to start when the trigger is entered.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# application voicemail</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# application autoattendant</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# application promptmanagement</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> enabled</td>
<td>Enables the trigger.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# enabled</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> maxsessions number</td>
<td>Specifies the maximum number of callers that the application can handle simultaneously. See “Sharing Ports Among Applications and Triggers” on page 52 for guidelines on assigning this value.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# maxsessions 3</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# maxsessions 6</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> end</td>
<td>Exits trigger configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# end</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> show ccn trigger</td>
<td>Displays the parameter values for all configured triggers.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn trigger</td>
<td></td>
</tr>
<tr>
<td><strong>Step 9</strong> copy running-config startup-config</td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# copy running-config startup-config</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following sample configuration sets two triggers for the voice-mail application:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ccn trigger sip phonenumber 50150
se-10-0-0-0(config-trigger)# application voicemail
se-10-0-0-0(config-trigger)# maxsessions 4
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config)#
se-10-0-0-0(config)# ccn trigger sip phonenumber 50160
se-10-0-0-0(config-trigger)# application autoattendant
se-10-0-0-0(config-trigger)# maxsessions 3
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config)#
```

The output for `show ccn trigger` will look similar to the following:

```
se-10-0-0-0# show ccn trigger
Name:                         50150
Type:                         SIP
Application:                  voicemail
Locale:                       systemDefault
Idle Timeout:                 5000
Enabled:                      yes
Maximum number of sessions:   4

Name:                         50160
Type:                         SIP
Application:                  autoattendant
Locale:                       systemDefault
Idle Timeout:                 5000
Enabled:                      yes
Maximum number of sessions:   3
```

Configuring JTAPI Triggers for the Applications
(Cisco Unified CallManager Only)

After the voice-mail, auto attendant and AvT applications are configured, Cisco Unity Express must
be configured to start the voice-mail, auto attendant, and AvT applications when a specific signal, or trigger,
is invoked. The trigger is a telephone number. When a caller dials a specified telephone number, Cisco
Unity Express starts the voice-mail, auto-attendant, or AvT application.

Cisco Unity Express supports a maximum of 8 SIP triggers and 8 JTAPI triggers for all applications
combined. This applies to the CUE-NM-EC, CUE-NM, and the CUE-AIM. See the section “Advanced
Configuration” on page 195 for procedures to configure multiple triggers for an application.

This configuration is required for only for Cisco Unified CallManager mode (not Cisco SRST mode).

Required Data for This Procedure

The following information is required to configure the JTAPI triggers:
Telephone number that invokes the application. The number must not be the same for both voice mail and auto attendant.

Number of seconds the system must wait for a caller response before it times out and drops the call.

Language to use for the prompts. Cisco Unity Express supports several languages. Only one can be installed on the system. See the Release Notes for Cisco Unity Express 2.3 for a list of available languages.

Maximum number of callers that can access the trigger simultaneously. See the “Sharing Ports Among Applications and Triggers” section on page 52 for guidelines on assigning this value.

SUMMARY STEPS

1. config t
2. ccn trigger jtapi phonenumber number
3. application string
4. enabled
5. maxsessions number
6. end
7. exit
8. show ccn trigger
9. copy running-config startup-config

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td>Step 2 ccn trigger jtapi phonenumber number</td>
<td>Specifies the telephone number that acts as the trigger to start the application on Cisco Unity Express and enters trigger configuration mode. The number value must match a JTAPI route point configured on Cisco Unified CallManager.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# ccn trigger jtapi phonenumber 6700</td>
<td></td>
</tr>
<tr>
<td>Step 3 application string</td>
<td>Specifies the name of the application to start when the trigger is entered.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# application promptmanagement</td>
<td></td>
</tr>
<tr>
<td>Step 4 enabled</td>
<td>Enables the trigger.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-trigger)# enabled</td>
<td></td>
</tr>
</tbody>
</table>
### Configuring JTAPI Triggers for the Applications (Cisco Unified CallManager Only)

#### Purpose

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 5</strong> maxsessions number</td>
<td>Specifies the maximum number of callers that the application can handle simultaneously. See the “Sharing Ports Among Applications and Triggers” section on page 52 for guidelines on assigning this value.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-trigger)# maxsessions 3</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> end</td>
<td>Exits trigger configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-trigger)# end</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> show ccn trigger</td>
<td>Displays the parameter values for all configured triggers.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# show ccn trigger</td>
<td></td>
</tr>
<tr>
<td><strong>Step 9</strong> copy running-config startup-config</td>
<td>Copies the configuration change to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# copy running-config startup-config</td>
<td></td>
</tr>
</tbody>
</table>

#### Examples

The following sample configuration sets two triggers, one for the voice-mail application and one for the auto-attendant application:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ccn trigger jtapi phonenumber 6500
se-10-0-0-0(config-trigger)# application voicemail
se-10-0-0-0(config-trigger)# maxsessions 4
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config-trigger)# end
se-10-0-0-0(config)#
se-10-0-0-0(config)# ccn trigger jtapi phonenumber 6700
se-10-0-0-0(config-trigger)# application autoattendant
se-10-0-0-0(config-trigger)# maxsessions 8
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config-trigger)# end
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

The output for the `show ccn trigger` command will look similar to the following:

```
se-10-0-0-0# show ccn trigger

Name: 6500
Type: JTAPI
Application: voicemail
Locale: en_ENU
Idle Timeout: 600
Enabled: yes
```
Deleting a SIP Application Trigger

Use this procedure to delete a SIP application trigger. Deleting the trigger does not delete the application, although the application needs at least one trigger in order to be invoked by the system.

Required Data for This Procedure

The trigger number is required to delete a trigger.

**SUMMARY STEPS**

1. show ccn trigger
2. config t
3. no ccn trigger sip phonenumber number
4. exit
5. show ccn trigger
6. copy running-config startup-config

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show ccn trigger</td>
<td>Displays the currently configured triggers. Look for the telephone number that you want to delete. Verify that this telephone number is associated with the correct application.</td>
</tr>
<tr>
<td><strong>Step 2</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Step 3</strong> no ccn trigger sip phonenumber number</td>
<td>Deletes the trigger number.</td>
</tr>
</tbody>
</table>

Example:

```
se-10-0-0-0# show ccn trigger
se-10-0-0-0# config t
se-10-0-0-0(config)# no ccn trigger sip phonenumber 50100
```
Deleting a SIP Application Trigger

**Command or Action**

<table>
<thead>
<tr>
<th>Step 4</th>
<th>exit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# exit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 5</th>
<th>show ccn trigger</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# show ccn trigger</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 6</th>
<th>copy running-config startup-config</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# copy running-config startup-config</td>
</tr>
</tbody>
</table>

### Example

The output for **show ccn trigger** will look similar to the following:

```
se-10-0-0-0# show ccn trigger
Name: 6500
Type: SIP
Application: voicemail
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 4

Name: 6700
Type: SIP
Application: autoattendant
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 8
```

The following configuration removes a trigger from the voice-mail application:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no ccn trigger sip phonenumbe 6500
se-10-0-0-0(config)# exit
```

Now the output for **show ccn trigger** will look similar to the following:

```
se-10-0-0-0# show ccn trigger
Name: 6700
Type: SIP
Application: autoattendant
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 8
```

**Step 4**

Exits configuration mode.

**Step 5**

Displays the configured triggers.

**Step 6**

Copies the configuration changes to the startup configuration.
Deleting a JTAPI Application Trigger
(Cisco Unified CallManager Only)

Use this procedure to delete a JTAPI application trigger. Deleting the trigger does not delete the application, although the application needs at least one trigger in order to be invoked by the system.

Required Data for This Procedure

The trigger number is required to delete a trigger.

SUMMARY STEPS

1. show ccn trigger
2. config t
3. no ccn trigger jtapi phonenumber number
4. exit
5. show ccn trigger
6. copy running-config startup-config

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 show ccn trigger</td>
<td>Displays the currently configured triggers. Look for the telephone number that you want to delete. Verify that this telephone number is associated with the correct application.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# show ccn trigger</td>
<td></td>
</tr>
<tr>
<td>Step 2 config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td>Step 3 no ccn trigger jtapi phonenumber number</td>
<td>Deletes the trigger number.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# no ccn trigger jtapi phonenumber 5000</td>
<td></td>
</tr>
<tr>
<td>Step 4 exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# exit</td>
<td></td>
</tr>
</tbody>
</table>
### Command or Action | Purpose
--- | ---
**Step 5** `show ccn trigger` | Displays the configured triggers.
**Example:**

```bash
se-10-0-0-0# show ccn trigger
```

**Step 6** `copy running-config startup-config` | Copies the configuration changes to the startup configuration.
**Example:**

```bash
se-10-0-0-0# copy running-config startup-config
```

### Examples

The output for `show ccn trigger` might look similar to the following:

```
se-10-0-0-0# show ccn trigger

Name:                         6500
Type: JTAPI
Application:                  voicemail
Locale:                       en_ENU
Idle Timeout:                 600
Enabled:                      yes
Maximum number of sessions:   4

Name:                         6700
Type: JTAPI
Application:                  autoattendant
Locale:                       en_ENU
Idle Timeout:                 600
Enabled:                      yes
Maximum number of sessions:   8
```

The following configuration removes a trigger from the voice-mail application:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no ccn trigger jtep phonenumber 6500
se-10-0-0-0(config)# exit
```

Now the output for `show ccn trigger` might look similar to the following:

```
se-10-0-0-0# show ccn trigger

Name:                         6700
Type: JTAPI
Application:                  autoattendant
Locale:                       en_ENU
Idle Timeout:                 600
Enabled:                      yes
Maximum number of sessions:   8
```

```
Deleting an Application

If you configure an application that you do not want to keep, use this procedure to delete the application and any triggers associated with that application. If you do not delete the triggers, the application will be invoked when one of the triggers is called.

After you delete the application and triggers, the script associated with the application remains installed on your server but is not used by Cisco Unity Express.

To make this application usable, reconfigure it.

The following default applications that shipped with Cisco Unity Express cannot be deleted:

- voicemail
- autoattendant
- ciscomwiapplication
- promptmgmt (the AvT application)
- msgnotification

Required Data for This Procedure

The following information is required to delete an application:

- Application name
- All trigger numbers associated with the application

SUMMARY STEPS

1. show ccn application
2. show ccn trigger
3. config t
4. no ccn trigger sip phonenumumber number
5. no ccn application name
6. exit
7. show ccn application
8. show ccn trigger
9. copy running-config startup-config
## Deleting an Application

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> show ccn application</td>
<td>Displays the currently configured applications. Look for the name of the application you want to delete.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn application</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> show ccn trigger</td>
<td>Displays the currently configured triggers. Look for the telephone numbers associated with the application you want to delete.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn trigger</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> no ccn trigger sip phonenum</td>
<td>Deletes a trigger associated with this application. Repeat this command for each trigger associated with the application.</td>
</tr>
<tr>
<td>number</td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# no ccn trigger sip phonenum 50170</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> no ccn application name</td>
<td>Deletes the application called name.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# no ccn application autoattendant</td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 7</strong> show ccn application</td>
<td>Displays the currently configured applications. Confirm that the deleted application is not displayed.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn application</td>
<td></td>
</tr>
<tr>
<td><strong>Step 8</strong> show ccn trigger</td>
<td>Displays the triggers for each configured application.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show ccn trigger</td>
<td></td>
</tr>
<tr>
<td><strong>Step 9</strong> copy running-config startup-config</td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# copy running-config startup-config</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following is sample output from the `show ccn application` and `show ccn trigger` commands:

```
se-10-0-0-0# show ccn application

Name: voicemail
Description: voicemail
Script: voicebrowser.aef
ID number: 1
Enabled: yes
Maximum number of sessions: 8
logoutUri: http://localhost/voicemail/vxmlscripts/mbxLogout.jsp
uri: http://localhost/voicemail/vxmlscripts/login.vxml

Name: autoattendant
Description: autoattendant
Script: aa.aef
ID number: 2
Enabled: yes
Maximum number of sessions: 8
MaxRetry: 3
operExtn: 0
welcomePrompt: AAWelcome.wav
se-10-0-0-0#

Name: myapplication
Description: My AA application
Script: myscript.aef
ID number: 3
Enabled: yes
Maximum number of sessions: 8
MaxRetry: 3
operExtn: 0
welcomePrompt: NewAAWelcome.wav

se-10-0-0-0#

se-10-0-0-0# show ccn trigger

Name: 6500
Type: SIP
Application: voicemail
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 3

Name: 6700
Type: SIP
Application: autoattendant
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 8

Name: 7200
Type: SIP
Application: myapplication
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 8

se-10-0-0-0#
```
The following configuration deletes the auto-attendant application and its trigger:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no ccn trigger sip phonenum 50170
se-10-0-0-0(config)# no ccn application myapplication
se-10-0-0-0(config)# exit
```

Now the output for the `show` commands looks similar to the following:

```
se-10-0-0-0# show ccn application

Name: voicemail
Description: voicemail
Script: voicebrowser.aef
ID number: 1
Enabled: yes
Maximum number of sessions: 8
logoutUri: http://localhost/voicemail/vxmlscripts/mbxLogout.jsp
uri: http://localhost/voicemail/vxmlscripts/login.vxml

Name: autoattendant
Description: autoattendant
Script: aa.aef
ID number: 2
Enabled: yes
Maximum number of sessions: 8
MaxRetry: 3
operExtn: 0
welcomePrompt: AAWelcome.wav

se-10-0-0-0#
```

```
se-10-0-0-0# show ccn trigger

Name: 6500
Type: SIP
Application: voicemail
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 3

Name: 6700
Type: SIP
Application: autoattendant
Locale: systemDefault
Idle Timeout: 5000
Enabled: yes
Maximum number of sessions: 8

se-10-0-0-0#
```
Configuring System-Wide Voice-Mail Parameters

The following system-wide parameters are configurable for all voice mailboxes.

- **Capacity**—Total amount of storage time in hours allowed for all mailboxes in the system. The factory default is the maximum allowed storage for your system.

- **Mandatory message expiry**—Enabling this feature forces all subscribers to delete voice-mail messages when the messages expire. Subscribers will not have the option to keep the messages. Mandatory message expiry is disabled by default.

  After mandatory message expiry is enabled on the system, the TUI does not allow expired messages to be saved or resaved.

  The message expiration is calculated using the message delivery time, not the last time the message was saved.

  Forwarding messages to oneself is not allowed.

  Use the `voicemail message mandatory-expiry` command or the **Defaults > Voice Mail** GUI option to enable mandatory message expiry.

- **Expiration time**—Number of days a message is kept in the mailbox. When the subscriber logs in to the voice mailbox, the subscriber hears a message listing all the expired messages. If the mandatory message expiry feature is disabled, the subscriber can save, skip, or delete each message. The factory default value is 30 days.

- **Language**—Language used for voice-mail prompts. See *Release Notes for Cisco Unity Express 2.3* for a list of the available languages. The default value is determined by the language package installed, and cannot be changed using the CLI commands.

- **Mailbox size**—Maximum number of seconds of storage for voice messages in a mailbox. The factory default value is determined by dividing the maximum storage capacity by the maximum number of mailboxes (personal plus general delivery).

- **Message length**—Maximum number of seconds for any one stored message in a mailbox. The factory default is 60 seconds.

- **Recording time**—Maximum amount of time for a subscriber’s recorded mailbox greeting. Valid values are 10 to 3600 seconds. The default is 900 seconds.

- **Operator extension**—Extension of the voice-mail operator.

⚠️ **Caution**

The voice-mail telephone number and the voice-mail operator’s telephone number must not be the same.

If they are, a subscriber who tries to call the operator while in the voice-mail system will be directed back to the voice-mail system. Also, an outside caller who presses the button for the operator will be connected to the voice-mail system.

- **Caller ID information**—Permits playing caller ID information for an incoming voice message. The default is not to play the information.

- **Broadcast expiration time**—Length of time in days that a broadcast message is stored on the system. See “Configuring Broadcast Messages” on page 146 for more information on configuring broadcast messages.

- **Broadcast message recording time**—Length is seconds of a broadcast message. Valid values are 10 to 3600 seconds. See “Configuring Broadcast Messages” on page 146 for more information on configuring broadcast messages.
• Broadcast message MWI status—Enables the MWI lights to turn on when an extension receives a broadcast message. The default is disabled. See “Examples” on page 241 for more information on broadcast message MWI status.

• Voicemail caller recording prompt—Enables playing of a prompt to a caller to record a message after the receiver’s greeting is played. The prompt message is “Record your message at the tone. When you are finished, hang up or press # for more options.” The default is to play the prompt.

• Mailbox selection—Mailbox in which an incoming voice message is stored. The options are original called number (OCN) or the last redirected number (LRD). LRD is the default option.

For example, suppose caller A calls subscriber B’s extension, which forwards the call to subscriber C, who does not answer the phone. The call goes to voice mail. Subscriber B’s extension is the OCN and subscriber C’s extension is the LRD. If the system is configured with the OCN option, the system stores the message in subscriber B’s mailbox. If the system is configured with the LRD option, the system stores the message in subscriber C’s mailbox.

Note

The mailbox selection option does not work if you select:
— The OCN option on a Cisco Unified CME system that networks two Cisco Unity Express modules.
— The OCN option on a Cisco Unified CallManager system that networks two Cisco Unity Express modules that do not have a configured voice-mail profile.
— The LRD option on a Cisco Unified CallManager system that networks two Cisco Unity Express modules.

The **Defaults > Voice Mail** GUI option also configures mailbox selection.

• Voice Mail Box Mask (Cisco Unified CallManager Only)

Cisco Unity Express 2.3 uses the voice mail box mask feature supported by Cisco Unified CallManager. Currently, only Cisco Unified CallManager 4.2 supports this feature.

No configuration is required on Cisco Unity Express to use this feature.

If the voice mail box mask is configured on the Cisco Unified CallManager, Cisco Unified CallManager applies the mask to the number before sending it to Cisco Unity Express. Cisco Unity Express uses this number to find the correct mailbox for the incoming redirected call.

For example, suppose a call comes in for the directory number 7510 and is redirected to Cisco Unity Express voice mail.

- If Cisco Unified CallManager does not have voice mail box mask configured, Cisco Unity Express tries to find a mailbox for 7510.
- If Cisco Unified CallManager has voice mail box mask configured, such as 222555XXXX, Cisco Unified CallManager sends the number 2225557510 to Cisco Unity Express, which tries to find a mailbox for 2225557510.

See “Configuring Mailboxes” on page 114 for the procedure to configure different values for mailbox size, message length, and expiration date for a specific mailbox.

**SUMMARY STEPS**

1. `config t`
2. `voicemail capacity time minutes`
3. `voicemail message mandatory-expiry`
4. voicemail default {roadcast expiration time days | expiration time days | language xx_YY | mailboxsize mailboxsize-seconds | messagesize messagesize-seconds}

5. voicemail operator telephone tel-number

6. voicemail recording time seconds

7. voicemail callerid

8. voicemail conversation caller recording-prompt

9. voicemail mailbox-selection {last-redirect | original-called}

10. exit

11. copy running-config startup-config

12. show voicemail limits

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong></td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0# config t
```

| **Step 2**        | `voicemail capacity time minutes` | Sets the `time` value as the system-wide maximum storage space in minutes allowed for all configured mailboxes. |

**Example:**
```
se-10-0-0-0(config)# voicemail capacity time 3000
```

| **Step 3**        | `voicemail message mandatory-expiry` | Enables mandatory message expiry. |

**Example:**
```
se-10-0-0-0# voicemail message mandatory-expiry
```
## Configuring System-Wide Voice-Mail Parameters

### Step 4

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>`voicemail default (broadcast expiration time days</td>
<td>expiration time days</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config)# voicemail default broadcast expiration time 15
se-10-0-0-0(config)# voicemail default expiration time 30
se-10-0-0-0(config)# voicemail default language en_ENU
se-10-0-0-0(config)# voicemail default mailboxsize 300
se-10-0-0-0(config)# voicemail default messagesize 120
```

- **broadcast expiration time days**—Sets the number of days for which a broadcast message can be saved on the system.
- **expiration days**—Sets the number of days for which a message can be stored in a mailbox before the voice-mail system deletes it.
- **language**—Specifies the default language used for voice-mail prompts on the local Cisco Unity Express system. Cisco Unity Express supports one language installed on the system at a time. The value for this command is determined by the installed language package and cannot be changed. See the *Release Notes for Cisco Unity Express 2.3* for a list of available languages.
- **mailboxsize mailboxsize-seconds**—Sets the maximum number of seconds for storing messages in a mailbox.
- **messagesize messagesize-seconds**—Sets the maximum number of seconds for a caller’s message stored in a mailbox.

### Step 5

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>voicemail operator telephone tel-number</code></td>
<td>Assigns the <code>tel_number</code> value as the voice-mail operator’s extension. A mailbox owner dials this extension while in the voice-mail system to reach the voice-mail operator. Do not assign this extension to a group. This extension need not be the same as the auto-attendant operator extension.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config)# voicemail operator telephone 9000
```

### Step 6

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>voicemail recording time seconds</code></td>
<td>Assigns the <code>time</code> value in seconds as the maximum recording time for any greeting or message in the voice-mail system. Valid values are 10 to 3600 seconds. The default value is 900 seconds.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config)# voicemail recording time 300
```

### Step 7

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>voicemail callerid</code></td>
<td>Enables playing caller ID information for incoming voice messages.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config)# voicemail callerid
```

### Step 8

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>voicemail conversation caller recording-prompt</code></td>
<td>Enables playing the prompt to a caller to record a message after the tone. Use the <code>no</code> form of the command to disable playing the prompt.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config)# voicemail conversation caller recording-prompt
```
### Example

The following example sets voicemail parameters.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# voicemail capacity time 3000
se-10-0-0-0(config)# voicemail message mandatory-expiry
se-10-0-0-0(config)# voicemail default broadcast message expiration time 10
se-10-0-0-0(config)# voicemail default expiration time 15
se-10-0-0-0(config)# voicemail default language en_ENU
se-10-0-0-0(config)# voicemail mailboxsize 360
se-10-0-0-0(config)# voicemail messagesize 120
se-10-0-0-0(config)# voicemail operator telephone 8000
se-10-0-0-0(config)# voicemail recording time 180
```

### Command or Action

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 9</strong> voicemail mailbox-selection (last-redirect</td>
<td>original-called)</td>
</tr>
</tbody>
</table>
| **Example:**
se-10-0-0-0(config)# voicemail mailbox-selection
last-redirect | |
| **Step 9** voicemail mailbox-selection | |
| **Example:**
se-10-0-0-0(config)# voicemail mailbox-selection
last-redirect | |
| **Step 10** exit | Exits configuration mode. |
| **Example:**
se-10-0-0-0(config)# exit | |
| **Step 11** copy running-config startup-config | Copies the configuration changes to the startup configuration. |
| **Example:**
se-10-0-0-0# copy running-config startup-config | |
| **Step 12** show voicemail limits | Displays system-wide voice-mail parameter values. |
| **Example:**
se-10-0-0-0# show voicemail limits | |
Configuring System Components

Configuring Password and PIN Parameters

Cisco Unity Express supports the configuration of the password and personal identification number (PIN) parameters described in the following sections:

- Configuring Password and PIN Length and Expiry Time, page 82
- Displaying Password and PIN System Settings, page 84

Configuring Password and PIN Length and Expiry Time

Cisco Unity Express supports configuring the following two attributes of password and PIN:

- Minimum password and PIN length

  To support enhanced security procedures, Cisco Unity Express has made the password and PIN length configurable. The administrator can configure the length to a value greater than or equal to 3 alphanumeric characters. This is a system-wide value, so that all subscribers must have passwords and PINs of at least that many characters. Use the GUI Defaults > User option or the procedure described below to configure this length.

  The password length does not have to equal the PIN length.

  The default length is 3 alphanumeric characters. The maximum password length is 32 alphanumeric characters. The maximum PIN length is 16 alphanumeric characters.

  To set the password or PIN length to the system default values, use the no or default form of the commands.
Note

If the minimum password or PIN length is increased, existing passwords and PINs that do not conform to the new limit will automatically expire. The subscriber must reset the password at the next log in to the GUI and must reset the PIN at the next log in to the TUI.

- **Password and PIN expiry time**

Cisco Unity Express permits the administrator to configure the password and PIN expiry time on a system-wide basis. The expiry time is the time, in days, for which the password and PIN are valid. When this time is reached, the subscriber must enter a new password or PIN.

If this option is not configured, passwords and PINs do not expire.

Use the GUI **Defaults > User** option or the procedure described below to configure this time.

The password expiry time does not have to equal the PIN expiry time.

The valid range is 3 to 365 days.

To set the password or PIN expiry time to the system default values, use the **no** or **default** form of the commands.

**SUMMARY STEPS**

- `config t`

- `security password length min password-length`

- `security pin length min pin-length`

- `security password expiry days password-days`

- `security pin expiry days pin-days`

- `exit`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><code>config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Specifies the length of all subscribers’ passwords. The default minimum value is 3; the maximum value is 32. To set the minimum password length to the system default, use the <strong>no</strong> or <strong>default</strong> form of this command.</td>
</tr>
<tr>
<td><code>security password length min password-length</code></td>
<td></td>
</tr>
</tbody>
</table>
| **Example:**
  - se-10-0-0-0(config)# security password length min 5 | |
| **Example:**
  - se-10-0-0-0(config)# security password length min 5 | |
Configuring Password and PIN Parameters

### Command or Action

<table>
<thead>
<tr>
<th>Step 3</th>
<th>security pin length min ( \text{pin-length} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0(config)# security pin length min 4</td>
</tr>
</tbody>
</table>

**Purpose:**
- Specifies the minimum length of all subscribers’ PINs. The default value is 3; the maximum value is 16.
- To set the minimum PIN length to the system default, use the `no` or `default` form of this command.

<table>
<thead>
<tr>
<th>Step 4</th>
<th>security password expiry days ( \text{password-days} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0(config)# security password expiry days 60</td>
</tr>
</tbody>
</table>

**Purpose:**
- Specifies the maximum number of days for which subscribers’ passwords are valid. Valid values range from 3 to 365.
- If this value is not configured, the passwords will not expire.
- To set the password expiry time to the system default, use the `no` or `default` form of this command.

<table>
<thead>
<tr>
<th>Step 5</th>
<th>security pin expiry days ( \text{pin-days} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0(config)# security pin expiry days 45</td>
</tr>
</tbody>
</table>

**Purpose:**
- Specifies the maximum number of days for which subscriber’s PINs are valid. Valid values range from 3 to 365.
- If this value is not configured, the PINs will not expire.
- To set the PIN expiry time to the system default, use the `no` or `default` form of this command.

<table>
<thead>
<tr>
<th>Step 6</th>
<th>exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0(config)# exit se-10-0-0-0#</td>
</tr>
</tbody>
</table>

**Purpose:**
- Exits configuration mode.

### Examples

The following example sets the password length to 6 characters, the PIN length to 5 characters, the password expiry time to 60 days, and the PIN expiry time to 45 days.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# security password length min 6
se-10-0-0-0(config)# security pin length min 5
se-10-0-0-0(config)# security password expiry days 60
se-10-0-0-0(config)# security pin expiry days 45
se-10-0-0-0(config)# exit
```

### Displaying Password and PIN System Settings

Use the following Cisco Unity Express EXEC mode command to display the password and PIN settings:

```
show security detail
```

The command output may look similar to the following:

```
se-10-0-0-0# show security detail
```
Configuring System Components

Configuring a Holiday List

Cisco Unity Express permits configuration of a holiday list that causes the auto attendant (AA) to play a customizable greeting to callers when the company is closed for a holiday. The following sections describe the configuration process:

- Overview of Holiday Lists, page 85
- Using the Holiday Lists, page 86
- Configuring a Holiday List, page 86
- Displaying the Holiday List, page 86
- Deleting Holidays from the List, page 88

Overview of Holiday Lists

- Cisco Unity Express supports up to three holiday lists: the previous year, the current year, and the next year. If a year has no configured entries, the system treats that year as having no holidays.
  
  For example, if the current year is 2005 and you have not configured entries for 2004 (the previous year), the system treats 2004 as having zero (0) holidays. You may configure holidays for 2005 and 2006 (the next year) but not for 2007.

- The list can contain a maximum of 26 holidays per year.

- No default holiday list is available in the system.

- The administrator can delete entries from a previous year list but cannot add or modify that list in any other way.

- The system automatically deletes the previous year list at the beginning of the new calendar year. For example, the system will delete the 2004 holiday list on January 1, 2006.

- To configure the holiday list for the current year and next year, use the graphical user interface (GUI) Voice Mail > Holiday Settings option or the command-line interface (CLI) commands described in this section.

Password Expires: true
Password Age: 60 days
Password Length (min): 5
Password Length (max): 32
PIN Expires: true
PIN Age: 45 days
PIN Length (min): 4
PIN Length (max): 16

The following example shows the values when password expiration and the PIN length are reset to the system default values:

se-10-0-0-0# show security detail

Password Expires: false
Password Length (min): 3
Password Length (max): 32
PIN Expires: false
PIN Length (min): 3
PIN Length (max): 16
To copy holidays from one year to the next, use the GUI option **Copy all to next year** under Voice Mail > Holiday Settings.

### Using the Holiday Lists

The Cisco Unity Express Editor provides a step “Is Holiday” that checks the holidays configured on the system to determine whether the specified day is a holiday or not. The step takes as input the day to check against the holiday list. See the *Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts* for more information on steps.

The default auto-attendant script uses this step to check the holiday lists. When a caller reaches the AA, the AA plays the welcome prompt and checks if the current day is a holiday. If it is a holiday, the AA plays the holiday prompt to the caller. This prompt (AAHolidayPrompt.wav) is “We are closed today. Please call back later.”

You can customize this prompt by recording a more meaningful message, such as “We are closed today for a holiday. If this is an emergency, please call 1-222-555-0150 for assistance. Otherwise, please call back later.”

After a new prompt is uploaded to Cisco Unity Express, use the GUI options or CLI commands to configure AA to use the new prompt. See “Configuring Auto-Attendant Scripts” on page 63 for details on how to set AA script parameters.

Custom AA scripts can use this step in a similar manner.

### Configuring a Holiday List

Use the following command in Cisco Unity Express configuration mode to configure a holiday list:

```
calendar holiday date yyyy mm dd [description holiday-description]
```

where `yyyy` is the 4-digit year, `mm` is the 2-digit month, `dd` is the 2-digit day, and `holiday-description` is an optional description of the holiday. If the description is more than one word, enclose the text in double quotes (“ ”).

The valid values for `yyyy` are the current year or the next year. An error message appears if the year or date is out of range.

**Example:**

```
se-10-0-0-0# config t
se-10-0-0-0(config)# calendar holiday date 2005 05 30 description “Memorial Day”
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

### Displaying the Holiday List

Several CLI commands are available in the Cisco Unity Express EXEC mode for displaying the holiday list.

### Displaying All Holiday Lists

The following command displays all the holiday lists configured on the system:

```
```
show calendar holiday [all]

This command displays the date and description for all holidays for all years. The output for this command may appear similar to the following:

```
se-10-0-0-0-0# show calendar holiday

*******************************
Year: 2004
*******************************
September 04    Labor Day
November  25    Thanksgiving

*******************************
Year: 2005
*******************************
July      04    July 4th
September 05    Labor Day
November  24    Thanksgiving
December  25    Christmas
```

Displaying Holiday Lists for a Specific Year

The following command displays the holidays configured for a specific year:

```
show calendar holiday year yyyy
```

where yyyy is the 4-digit year. This command displays the date and description for all holidays configured for the specified year. If no holidays are configured for that year, the message “No holidays found for the specified year” appears. The output for this command may appear similar to the following:

```
se-10-0-0-0-0# show calendar holiday year 2005

*******************************
Year: 2005
*******************************
July      04    July 4th
September 05    Labor Day
November  24    Thanksgiving
December  25    Christmas
```

Displaying Holiday Lists for a Specific Month

The following command displays the holidays configured for a specific month in a specified year:

```
show calendar holiday year yyyy month mm
```

where yyyy is the 4-digit year and mm is the 2-digit month. This command displays the date and description for all holidays configured for the specified month in the specified year. If no holidays are configured for that month, the message “No holidays found for the specified month” appears. The output for this command may appear similar to the following:

```
se-10-0-0-0-0# show calendar holiday year 2005 month 12

*******************************
Year: 2005
*******************************
December  25    Christmas
```
Deleting Holidays from the List

Several CLI commands are available in the Cisco Unity Express configuration mode for deleting holidays from the list.

Deleting a Specific Holiday from the Holiday List

The following command deletes a specific holiday:

Caution
Use this command with caution because this operation is irreversible. Do not press the “Enter” key after the year; doing so deletes the holiday list for the entire year.

\[
\text{no calendar holiday date } \text{yyyy mm dd}
\]

where yyyy is the 4-digit year, mm is the 2-digit month, and dd is the 2-digit day.

Example:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no calendar holiday date 2004 11 25
se-10-0-0-0(config)# end
```

Deleting Holidays from a Specific Month

Caution
Use this command with caution because this operation is irreversible and may cause loss of holiday configuration for the entire month.

The following command deletes the holidays configured for a specific month in a specified year:

\[
\text{no calendar holiday year } \text{yyyy month mm}
\]

where yyyy is the 4-digit year and mm is the 2-digit month.

Example:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no calendar holiday year 2004 month 09
se-10-0-0-0(config)# end
```

Deleting Holidays for a Specific Year

Caution
Use this command with caution because this operation is irreversible and may cause loss of holiday configuration for the entire year.

The following command deletes all the holidays configured for a specific year:

\[
\text{no calendar holiday year } \text{yyyy}
\]

where yyyy is the 4-digit year.
Configuring Business Hours

Cisco Unity Express provides support for business hour schedules that specify the hours when the business is open or closed during the week.

The following sections describe this feature, its configuration, and how to use this feature in the auto-attendant application:

- Overview of Business-Hours Schedules, page 89
- Using the Business-Hours Schedule, page 89
- Creating a Business-Hours Schedule, page 90
- Modifying Business Schedules, page 92
- Displaying Business-Hours Schedules, page 94
- Deleting a Business Schedule, page 95

Overview of Business-Hours Schedules

You can configure up to 4 weekly business-hours schedules. Each day is divided into 48 half-hour time slots. Each of these time slots can be configured to specify whether the company is open or closed during that time. Use the graphical user interface (GUI) Voice Mail > Business Hours Settings option or the command-line interface (CLI) commands described in this section to configure these slots.

The Cisco Unity Express system ships with one default schedule called “systemschedule.” This schedule treats the business as open 24 hours per day, 7 days per week. Use the GUI Voice Mail > Business Hours Settings option or CLI commands to modify or delete this default schedule. This schedule counts towards the maximum limit of 4.

Using the Business-Hours Schedule

The Cisco Unity Express Editor provides a step “Business Hours” that checks whether the business is open or closed during a specified time slot. The step requires a time slot to check and any business-hours schedule configured on the system. See the Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts for more information about steps.

The default AA uses this step to access the business-hours schedule. When a caller reaches the AA, the AA plays the welcome prompt and checks if the current day is a holiday. If it is a holiday, the AA plays the holiday greeting to the caller and does not check the business-hours schedule.

If the current day is not a holiday, the system checks if the business is open at the time the call is received. If so, the business open prompt (AABusinessOpen.wav) plays. If the business is closed, the system plays the business closed prompt (AABusinessClosed.wav).
You can customize these two prompts by recording more meaningful messages. Use the GUI Voice Mail > Prompts option or the CLI commands to upload the customer prompts. Alternatively, you can record these prompts using the Administration Via Telephone (AvT) system. See “Configuring Auto-Attendant Scripts” on page 63 for details on setting up AA script parameters.

After uploading or recording these custom prompts, use the GUI Voice Mail > Auto Attendants option or the CLI commands to associate the new prompts with the AA. See “Configuring Auto-Attendant Scripts” on page 63 for details on setting up AA script parameters.

Creating a Business-Hours Schedule

Follow this procedure to create a business-hours schedule.

Data Required for This Procedure

The following information is required to configure a business-hours schedule:

- Schedule name

  The maximum length of the name is 31 alphanumeric characters, including uppercase letters A through Z, lowercase letters a through z, digits 0 through 9, underscore (_), and dash (-). The first character of the name must be a letter.

  If a schedule with this name does not exist, the system will create it. The default schedule is open, 24 hours per day, 7 days per week.

  If the schedule already exists, any changes will modify the schedule. If the maximum number of schedules exists and you request another one, the system displays an error message.

- Day of the week

- Starting and ending clock times when the business is open and when the business is closed

SUMMARY STEPS

1. config t
2. calendar biz-schedule schedule-name
3. closed day day-of-week from hh:mm to hh:mm
4. open day day-of-week from hh:mm to hh:mm
5. end
6. exit
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong>&lt;br&gt;Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# config t&lt;br&gt;se-10-0-0-0(config)#</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td><strong>calendar biz-schedule schedule-name</strong>&lt;br&gt;Specifies the name for the business-hours schedule and enters business configuration mode. The name must be one word.&lt;br&gt;<strong>Example:</strong> se-10-0-0-0(config)# calendar biz-schedule normal_hours&lt;br&gt;If a schedule with this name does not exist, the system creates it. If the schedule already exists, any changes modify the schedule. If the maximum number of schedules exists, the system displays an error message.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td><strong>closed day day-of-week from hh:mm to hh:mm</strong>&lt;br&gt;Enter the day of the week and the times when the business is closed for that day. Valid values for <em>day-of-week</em> are 1 to 7, where 1 represents Sunday, 2 is Monday, 3 is Tuesday, 4 is Wednesday, 5 is Thursday, 6 is Friday, and 7 is Saturday. Use the 24-hour clock format for <em>hh</em>. Valid <em>mm</em> values are 00 and 30 only.&lt;br&gt;<strong>Example:</strong> se-10-0-0-0(config-business)# closed day 2 from 00:00 to 08:30&lt;br&gt;se-10-0-0-0(config-business)# closed day 2 from 17:30 to 24:00</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td><strong>open day day-of-week from hh:mm to hh:mm</strong>&lt;br&gt;Enter the day of the week and the times when the business is open for that day. Valid values for <em>day-of-week</em> are 1 to 7, where 1 represents Sunday. Use the 24-hour clock format for <em>hh</em>. Valid <em>mm</em> values are 00 and 30 only.&lt;br&gt;<strong>Example:</strong> se-10-0-0-0(config-business)# open day 2 from 08:30 to 17:30</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>Repeat Steps 3 and 4 for each day of the week that needs business hours scheduled.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td><strong>end</strong>&lt;br&gt;Exits business configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-business)# end&lt;br&gt;se-10-0-0-0(config)#</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td><strong>exit</strong>&lt;br&gt;Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# exit&lt;br&gt;se-10-0-0-0#</td>
</tr>
</tbody>
</table>
Examples

The following example configures a new business schedule:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# calendar biz-schedule normal
Adding new schedule
se-10-0-0-0(config-business)# closed day 1 from 00:00 to 24:00
se-10-0-0-0(config-business)# closed day 2 from 00:00 to 08:30
se-10-0-0-0(config-business)# closed day 2 from 17:30 to 24:00
se-10-0-0-0(config-business)# closed day 3 from 00:00 to 08:30
se-10-0-0-0(config-business)# closed day 3 from 17:30 to 24:00
se-10-0-0-0(config-business)# closed day 4 from 00:00 to 08:30
se-10-0-0-0(config-business)# closed day 4 from 17:30 to 24:00
se-10-0-0-0(config-business)# closed day 5 from 00:00 to 08:30
se-10-0-0-0(config-business)# closed day 5 from 20:00 to 24:00
se-10-0-0-0(config-business)# closed day 6 from 00:00 to 08:30
se-10-0-0-0(config-business)# closed day 6 from 18:00 to 24:00
se-10-0-0-0(config-business)# closed day 7 from 00:00 to 09:00
se-10-0-0-0(config-business)# closed day 7 from 13:00 to 24:00
se-10-0-0-0(config-business)# end
se-10-0-0-0(config)# exit
```

Modifying Business Schedules

Starting from Cisco Unity Express configuration mode, use the following command to access a business-hours schedule for modification:

```
calendar biz-schedule schedule-name
```

where `schedule-name` is the name of the business schedule to modify. If a schedule with the specified business name does not exist, the system creates it.

The following example accesses the existing “normal” business schedule:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# calendar biz-schedule normal
Modifying existing schedule
se-10-0-0-0(config-business)# open day 1 from 09:00 to 12:00
se-10-0-0-0(config-business)# end
se-10-0-0-0(config)# exit
```

Only the hours specified using these commands are affected. The other time slots in the business-hours schedule are not modified.

Changing the Status of Open or Closed Hours

To modify an existing schedule, specify the open and closed hours for each day as needed.

Changing an Open Slot to a Closed Slot

Use either of the following configuration mode commands to change an open slot to a closed slot:

```
no open day day-of-week from hh:mm to hh:mm
closed day day-of-week from hh:mm to hh:mm
```
where \textit{day-of-week} is the numeric day of the week (1 equals Sunday), \textit{hh} are hours in the 24-hour clock format, and \textit{mm} are minutes, either 00 or 30.

For example, if Monday is open from 09:00 to 17:00, then \texttt{no open day 2 from 09:00 to 10:00} or \texttt{closed day 2 from 09:00 to 10:00} closes Monday 9:00 a.m. to 10:00 a.m.

**Changing a Closed Slot to an Open Slot**

Use either of the following commands to change a closed slot to an open slot:

\begin{verbatim}
no closed day \textit{day-of-week} \textit{from hh:mm to hh:mm}
open day \textit{day-of-week} \textit{from hh:mm to hh:mm}
\end{verbatim}

where \textit{day-of-week} is the numeric day of the week (1 equals Sunday), \textit{hh} are hours in the 24-hour clock format, and \textit{mm} are minutes, either 00 or 30.

For example, if Monday is closed from 00:00 to 10:00, then \texttt{no closed day 2 from 09:00 to 10:00} or \texttt{open day 2 from 09:00 to 10:00} opens the Monday time slot 9:00 a.m. to 10:00 a.m.

**Examples**

The following output shows the “normal” business schedule:

\begin{verbatim}
se-10-0-0-0# show calendar biz-schedule normal

**************************
Schedule: normal
Day               Open Hours
------------------
Sunday             None
Monday             08:30 to 17:30
Tuesday            08:30 to 17:30
Wednesday          08:30 to 17:30
Thursday           08:30 to 20:00
Friday             08:30 to 18:00
Saturday           09:00 to 13:00

se-10-0-0-0# config t
se-10-0-0-0(config)# calendar biz-schedule normal
se-10-0-0-0(config-business)# no open day 2 from 08:30 to 09:30
se-10-0-0-0(config-business)# no closed day 7 from 13:00 to 14:00
se-10-0-0-0(config-business)# end
se-10-0-0-0(config)# exit

se-10-0-0-0# show calendar biz-schedule normal

**************************
Schedule: normal
Day               Open Hours
------------------
Sunday             None
Monday             09:30 to 17:30
Tuesday            08:30 to 17:30
Wednesday          08:30 to 17:30
Thursday           08:30 to 20:00
Friday             08:30 to 18:00

The following commands modify the “normal” business hours by closing Monday hours from 8:30 to 9:30 and opening Saturday hours from 1:00 p.m. to 2:00 p.m.:

\end{verbatim}

The following output shows the changed schedule:

\begin{verbatim}
se-10-0-0-0# show calendar biz-schedule normal

**************************
Schedule: normal
Day               Open Hours
------------------
Sunday             None
Monday             09:30 to 17:30
Tuesday            08:30 to 17:30
Wednesday          08:30 to 17:30
Thursday           08:30 to 20:00
Friday             08:30 to 18:00
\end{verbatim}
Displaying Business-Hours Schedules

Several CLI commands are available in the Cisco Unity Express EXEC mode for displaying the business-hours schedules.

Displaying a Specific Schedule

The following command displays a specific business schedule:

```
show calendar biz-schedule schedule-name
```

where `schedule-name` is the name of the schedule. This command displays each day of the week and the open hours. The output for this command may appear similar to the following.

```
se-10-0-0-0# show calendar biz-schedule normal

******************************
Schedule: normal
Day                  Open Hours
-------------------------------
Sunday              None
Monday              08:30 to 17:30
Tuesday             08:30 to 17:30
Wednesday           08:30 to 17:30
Thursday            08:30 to 20:00
Friday              08:30 to 18:00
Saturday            09:00 to 13:00

```

Displaying All Businesses Schedules

The following command displays all the configured business schedules in the system:

```
show calendar biz-schedule [all]
```

This command displays the open hours for each day of the week for each schedule. The output for this command may appear similar to the following:

```
sse-10-0-0-0# show calendar biz-schedule

******************************
Schedule: systemschedule
Day                  Open Hours
-------------------------------
Sunday              Open all day
Monday              Open all day
Tuesday             Open all day
Wednesday           Open all day
Thursday            Open all day
Friday              Open all day
Saturday            Open all day

******************************
Schedule: normal
Day                  Open Hours
-------------------------------
Sunday              None
```
Configuring Business Hours

Monday 08:30 to 17:30
Tuesday 08:30 to 17:30
Wednesday 08:30 to 17:30
Thursday 08:30 to 20:00
Friday 08:30 to 18:00
Saturday 09:00 to 13:00

***************************************************************************
Schedule: holiday-season
Day Open Hours
-------------------------------
Sunday 09:00 to 15:00
Monday 08:30 to 17:30
Tuesday 08:30 to 17:30
Wednesday 08:30 to 17:30
Thursday 08:00 to 21:00
Friday 08:00 to 21:00
Saturday 08:00 to 21:30

Deleting a Business Schedule

The following configuration mode command deletes a specified business schedule:

```
no calendar biz-schedule schedule-name
```

where `schedule-name` is the name of the business schedule to delete.

If you delete the business schedule associated with the auto attendant application, the system assumes your business is open 24 hours a day, 7 days a week.

The following example deletes the “normal” business schedule:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no calendar biz-schedule normal
se-10-0-0-0(config)# exit
se-10-0-0-0#
```
Configuring Users and Groups

Last Updated: July 25, 2006

All configuration and administration functions for Cisco Unity Express are available through the graphical user interface (GUI). However, you may find using the command-line interface (CLI) is more efficient than using the GUI. For example, you may want to create a script to configure a large number of subscribers for a specific system. In this case, the CLI may be more useful.

This chapter describes the commands that would do the following tasks and contains the following sections:

- Prerequisites, page 97
- Adding and Modifying a User, page 98
- Adding and Modifying a Group, page 104
- Configuring Privileges, page 108
- Sending Future Messages, page 109

Prerequisites

Verify that the telephones and extensions connected to the Cisco Unified CME router or Cisco Unified CallManager server are configured. If you have not completed the configuration, see your Cisco Unified CallManager administrator guide or Cisco Unified CME administrator guide for the procedures. For Cisco Unified CME systems, you can use the Cisco Unity Express GUI for these procedures.
Adding and Modifying a User

Users, or subscribers, configured in Cisco Unified CME or Cisco Unified CallManager may be imported to the Cisco Unity Express database.

- Cisco Unity Express does not automatically synchronize its database with the Cisco Unified CallManager database. If a subscriber defined in Cisco Unity Express must be in the Cisco Unified CallManager database, go back to Cisco Unified CallManager later and define the subscriber there.

- To synchronize the Cisco Unity Express and Cisco Unified CME databases, use the Cisco Unity Express GUI option **Administration > Synchronize Information**.

The procedure described in this section allows you to create a new user in the system. Use the same commands to modify an existing user's properties.

Cisco Unity Express supports twice as many users as mailboxes. Some subscribers, such as system administrators, may not be assigned a voice mailbox. The maximum number of users is determined by the license of the module. See “Software Licenses and Factory-Set Limits” on page 9 for the maximum number of users permitted for your module.

### Required Data for This Procedure

The following information is required for adding or modifying a user:

- **Username**—The user ID. The username must be at least 3 and no more than 32 characters in length. Cisco Unity Express allows only letters, numbers, underscore (_), dot (_), and dash (-) in user IDs. User IDs must start with a letter. Do not use spaces in the username.

- **(Optional) Full name**—First and last name of the subscriber. Enter this name in quotation marks (“ ”).

- **(Optional) Group**—Name of an existing group in which this subscriber is a member.

- **(Optional) Password**—Password for logging into the Cisco Unity Express GUI. The password must be at least 3 and no more than 32 characters in length. Spaces are not allowed.

- **(Optional) PIN**—Personal identification number for logging into the TUI. The PIN must be at least 3 and no more than 16 digits in length.

### SUMMARY STEPS

**EXEC mode:**

1. `username userid [create | delete | fullname [first “first-name” | last “last-name” | display “full-name”] | group group-name | language “language” | password “password” | pin number]`

2. `show users`
   or
   `show user detail username userid`

3. `copy running-config startup-config`

**Configuration mode:**

1. `config t`

2. `username userid [create | phonenumber phone-number | phonenumberE164 full-number]`
3. exit
4. show users
   or
   show user detail username userid
5. copy running-config startup-config
DETAILED STEPS

EXEC Mode:

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>username userid</td>
<td>create</td>
</tr>
</tbody>
</table>

Example:

se-10-0-0-0# username user1 create
se-10-0-0-0# username user2 fullname display "User 2"
se-10-0-0-0# username user2 group sales
se-10-0-0-0# username user2 password "green"
se-10-0-0-0# username user2 pin 4444
se-10-0-0-0# username user2 delete

Creates the subscriber with the specified user ID. The optional parameters configure more information for the subscriber:

- **userid**—User ID of the subscriber. The user ID must be at least 2 and no more than 31 characters in length. Cisco Unity Express allows only letters, numbers, underscore (_), dot (.), and dash (-) in user IDs. Do not use spaces in the username. User IDs must start with a letter.
- **create**—Creates the subscriber with no other information.
- **delete**—Deletes an existing subscriber.
- **fullname**—Specifies a full name for this subscriber. This full name appears on telephone displays.
- **group**—Associates this subscriber with an existing group.
- **language**—Cisco Unity Express supports one language installed on the system at a time. The value for this command is determined by the installed language package and cannot be changed.
- **password**—Specifies a password for this subscriber. The password value must be entered within quotation marks (" "). Spaces are not allowed. Acceptable password characters are lowercase letters a to z, uppercase letters A to Z, digits 0 to 9, and the following symbols: \._@#$%^*()~<>!
- **pin**—Specifies a personal identification number (PIN) for this subscriber. The subscriber enters this number from the telephone when accessing the voice-mail system. The PIN may contain a maximum number of 16 digits. The asterisk (*) and pound sign (#) may not be used.
### Configuring Users and Groups

#### Adding and Modifying a User

1. **Step 2**
   - `show users`
   - or
   - `show user detail username userid`

   **Example:**
   ```bash
   se-10-0-0-0# show user detail username user2
   Full Name:          User 2
   First Name:         
   Last Name:          user2
   Nickname:           user2
   Phone:              
   Phone(E.164):      
   Language:           en_ENU
   se-10-0-0-0#
   ```

2. **Step 3**
   - `copy running-config startup-config`

   **Example:**
   ```bash
   se-10-0-0-0# copy running-config startup-config
   ```

### Examples

The following output illustrates the `show users` and `show user detail username` commands:

```bash
se-10-0-0-0# show users
user1
user2

se-10-0-0-0# show user detail username user2
Full Name:          User 2
First Name:         
Last Name:          user2
Nickname:           user2
Phone:              
Phone(E.164):      
Language:           en_ENU
se-10-0-0-0#
```
## Configuration Mode:

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1**
| \*config t\* | Enters configuration mode. |
| **Example:**
se-10-0-0-0# config t | |

| **Step 2**
| username userid [create | phonenumber phone-number | phonenumberE164 full-number] | Creates the subscriber with the specified user ID. The optional parameters configure more information for the subscriber: |
| **Example:**
se-10-0-0-0(config)# username user3 create 50180  
se-10-0-0-0(config)# username user3 phonenumber 13335550180 | |
| **userid**—User ID of the subscriber. The user ID must be at least 2 and no more than 31 characters in length. Cisco Unity Express allows only letters, numbers, underscore (_), dot (.), and dash (-) in user IDs. Do not use spaces in the username. User IDs must start with a letter. |
| **create**—Creates the subscriber with no other information. |
| **phonenumber**—Specifies a number or extension for this subscriber. No spaces or dashes are allowed. |
| **phonenumberE164**—Specifies a telephone number with area code for this subscriber. No spaces or dashes are allowed. |

| **Step 3**
| \*exit\* | Exits configuration mode. |
| **Example:**
se-10-0-0-0(config)# exit | |

| **Step 4**
| show users \or \show user detail username userid\* | Displays a list of user IDs for all subscribers configured on the system. \or Displays the detailed information configured for the specified subscriber. |
| **Example:**
se-10-0-0-0# show user detail username user2 | |

| **Step 5**
| copy running-config startup-config | Copies the configuration changes to the startup configuration. |
| **Example:**
se-10-0-0-0# copy running-config startup-config | |
Examples

The following example illustrates configuring a subscriber and the output from the `show` commands:

```
se-10-0-0-0(config)# username user3 create
se-10-0-0-0(config)# username user3 phonenum 50180
se-10-0-0-0(config)# exit
se-10-0-0-0# show users
user1
user2
user3
se-10-0-0-0# show user detail username user3
Full Name: User 3
First Name: 
Last Name: user3
Nickname: user3
Phone: 50180
Phone(E.164): 
Language: en_ENU
```
Adding and Modifying a Group

A group is a collection of subscribers, usually with a common function or purpose, such as sales, main office, customer service, or technicians. A group has the following characteristics:

- Members of the group can be individual subscribers or other groups.
- The group is assigned an extension.
- The group may have a mailbox assigned to it.
- A group may have zero or more subscribers as owners. An owner of a group can add and delete members. Additionally, an owner can add and delete other owners to the group.
- Members may belong to more than one group.
- Members can be added to the group using the configuration mode `groupname` command or using the EXEC mode `username` command. See “Adding and Modifying a User” on page 98 for details about the `username` command.

Note: Subscribers must exist before being added to a group. See “Adding and Modifying a User” on page 98 to configure the subscriber’s detailed information.

- Only members have access to the messages in a group’s voice mailbox. The owner is not considered a member of the group. If the owner needs to access the group’s mailbox, add the owner as a member of the group. (The owner’s name appears twice in the group, once as a member and once as the owner.)
- A group may be assigned a privilege level. The privilege level permits the members of the group to access all or a restricted set of administrative functions. Use the `show privileges` command to display the privilege levels installed on your system. Use the `show groups privileges` command to display the privileges assigned to each group. See “Configuring Privileges” on page 108 for more information about privilege levels.

See “Software Licenses and Factory-Set Limits” on page 9 for the maximum number of groups, owners, and members permitted on your system.

The following procedure allows you to create a new group in the system.

Required Data for This Procedure

The following information is required to define a group:

- EXEC mode:
  - Name of group
  - (Optional) Description of group
  - (Optional) Full name of group

- Configuration mode:
  - Name of group
  - (Optional) One or more existing user or group IDs to be added as members
  - (Optional) One or more existing user IDs to be added as owners
  - (Optional) Extension or telephone number of the group
- (Optional) Full E.164 telephone number of the group
- (Optional) Privilege level for the group

**SUMMARY STEPS**

**EXEC Mode:**

1. `groupname userid [create | delete | description "description" | fullname "full-name"]`
2. `show groups`
   or
   `show group detail groupname groupid`
3. `copy running-config startup-config`

**Configuration Mode:**

1. `config t`
2. `groupname groupid [member username | owner ownername | phonenumber phone-number | phonenumberE164 full-number | privilege privilege-id]`
3. `exit`
4. `show groups`
   or
   `show group detail groupname groupid`
5. `copy running-config startup-config`

**DETAILED STEPS**

**EXEC Mode:**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1** `groupname groupid [create | delete | description "description" | fullname "full-name"]` | Creates the group with the `groupid` value. The optional parameters configure more information for the group:  
  • `create`—Creates the group with no other information.  
  • `delete`—Deletes an existing group.  
  • `description`—Specifies a description of the group.  
  • `fullname`—Specifies a long name for the group. |

**Example:**

```
se-10-0-0-0# groupname sales fullname "Sales Department"
se-10-0-0-0# groupname sales description "Retail Sales Department"
se-10-0-0-0# groupname sales delete
```
Configuring Users and Groups

Adding and Modifying a Group

Examples

The following example creates a group and displays the output of the `show` commands:

```plaintext
se-10-0-0-0# groupname sales fullname "Sales Department"
se-10-0-0-0# groupname sales description "CA office"

se-10-0-0-0# show groups
Administrators
sales

se-10-0-0-0# show group detail groupname sales
Full Name:          Sales Department
Description:        CA office
Phone:
Phone(E.164):      en_ENU
Language:           en_ENU
Owners:
Members:
```

Command or Action | Purpose
--- | ---
**Step 2**
`show groups` | Displays a list of group IDs for all configured groups. This command does not display the details for the groups.

or

`show group detail groupname groupid` | Displays the detailed configuration information for the group groupid value.

**Example:**

se-10-0-0-0# show group detail groupname sales

**Step 3**
`copy running-config startup-config` | Copies the configuration changes to the startup configuration.

**Example:**

se-10-0-0-0# copy running-config startup-config
## Configuration Mode:

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>config t</td>
<td>Enters configuration mode.</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0# config t
```

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupname groupid [member username</td>
<td>owner ownername</td>
<td>phonenumber phone-number</td>
</tr>
</tbody>
</table>

- **member**—Associates an existing subscriber as a member of this group. Repeat this command to assign multiple subscribers to the group.
- **owner**—Specifies the owner of the group. The owner is not considered a member. If the owner is to have access to the group’s voice mailbox, also assign the owner as a member.
- **phonenumber**— Associates a number or extension with this group. No spaces or dashes are allowed.
- **phonenumberE164**—Associates a telephone number and area code with this group. No spaces or dashes are allowed.
- **privilege**—Specifies the privilege level for the group. Members assigned to this group have the designated privilege rights.

**Example:**
```
se-10-0-0-0(config)# groupname sales member user1
se-10-0-0-0(config)# groupname sales owner user2
se-10-0-0-0(config)# groupname sales phonenumber 50163
se-10-0-0-0(config)# groupname sales phonenumberE164 14445550163
se-10-0-0-0(config)# groupname sales privilege ManagePrompts
```

<table>
<thead>
<tr>
<th>Step 3</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>exit</td>
<td>Exits configuration mode.</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0(config)# exit
```

<table>
<thead>
<tr>
<th>Step 4</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>show groups</td>
<td>Displays a list of group IDs for all configured groups. This command does not display the details for the groups.</td>
<td></td>
</tr>
</tbody>
</table>

or

```
show group detail groupname groupid
```

**Example:**
```
se-10-0-0-0# show group detail groupname sales
```

<table>
<thead>
<tr>
<th>Step 5</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>copy running-config startup-config</td>
<td>Copies the configuration changes to the startup configuration.</td>
<td></td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0# copy running-config startup-config
```
Examples

The following example adds an owner and two members to the group sales and assigns sales a phone number:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# groupname sales member user1
se-10-0-0-0(config)# groupname sales member user2
se-10-0-0-0(config)# groupname sales owner user1
se-10-0-0-0(config)# groupname sales phonenumber 50163
se-10-0-0-0(config)# groupname sales phonenumberE164 12225550163
se-10-0-0-0(config)# groupname sales privilege ManagePrompts
se-10-0-0-0(config)# exit
```

```
se-10-0-0-0(#) show groups
Administrators
sales

se-10-0-0-0(#) show group detail groupname sales
Full Name:          Sales Department
Description:        CA office
Phone:              50163
Phone(E.164):       12225550163
Language:           en_ENU
Owners:             user1
Members:            user1 user2
se-10-0-0-0(#)
```

Configuring Privileges

The Cisco Unity Express software recognizes several privileges for subscribers:

- **Superuser**—The superuser privilege permits subscribers to log in to the Cisco Unity Express GUI as an administrator. Additionally, it permits subscribers to record spoken names for remote subscribers and locations through the Administration via Telephone (AvT).
- **ManagePrompts**—The prompt management subscriber has access to the AvT but not to any other administrative functions.
- **broadcast**—The broadcast privilege permits the subscriber to send broadcast messages across the network.
- **local-broadcast**—The local-broadcast privilege permits subscribers to send broadcast messages only to subscribers on the local network.
- **ManagePublicList**—The ManagePublicList privilege permits the subscriber to create and modify public distribution lists.
- **ViewPrivateList**—The ViewPrivateList privilege allows the subscriber to view another subscriber’s private distribution lists. The subscriber can not modify or delete the private lists.
- **vm-imap**—The vm-imap privilege gives subscribers access to the IMAP feature.

These privilege levels are assigned to a group, and any member of the group is granted the privilege rights. The software initialization process created an Administrator group from the imported subscribers designated as administrators. Other groups can be created with these privileges. Assign subscribers to an existing group using the CLI commands or the GUI option **Configure > Users**.

To display a list of privileges, use the `show privileges` command in Cisco Unity Express EXEC mode.

To configure a group with a privilege level, see “Adding and Modifying a Group” on page 104.
Cisco Unity Express subscribers may create and schedule voice-mail messages for future delivery to one or more subscribers on the local system or on configured remote network locations.

You are not required to configure this feature for subscribers.

Subscribers can schedule message delivery for up to 1 year in advance.

Senders can readdress, rerecord, and review the message before scheduling it for delivery. After the system confirms the date and time for the future delivery, the sender cannot change or delete the message.

You can display and delete messages marked for future delivery.

A subscriber can schedule any number of messages for future delivery as long as the subscriber’s mailbox has enough space. The system counts all the sender’s future messages against the sender’s quota until a message is sent. After a future message is delivered, it is counted against the recipient’s quota.

The following sections describe this feature:

- Permitted Subscribers, page 109
- Message Delivery Time, page 109
- System Status Impact, page 110
- Unsuccessful Message Delivery, page 110
- Loss of Future Messages, page 110
- Incorrect Message Delivery, page 110
- Backup and Restore of Future Messages, page 111
- Displaying and Deleting Future Messages, page 111

Permitted Subscribers

No special privileges are required to use this feature.

All subscribers configured on the system have access to this feature.

Message Delivery Time

Any change or drift in the system time impacts the message delivery. For example, a sender schedules a message for a 4:00 p.m. delivery when the system time is 3:00 p.m.

- If the system time jumps ahead by 15 minutes, the system delivers the message at its new 4:00 p.m. Only 45 minutes, rather than 1 hour, separates the original scheduling of the message delivery and the actual delivery.
- If the system clock falls behind by 15 minutes, the system delivers the message at its new 4:00 p.m. time, which is 1 hour and 15 minutes from the time of the original scheduling.
- If the system time moves forward beyond the scheduled time, such as by 2 hours, the system delivers the message immediately after the time change.
System Status Impact

If the sending system is in a shutdown state with messages scheduled to be delivered during that time, the system delivers the messages as soon as the system comes up again.

If the sending system is in “offline” state with messages scheduled to be delivered during that time, the system delivers the messages as soon as the system returns to “online” state.

Unsuccessful Message Delivery

Message delivery fails in the following situations:

- Networking is disabled on a sending system before delivering a scheduled message to a remote network location.
  
  For example, location A has a message scheduled for delivery to remote location B on 15-April-2006. You disable location A on 14-April-2006. Message delivery fails.

- Networking is disabled on the remote location before delivery of the scheduled message.

- The remote location is disabled before delivery of the scheduled message.

In all cases, the system generates a nondelivery receipt (NDR).

However, if you change the IP address or hostname of the remote location before delivery of a scheduled message, the system delivers the message successfully.

Loss of Future Messages

Several scenarios can cause the loss of future messages:

- If you delete a sender’s mailbox, the system deletes any scheduled messages from that sender.

- If the sender’s mailbox is disabled, the system does not delete the messages immediately. At the scheduled time, the system checks the status of the sender’s mailbox. If the mailbox is enabled, the system delivers the scheduled message. If the mailbox is disabled, the system deletes the messages.

- If the recipient or remote location of a scheduled message is deleted, the system does not delete the scheduled message immediately. At the time of delivery, the system checks if the recipient or remote location is deleted. If the recipient or remote location is restored, the system delivers the message successfully. If the recipient or remote location is deleted, the system deletes the message and generates an NDR.

Incorrect Message Delivery

Subscriber or network configuration changes may impact delivery of scheduled messages.

- A message is scheduled for delivery on 12-April-2006 to Subscriber1 at extension 1234 at remote location A. On 11-April-2006, you change Subscriber1’s extension to 5678. The system cannot deliver the message and generates an NDR.

- A message is scheduled for delivery on 12-April-2006 to Subscriber1 at extension 1234 at remote location A. On 11-April-2006, you delete Subscriber1 and gives Subscriber1’s extension to Subscriber2. The system delivers the scheduled message successfully to Subscriber2.
Backup and Restore of Future Messages

The system backs up messages scheduled for future delivery as part of a data backup. When that backup is restored, the system delivers the scheduled messages at the appropriate times. If the scheduled delivery time is in the past, the system delivers those messages as soon as the system is restored.

Recipients may receive a scheduled message more than once. For example, you back up the system on 20-March-2006. This backup contains messages scheduled for 25-March-2006. On 26-March-2006, the system experiences a power outage. The administrator uses the 20-March-2006 backup to restore the system. The system redelivers the scheduled messages contained in the backup file.

Displaying and Deleting Future Messages

To display and delete future messages, see “Monitoring Future Messages” on page 250.
Configuring Mailboxes

Assign a voice mailbox to a subscriber configured in the Cisco Unity Express database. A mailbox subscriber is either an individual or the owner of a group.

Not all subscribers or extensions require a voice mailbox. To use mailboxes efficiently, consider the function or purpose of the subscriber or extension before assigning the mailbox.

The commands to create or modify a voice mailbox are the same.

This chapter contains the following sections:

- Types of Mailboxes, page 113
- Mailbox Properties, page 114
- Configuring Mailboxes, page 114
- Unlocking a Voice Mailbox, page 119
- Refreshing Message Waiting Indicators, page 120

### Types of Mailboxes

Cisco Unity Express supports two types of mailboxes:

- **Personal mailbox**—This mailbox is assigned to a specific subscriber and is accessible only by this subscriber. When a caller leaves a message in this mailbox, the message waiting indicator (MWI) light turns on.

- **General delivery mailbox (GDM)**—This mailbox is assigned to a group of subscribers. (See “Adding and Modifying a Group” on page 104 for the definition of group members.) All members in the group have access to the mailbox. When a caller leaves a message in this mailbox, no MWI is turned on. Instead, when a member logs in to the personal mailbox, the mailbox menu allows the member to access the messages in each GDM to which the member belongs. Only one person can access the GDM at a time. After the first person saves or deletes a message in the GDM, the message is no longer played as “new” for any subsequent members.
Mailbox Properties

- Cisco Unity Express supports IP telephones using Skinny Client Control Protocol (SCCP) or analog telephones behind an SCCP gateway (such as the Cisco VG 248 or the Cisco ATA). Media Gateway Control Protocol (MGCP) IP telephones, analog FXS telephones on the Cisco Unified CME router, and soft telephones are not supported.

- Only the owner of a personal mailbox can delete messages in the mailbox. Members of a GDM can delete messages in the mailbox. The administrator cannot delete messages or display the length of time for which messages are stored in the system. When the mailbox owner logs in to the voice mailbox, the application notifies the owner of any expired messages.

  If the mandatory message expiry feature is enabled, the owner must delete the expired messages. If the mandatory message expiry feature is disabled, the owner can delete or save each message.

- Mailboxes can have different storage sizes. Consider the purpose of the mailbox when assigning a smaller or larger size than the default. The aggregate of all mailboxes cannot exceed the maximum storage allowed on your system. See “Software Licenses and Factory-Set Limits” on page 9 for the mailbox storage capacity for your system, and use the `show voicemail usage` command to display the amount of storage already configured.

Configuring Mailboxes

Follow this procedure to configure voice mailboxes.

Prerequisites

Verify that the users and groups that will have voice mailboxes are configured before using this procedure. If you have not created the users and groups, see “Adding and Modifying a User” on page 98 or “Adding and Modifying a Group” on page 104.

Required Data for This Procedure

System-wide mailbox default values were configured during the installation process. If necessary, modify any of the following values for a specific mailbox:

- Mailbox size
- Expiration time in days
- Message size

Use the `show voicemail limits` command to display the default values. See “Configuring System-Wide Voice-Mail Parameters” on page 77 for more information about system-wide mailbox default values.

SUMMARY STEPS

1. `config t`
2. `voice mailbox owner name [size seconds]`
3. `description “text”`
Configuring Mailboxes

4. enable
5. expiration time days
6. greeting { alternate | standard }
7. mailboxsize seconds
8. messagesize seconds
9. tutorial
10. zerooutnumber “number”
11. end
12. exit
13. show voicemail { detail { mailbox | user } name | limits | mailboxes [ idle days ] | usage | users }
14. copy running-config startup-config

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> voice mailbox owner name [size seconds]</td>
<td>Creates a mailbox for the name value and with storage size seconds value, and enters mailbox configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# voice mailbox owner user3 se-10-0-0-0(config)# voice mailbox owner sales</td>
<td>This command maps the subscriber’s name and extension (configured using the username command) to the voice mailbox.</td>
</tr>
<tr>
<td><strong>Step 3</strong> description “text”</td>
<td>(Optional) Enters a description of the mailbox. Use double quotes around the text.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-mailbox)# description &quot;User 3 mailbox&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> enable</td>
<td>Activates the new mailbox or reactivates the disabled mailbox.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-mailbox)# enable</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> expiration time days</td>
<td>Sets the number of days for which messages are stored in the mailbox. The default is 30 days.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-mailbox)# expiration time 10</td>
<td>This value takes precedence over the system-wide expiration time.</td>
</tr>
<tr>
<td><strong>Step 6</strong> greeting { alternate</td>
<td>standard }</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-mailbox)# greeting standard</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Command or Action</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
</tr>
<tr>
<td>7</td>
<td>mailboxsize ( \text{seconds} )</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config-mailbox)# mailboxsize 300}</td>
</tr>
<tr>
<td>8</td>
<td>messagesize ( \text{seconds} )</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config-mailbox)# messagesize 120}</td>
</tr>
<tr>
<td>9</td>
<td>tutorial</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config-mailbox)# tutorial}</td>
</tr>
<tr>
<td>10</td>
<td>zerooutnumber ( \text{number} )</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config-mailbox)# zerooutnumber “2100”}</td>
</tr>
<tr>
<td>11</td>
<td>end</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config-mailbox)# end}</td>
</tr>
<tr>
<td>12</td>
<td>exit</td>
</tr>
<tr>
<td></td>
<td>\textbf{Example:}</td>
</tr>
<tr>
<td></td>
<td>\texttt{se-10-0-0-0(config)# exit}</td>
</tr>
</tbody>
</table>
### Configuring Mailboxes

#### Step 13
**Command or Action**
```
show voicemail [detail {mailbox | user} name | limits | mailboxes [idle days] | usage | users]
```

**Example:**
```
se-10-0-0-0# show voicemail detail mailbox sales
se-10-0-0-0# show voicemail detail mailbox user1
se-10-0-0-0# show voicemail detail user user3
se-10-0-0-0# show voicemail limits
se-10-0-0-0# show voicemail mailboxes
se-10-0-0-0# show voicemail mailboxes idle 5
se-10-0-0-0# show voicemail usage
se-10-0-0-0# show voicemail users
```

**Purpose**
Displays voice mailbox properties.
- **detail**—Displays the details for a configured mailbox for the subscriber with the specified user ID. For a group mailbox, this is the name of the mailbox, not the owner of the mailbox. If a subscriber is an owner of a group mailbox, details for both the subscriber’s personal and group mailboxes are displayed.
- **limits**—Displays the default values for all mailboxes.
- **mailboxes**—Displays all configured mailboxes and their current mailbox storage status. The `idle` parameter displays the mailboxes that have been inactive for at least the specified number of days.
- **usage**—Displays how much of the system’s voice-mail capacity has been used or configured.
- **users**—Lists the local voice-mail subscribers.

#### Step 14
**Example:**
```
se-10-0-0-0# copy running-config startup-config
```

**Purpose**
Copies the configuration changes to the startup configuration.

### Examples

The following example configures a mailbox for a subscriber and displays the output of the `show` commands:
```
se-10-0-0-0# config t

se-10-0-0-0(config)# voice mailbox owner user3
se-10-0-0-0(config-mailbox)# description "User 3 mailbox"
se-10-0-0-0(config-mailbox)# expiration time 10
se-10-0-0-0(config-mailbox)# greeting alternate
se-10-0-0-0(config-mailbox)# mailboxsize 480
se-10-0-0-0(config-mailbox)# messagesize 120
se-10-0-0-0(config-mailbox)# no tutorial
se-10-0-0-0(config-mailbox)# zerooutnumber "2100"
se-10-0-0-0(config-mailbox)# enable
se-10-0-0-0(config-mailbox)# end
se-10-0-0-0(config)# exit

se-10-0-0-0# show voicemail detail mailbox user3
```

**Owner:** /sw/local/users/user3
**Type:** Personal
**Description:** User 3 mailbox
**Busy state:** idle
**Enabled:** true
**Mailbox Size (seconds):** 480
**Message Size (seconds):** 120
**Play Tutorial:** false
**Space Used (seconds):** 0
Configuring Mailboxes

Total Message Count: 0
New Message Count: 0
Saved Message Count: 0
Future Message Count: 0
Deleted Message Count: 0
Expiration (days): 10
Greeting: alternate
Zero Out Number: 1234

se-10-0-0-0# show voicemail limits

- Default Mailbox Size (seconds): 3000
- Default Caller Message Size (seconds): 60
- Maximum Recording Size (seconds): 900
- Default Message Age (days): 30
- System Capacity (minutes): 3600
- Default Prompt Language: en_ENU
- Operator Telephone: 1000
- Maximum Broadcast Size (seconds): 300
- Broadcast Message Age (days): 30
- Broadcast Message MWI: disabled
- Play Caller Id: disabled
- Mandatory Message Expiry: disabled
- Mailbox Selection: last-redirect

se-10-0-0-0# show voicemail mailboxes

<table>
<thead>
<tr>
<th>OWNER</th>
<th>MSGS</th>
<th>NEW</th>
<th>SAVE</th>
<th>DEL</th>
<th>BCST</th>
<th>FUTR</th>
<th>MSGTIME</th>
<th>MBXSIZ</th>
<th>USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>user1</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>3000</td>
<td>3000</td>
<td>100%</td>
</tr>
<tr>
<td>user2</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>3000</td>
<td>3000</td>
<td>100%</td>
</tr>
<tr>
<td>user3</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>3000</td>
<td>3000</td>
<td>100%</td>
</tr>
<tr>
<td>user4</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>3000</td>
<td>3000</td>
<td>100%</td>
</tr>
</tbody>
</table>

se-10-0-0-0# show voicemail mailboxes idle 3

<table>
<thead>
<tr>
<th>OWNER</th>
<th>IDLE</th>
<th>MSGS</th>
<th>MSGTIME</th>
<th>MBXSIZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;user1&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
<tr>
<td>&quot;user2&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
<tr>
<td>&quot;user3&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
<tr>
<td>&quot;user4&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
<tr>
<td>&quot;user5&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
<tr>
<td>&quot;user6&quot;</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
</tbody>
</table>

se-10-0-0-0# show voicemail mailboxes idle 20

<table>
<thead>
<tr>
<th>OWNER</th>
<th>IDLE</th>
<th>MSGS</th>
<th>MSGTIME</th>
<th>MBXSIZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;user1&quot;</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>3000</td>
</tr>
</tbody>
</table>

se-10-0-0-0# show voicemail detail user user3

-- Mailboxes owned --
"/sw/local/users/user3" User 3 mailbox

-- Mailboxes accessible --

se-10-0-0-0# show voicemail usage

- personal mailboxes: 1
- general delivery mailboxes: 0
- orphaned mailboxes: 0
- capacity of voicemail (minutes): 6000
- allocated capacity (minutes): 8.0
- message time used (seconds): 0
Unlocking a Voice Mailbox

If a mailbox becomes locked, the telephone subscriber will hear a message stating that the mailbox is unavailable. Use the `voice mailbox unlock` command to unlock the mailbox.

Starting in Cisco Unity Express EXEC mode, enter the following command:

```
voice mailbox unlock {owner name | telephonenumber tel-number}
```

<table>
<thead>
<tr>
<th>name</th>
<th>Name of the mailbox owner.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tel-number</td>
<td>Extension or telephone number of the mailbox.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# voice mailbox unlock owner user3
se-10-0-0-0# voice mailbox unlock telephonenumber 50174
```

This command is equivalent to the GUI operation of clicking the Unlock icon under Voice Mail > Mailboxes.
Refresh Message Waiting Indicators

Occasionally the MWI lights on a subscriber’s telephone get out of synchronization with the voice message status of the mailbox. When this condition happens, the MWI light is lit although the mailbox has no new messages or the MWI light is not lit although the mailbox has new messages.

Use the **mwi refresh all** or **mwi refresh telephonenum** command to refresh the MWI lights and to synchronize the mailbox message status and MWI lights. If the subscriber has no messages, the MWI turns off. If the subscriber has voice messages, the MWI light turns on.

Starting in Cisco Unity Express EXEC mode, enter the following command:

```
mwi refresh all
```

or

```
mwi refresh telephonenumber tel-number
```

where *tel-number* is the telephone number of a specific extension.

**Example:**
```
se-10-0-0-0# mwi refresh all
se-10-0-0-0# mwi refresh telephonenumber 50174
```

This command is equivalent to the GUI operation of clicking the **Refresh All** or **Refresh Selected** icons under **Voice Mail > Message Waiting Indicators > Refresh**.
Configuring Distribution Lists

Last Updated: July 25, 2006

This chapter describes distribution lists and contains the following sections:

- Overview of Distribution Lists, page 121
- Public Distribution Lists, page 122
- Private Distribution Lists, page 123
- Differences Between Cisco Unity Express and Cisco Unity Distribution Lists, page 125
- Configuring Public Distribution Lists, page 126
- Configuring Private Distribution Lists, page 129
- Displaying Distribution Lists, page 129
- Deleting Distribution Lists, page 131

Overview of Distribution Lists

Distribution lists allow subscribers to send a voice-mail message to multiple recipients at the same time. The sender can send voice messages to distribution lists only on the local system. The sender cannot address a voice message to a distribution list on a remote system.

Cisco Unity Express supports two types of distributions lists:

- Public distribution lists
- Private distribution lists

Properties of Distribution Lists

Cisco Unity Express distribution lists have the following properties:

- Members of a distribution list can be any combination of the following:
  - Local and remote subscribers
    A remote subscriber that is statically configured on the local system can be a member of a distribution list. However, that remote subscriber cannot own a distribution list on the local system.
  - General delivery mailboxes (GDMs)
Public Distribution Lists

Groups

Other distribution lists

Blind addresses

Specify the location ID and extension of the blind address. The system verifies the location ID and the extension length.

Members—Distribution lists can comprise a variety of members: local subscribers, remote subscribers, blind addresses, GDMs, groups, and other lists.

A public list member can be another public list but may not be a private list.

A private list member can be any public list and may be another private list owned by the same subscriber.

When a subscriber addresses a voice message to a public or private distribution list, the system verifies that the list has members. If the list is empty, the system plays a prompt indicating that the list contains no members and does not allow the list to be used as a recipient of the message.

Recursive distribution lists are permitted. For example, list A can be a member of list B, and list B can be a member of list A.

The system generates a special public distribution list, the everyone list, which contains all the local subscribers. It does not contain the local groups, GDMs, and other lists. You cannot add to or delete members from this list, assign an owner to this list, or delete this list.

Each list must have a unique name or number.

Valid names have a maximum of 64 characters and include the letters A to Z, a to z, digits 0 to 9, underscore (_), dot (.), and dash (-). Names must start with a letter. Spaces are not allowed.

The owner of a public or private distribution list can record a spoken name for the list using the TUI. Recording or uploading the spoken name cannot be done through the GUI or CLI.

The everyone public list has a default spoken name. An administrator can change this name using the TUI.

If a local or remote subscriber is deleted from the system, the subscriber is no longer a member or owner (in the case of local subscribers) of any public or private distribution list on the system. The system deletes all private lists owned by the deleted local subscriber. If the local subscriber was the sole owner of a public distribution list, the Administrators group assumes ownership of that list.

This same rules apply to the removal of a group, except that the system does not delete any private lists.

Access to remote distribution lists—A local subscriber cannot modify a remote distribution list and cannot use a remote distribution list as the recipient of a voice message.

Public Distribution Lists

All local subscribers of the system can use a public distribution list to address their voice-mail messages.

Use the Cisco Unity Express graphical user interface (GUI), telephone user interface (TUI), or command-line interface (CLI) to create and manage public distribution lists.
Table 12 describes the features of a public distribution list.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Limits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of lists</td>
<td>AIM=15</td>
<td>Maximum number of lists allowed on the system. This number does not include the everyone list.</td>
</tr>
<tr>
<td></td>
<td>NM=15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NM-EC=25</td>
<td></td>
</tr>
<tr>
<td>List number</td>
<td>Maximum 15 digits</td>
<td>A public distribution list must have a unique number.</td>
</tr>
<tr>
<td>Number of owners of a single list</td>
<td>Minimum=0</td>
<td>The everyone list cannot have an owner.</td>
</tr>
<tr>
<td></td>
<td>Maximum=50</td>
<td>The owner can be any local subscriber or group. If the owner is a group, all the members of that group are owners of the list. Members of the Administrators group are implicit owners of all public distribution lists. If all the owners of a list are deleted, the Administrator group continues to have ownership of the list. A list owner does not have to be a member of that list.</td>
</tr>
<tr>
<td>Maximum number of list members on the local system</td>
<td>AIM=500</td>
<td>This total is the sum of all members in all public lists on the local system, excluding the everyone list.</td>
</tr>
<tr>
<td></td>
<td>NM=1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NM-EC=1000</td>
<td></td>
</tr>
<tr>
<td>Maximum number of list owners on the local system</td>
<td>50</td>
<td>This total is the sum of all owners of all public lists on the system, excluding the everyone list. This maximum applies to all voice mailbox license levels.</td>
</tr>
<tr>
<td>Creating, editing, and deleting a public list</td>
<td>Not applicable</td>
<td>Local subscribers belonging to the Administrators group, or to any group with the ManagePublicList privilege, can create public lists. Owners of a public list can edit or delete it.</td>
</tr>
</tbody>
</table>

**Private Distribution Lists**

Any local subscriber can create private distribution lists that are accessible only to that subscriber. Table 13 describes the features of private distribution lists.
### Table 13 Features of Private Distribution Lists

<table>
<thead>
<tr>
<th>Feature</th>
<th>Limits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of lists per subscriber</td>
<td>5</td>
<td>Maximum number of lists a local subscriber can create.</td>
</tr>
<tr>
<td>List number</td>
<td>1-5</td>
<td>Valid range for private list numbers.</td>
</tr>
<tr>
<td>Number of owners</td>
<td>1</td>
<td>The owner of a private distribution list is the local subscriber who created it. The owner of a private list cannot be changed.</td>
</tr>
<tr>
<td>List creation and management</td>
<td></td>
<td>Use the GUI or TUI to create and manage private lists. No CLI commands are available to create or manage private lists.</td>
</tr>
<tr>
<td>Maximum number of members per subscriber</td>
<td>50</td>
<td>The sum of all members in all private lists owned by a subscriber.</td>
</tr>
<tr>
<td>Viewing private lists</td>
<td>Not applicable</td>
<td>The list owner, members of the Administrator group, or any group with the ViewPrivateList privilege can use the GUI to view the details of private lists owned by a specific subscriber. CLI commands are available to view private lists owned by any local subscriber. No special privilege is required to use the CLI commands.</td>
</tr>
</tbody>
</table>
Differences Between Cisco Unity Express and Cisco Unity Distribution Lists

Table 14 describes important differences between the Cisco Unity Express and Cisco Unity distribution lists.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Cisco Unity Express Implementation</th>
<th>Cisco Unity Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extra TUI menu options are available for managing public lists.</td>
<td>Permitted for private distribution lists.</td>
</tr>
<tr>
<td></td>
<td>Key presses for private distribution lists are the same as for Cisco Unity.</td>
<td></td>
</tr>
<tr>
<td>Creating distribution lists</td>
<td>Created and deleted by the subscriber using TUI menus.</td>
<td>Created by the system.</td>
</tr>
<tr>
<td></td>
<td>Implicit list creation is available for both public and private lists. If a subscriber tries to</td>
<td>No TUI options are available for subscribers to create or delete distribution lists.</td>
</tr>
<tr>
<td></td>
<td>add a member to a nonexistent list, the system creates the list and adds the member to it. If a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>subscriber tries to record the spoken name for a nonexistent list, the system creates the list and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>records the spoken name. In both cases, the subscriber hears a prompt stating that a new list was</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created.</td>
<td></td>
</tr>
<tr>
<td>Removing members of a list</td>
<td>The subscriber removes a list member by name or extension, similar to the dial-by-name and</td>
<td>The system assigns a sequence of numbers to the list members’ names and extensions. The</td>
</tr>
<tr>
<td></td>
<td>extension flow for addressing voice messages.</td>
<td>subscriber presses the sequence number to remove the member.</td>
</tr>
<tr>
<td>Adding private lists to another</td>
<td>A private list may be added to another private list owned by the same subscriber.</td>
<td>Not permitted.</td>
</tr>
<tr>
<td>list</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Configuring Public Distribution Lists

Use this procedure to create or modify public distribution lists.

Note
Use the TUI or GUI to create private distribution lists. No CLI commands are available for private distribution lists.

Prerequisites

Local and remote subscribers must be previously defined on the system.

Required Data for This Procedure

The following information is required to create a public distribution list:
- List name and number
- (Optional) List description—The description can have a maximum of 64 characters.

The following information is required to add members to a distribution list:
- Member type local (subscriber, group, GDM, distribution list, remote subscriber, or blind address)
- Member name or extension

SUMMARY STEPS

1. `config t`
2. `list name list-name number list-number create`
3. `list number list-number owner owner-ID`
4. `list number list-number member {member-name | extension} type {group | user | gdm | list | remote | blind}`
5. (Optional) `list number list-number description description`
6. `exit`
## Configuring Distribution Lists

### Configuring Public Distribution Lists

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# config t
se-10-0-0-0(config)#
```

**Step 2**

`list name list-name number list-number create`

**Example:**

```
se-10-0-0-0(config)# list name engineers number 5 create
```

Creates a list named `list-name` with the number `list-number`.

- `list-number` can be up to 15 digits in length.
- An error message appears if `list-name` or `list-number` already exists.
- An error message appears if the maximum number of public lists already exists.

**Step 3**

`list number list-number owner owner-ID`

**Example:**

```
se-10-0-0-0(config)# list number 5 owner user12
```

Assigns an owner to the list. The owner can be a local subscriber or a local group.

- An error message appears if `listnumber` or `owner-ID` does not exist.
- An error message appears if the maximum number of owners on the system has been reached.
- Use the **no** form of the command to remove the owner of the list.
Configuring Public Distribution Lists

Command or Action

**Step 4**

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>`list number list-number member {member-name</td>
<td>extension}`</td>
</tr>
</tbody>
</table>
| `type {group|user|gdm|list|remote|blind}` | - **group**—Local or remote group  
- **user**—Local subscriber  
- **gdm**—Local or remote GDM  
- **list**—Any local public list that belongs to the list owner  
- **remote**—Remote subscriber  
- **blind**—Blind address of a remote subscriber  
Valid members include:  
- Local or remote subscriber  
- Group ID  
- GDM name  
- Voice mailbox extension (blind address)  
- List number  
- List name  
An error message appears if the list or member does not exist.  
An error message appears if the maximum number of public list members has been reached.  
Use the `no` form of this command to delete the member from the list. |

**Example:**

```
se-10-0-0-0(config)# list number 5 member user8 type user  
se-10-0-0-0(config)# list number 5 member managers type group  
se-10-0-0-0(config)# list number 5 member sale type gdm  
se-10-0-0-0(config)# list number 5 member mylist3 type list  
se-10-0-0-0(config)# list number 5 member user15 type remote  
se-10-0-0-0(config)# list number 5 member user5555 type blind
```

**Step 5**

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>list number list-number description description</code></td>
<td>(Optional) Adds a description to the public list. Enclose the description in quotes if the description is more than one word.</td>
</tr>
</tbody>
</table>
| **Example:** | An error message appears if the list does not exist.  
Use the `no` form of this command to delete the description. |
```
se-10-0-0-0(config)# list number 5 description "SJ Engineers"
```

**Step 6**

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>exit</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
</tbody>
</table>
```
se-10-0-0-0(config)# exit  
se-10-0-0-0#
```

**Examples**

The following example creates public distribution list number 5 for engineers:

```
se-10-0-0-0# config t  
se-10-0-0-0(config)# list name engineers number 5 create  
se-10-0-0-0(config)# list number 5 owner User1  
se-10-0-0-0(config)# list number 5 owner progmgrs  
se-10-0-0-0(config)# list number 5 member User1 type user
```
se-10-0-0-0(config)# list number 5 member User2 type user
se-10-0-0-0(config)# list number 5 member betamgrs type group
se-10-0-0-0(config)# list number 5 member tech type gdm
se-10-0-0-0(config)# list number 5 member 87777 type blind
se-10-0-0-0(config)# exit

**Configuring Private Distribution Lists**

Local subscribers can configure their private distribution lists using the GUI menu option VoiceMail > Distribution Lists > My Private Lists or by using the TUI. No CLI commands are available for configuring private lists.

**Displaying Distribution Lists**

Several commands are available to display distribution lists and their members.

**Displaying All Public Distribution Lists**

The following Cisco Unity Express EXEC mode command displays all the public distribution lists on the local system:

```
show lists public
```

This command displays the lists in alphabetical order with each list name, number, and type, followed by the details of each list.

Output from this command may appear similar to the following:

```
se-10-0-0-0# show lists public

List number List Name Type
5 engineers Public
9999 everyone Public
Number: 5
Name: engineers
Type: Public
Description:
 Owners:
user15 Local User
progmgrs Group
Members:
user15 Local User
user23 Local User
progmgrs Group
techs General Delivery Mailbox
tech25 Remote User
nyc5555 Blind Address
```
Configuring Distribution Lists

Displaying Distribution Lists

Displaying Details of a Public Distribution List

The following Cisco Unity Express EXEC mode command displays details of a specific public distribution list:

```
show list detail public {name list-name | number list-number}
```

where `list-name` is the name of the list and `list-number` is the number of the list.

This command displays the list number, list name, list type, owners, and members of the list with their type categories.

Output from this command may appear similar to the following:
```
se-10-0-0-0# show list detail public name engineers
Number: 5
Name: engineers
Type: Public
Description:
Owners:
  user15 user
  progmgrs group
Members:
  user15 user
  betamgrs group
techs gdm
tech25 remote
nyc5555 blind
```

The command `show list detail public number 5` would display the same output as shown above.

Displaying an Owner’s Lists

The following Cisco Unity Express EXEC mode command displays the public and private lists owned by a specific subscriber or group:

```
show lists owner owner-id
```

where `owner-id` is the name of a subscriber or group. An error message appears if `owner-id` does not exist.

This command displays the list number, list name, and list type for all the public and private lists that belong to the specified owner. The lists appear in alphabetical order, private lists first followed by public lists.

Output from this command may appear similar to the following:
```
se-10-0-0-0# show lists owner user15
Owner: user15
List Number   List Name     List Type
  4             projectteam  Private List
  5             engineers     Public List
  25            managers     Public List
```
Displaying Details of a Private Distribution List

The following Cisco Unity Express EXEC mode command displays the details of a specific private distribution list for a specific subscriber:

```
show list detail private {name list-name | number list-number} owner owner-id
```

where `list-name` is the name of the private list, `list-number` is the number of the private list, and `owner-id` is the name of a subscriber. An error message appears if `list-name`, `list-number`, or `owner-id` does not exist.

This command displays the list number, list name, owner, members, and member types of the specified private distribution list.

Output from this command may appear similar to the following:

```
se-10-0-0-0# show list detail private name projectteam owner user15
Number: 4
Name: projectteam
Type: Private
Description:
Owner:
    user15
Members:
    tech1 user
    tech2 user
    testers group
    tech10 remote
```

The command `show lists detail private number 4 owner user15` would display the same output as shown above.

Deleting Distribution Lists

The TUI and GUI have options for deleting private and public distribution lists. Additionally, the CLI has a command for deleting public lists on the local system.

Use the following Cisco Unity Express configuration mode command to delete public distribution lists:

```
list number list-number delete
```

where `list-number` is the number of the public distribution list.

The following example deletes list number 10 from the local system:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# list number 10 delete
se-10-0-0-0(config)# exit
```

Configuring Security

Overview of Security

Cisco Unity Express provides the infrastructure for configuring and managing security certificates. You can obtain these certificates using either of the following methods:

- Generate self-signed certificates using the RSA encryption algorithm with a modulus size from 512 to 2048.

  **Note** For self-signed certificates, certain clients display a warning message and require subscribers to accept the certificate.

- Obtain the certificates from the Certificate Authority (CA). Import these certificates from the Cisco Unity Express console or upload them from an FTP or HTTP server. The certificates use either the Distinguished Encoding Rules (DER) or Privacy Enhanced Mail (PEM) encoding formats.

  Configure the Integrated Messaging Access Protocol (IMAP) feature to use this infrastructure to provide a secure connection between an e-mail client and a Cisco Unity Express module.

  **Note** This configuration and infrastructure apply only to Cisco Unity Express devices. For other devices, see their respective device documentation.
Obtaining a Certificate and Private Key

Cisco Unity Express requires a default certificate and private key before the IMAP server is configured for SSL and can accept SSL connections. Two procedures are available to obtain a certificate-key pair:

- **Generating a Certificate-Key Pair**—A command automatically generates the pair.
- **Importing a Certificate-Key Pair**—A command imports a pair from the console or a remote server.

Generating a Certificate-Key Pair

Starting in Cisco Unity Express configuration mode, use the following command to have the Cisco Unity Express system generate a certificate-key pair:

```
crypto key generate [rsa [label label-name | modulus modulus-size]] | default
```

where *rsa* is the supported encryption algorithm, *label-name* is the name assigned to the certificate-key pair, *modulus-size* is a number between 512 and 2048 used for generating a key, and *default* designates the generated certificate-key pair as the system default. If you do not select any keywords or do not specify a label, the system automatically generates a certificate-key pair with a name in the format `hostname.domainname`.

The following example generates a default certificate-key pair with the label alphakey.myoffice.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# crypto key generate label alphakey.myoffice modulus 600 default
se-10-0-0-0(config)# end
```

Importing a Certificate-Key Pair

Starting in Cisco Unity Express configuration mode, use the following command to import a certificate-key pair:

```
crypto key import rsa [label label-name | der url {ftp | http} | pem {terminal | url {ftp | http}}] | default
```

where the parameters are defined as follows:

- *rsa* is the supported encryption algorithm.
- *label label-name* is the name assigned to the certificate-key pair.
- *der* and *pem* are the encoding formats of the imported certificate.
- *terminal* indicates that the import is coming from the console.
- *url {ftp | http} indicates that the import is coming from a remote server at the specified URL.
- *default* designates the imported certificate-key pair as the system default.

The command prompts you for the certificate and private key information.

The following example imports a default certificate-key pair with the label alphakey.myoffice.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# crypto key import rsa label alphakey.myoffice pem terminal
```

Enter certificate...
End with a blank line or “quit” on a line by itself

Enter private key...
Private key passphrase?
Displaying the Certificate-Key Pairs

Starting in Cisco Unity Express EXEC mode, use the following command to display a list of all certificate-key pairs on the system or to display a specific certificate-key pair.

```
show crypto key {all | label label-name}
```

where `all` displays all certificate-key pairs on the system and `label label-name` displays information for the specified certificate-key pair.

The following is sample output for the `show crypto key` command:

```
se-10-0-0-0# show crypto key label alphakey.myoffice
Label name: alphakey.myoffice [default]
Entry type:Key Entry
Creation date: Mon Jun 10 14:23:09 PDT 2002
Owner: CN=se-1-100-6-10.localdomain, O='', L='', ST='', C='' 
Issuer: CN=se-1-100-6-10.localdomain, O='', L='', ST='', C='' 
```

Changing the Default Certificate-Key Pair

Use the following command in Cisco Unity Express configuration mode to designate a certificate-key pair as the system default.

```
[no] crypto key label label-name default
```

where `label label-name` is the certificate-key pair that is designated as the new system default.

If several certificate-key pairs exist on the system and none of them are the system default, use this command to designate one of them as the system default.

If a certificate-key pair exists as the default, designating another pair as the default automatically removes the default status from the first pair.

The `no` form of the command does not delete the certificate-key pair; it only removes the system default designation.

The system displays an error message if the certificate-key pair does not exist.

Deleting a Certificate-Key Pair

Starting in Cisco Unity Express configuration mode, use the following command to delete a certificate-key pair.

```
crypto key delete {all | label label-name}
```
where **all** deletes all certificate-key pairs on the system and **label label-name** deletes information for the specified certificate-key pair.

The following deletes the certificate-key pair labeled alphakey.myoffice:

```bash
se-10-0-0-0# config t
se-10-0-0-0(config)# crypto key delete label alphakey.myoffice
se-10-0-0-0(config)# end
```

An error message appears if the certificate-key pair does not exist.
Configuring SNMP Monitoring

Last Updated: July 25, 2006

This chapter describes the procedures for configuring Simple Network Monitoring Protocol (SNMP) on the Cisco Unity Express module to monitor the system’s health, conduct performance monitoring, collect data, and manage traps for Cisco Unity Express voicemail and auto attendant applications.

See the *Cisco Unity Express SNMP MIB Support* guide for details about the CISCO-UNITY-EXPRESS-MIB.

The system monitoring commands are not available through the Cisco Unity Express graphical user interface (GUI).

This chapter contains the following sections:

- Prerequisites for Implementing SNMP Monitoring on Cisco Unity Express, page 137
- Enabling the SNMP Agent, Passwords, and Trap Server, page 137
- Setting Threshold Values for Subscriber Responses, page 140
- Enabling Cisco Unity Express Shutdown Requests, page 143

Prerequisites for Implementing SNMP Monitoring on Cisco Unity Express

See the *Cisco Unity Express SNMP MIB Support* guide for details about installing the CISCO-UNITY-EXPRESS-MIB on the Cisco Unity Express module.

Enabling the SNMP Agent, Passwords, and Trap Server

Activating the SNMP system monitoring on Cisco Unity Express requires the following tasks:

- Enabling the SNMP agent.
- Specifying the SNMP notification passwords.
- Specifying at least one host server that will receive the notifications.
Prerequisites

Be sure that the appropriate MIBs are installed. See the *Cisco Unity Express SNMP MIB Support* guide for details.

Required Data for This Procedure

- Passwords that permit subscribers to retrieve and change SNMP information. Specify whether these passwords will have read-only or read-write privileges. The system supports a maximum of 5 read-only and 5 read-write passwords. Each password may have a maximum of 15 alphanumeric characters, including letters A to Z, letters a to z, digits 0 to 9, underscore (_), and hyphen (-).

- IP address and password of the host server that will receive the SNMP information. If no host is defined, the system discards the trap information. The system supports a maximum of 5 servers. The password does not have to be the same as the subscriber passwords.
  
  No host is considered the primary host. The system sends the SNMP notifications to all enabled hosts.

- (Optional) Server contact and location information.

SUMMARY STEPS

1. `config t`
2. `snmp-server community community-string {ro | rw}`
3. `snmp-server enable traps`
4. `snmp-server host host-ipaddress community-string`
5. (Optional) `snmp-server contact contact-string`
6. (Optional) `snmp-server location location-string`
7. `end`
8. `copy running-config startup-config`
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><strong>se-10-0-0-0# config t</strong></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>**snmp-server community community-string { ro</td>
</tr>
</tbody>
</table>
| **Example:** | **se-10-0-0-0(config)# snmp-server community myaccess rw**  
**se-10-0-0-0(config)# snmp-server community youraccess ro** |
| **Step 3** | **snmp-server enable traps** |
| **Example:** | **se-10-0-0-0(config)# snmp-server enable traps** |
| **Step 4** | **snmp-server host host-ipaddress community-string** |
| **Example:** | **se-10-0-0-0(config)# snmp-server host 172.16.100.10 iminhere**  
**se-10-0-0-0(config)# snmp-server host 172.16.100.20 bigtraps**  
**se-10-0-0-0(config)# snmp-server host 172.16.100.30 traps4cue** |
| **Step 5** | **snmp-server contact “contact-string”** |
| **Example:** | **se-10-0-0-0(config)# snmp-server contact “Dial 71111 for system operator”** |

- **community-string**—Specifies an SNMP password. The maximum length is 15 alphanumeric characters, which includes letter A to Z, letters a to z, digits 0 to 9, underscore (_), and hyphen (-). The first character does not have to be a letter.  
  - **ro**—The password has read-only capability. The system supports a maximum of 5 **ro** passwords.  
  - **rw**—The password has read and write capabilities. The system supports a maximum of 5 **rw** passwords.  
- **host-ipaddress**—IP address of the server. Enable at least one host. The system supports a maximum of 5 hosts.  
- **community-string**—Specifies an SNMP password. The maximum length is 15 alphanumeric characters. This password does not have to be the same as those defined with the **snmp-server community** command.  
- **contact-string**—(Optional) Specifies SNMP server contact information. Maximum length is 31 alphanumeric characters. This value sets the MIB’s sysContact string. Enclose the text in double quotes (“ “).
Verifying the Enabling of the SNMP Agent, Passwords, and Trap Server

Use the `show snmp configuration` command in Cisco Unity Express EXEC mode to display the SNMP agent status and passwords.

The following example shows output from the `show snmp configuration` command:

```
se-10-0-0-0# config t
Enter configuration commands, one per line.  End with CNTL/Z.
se-10-0-0-0(config)# snmp-server community myaccess rw
se-10-0-0-0(config)# snmp-server community iminhere ro
se-10-0-0-0(config)# snmp-server enable traps
se-10-0-0-0(config)# snmp-server host 172.16.160.224 bigtraps
se-10-0-0-0(config)# snmp-server contact "Dial 71111 for system operator"
se-10-0-0-0(config)# snmp-server location "Bldg A NYC"
se-10-0-0-0(config)# end

se-10-0-0-0# show snmp configuration
Contact:              Dial 71111 for system operator
Location:             Bldg A NYC
Community 1 RO:       iminhere
Community 1 RW:       admin_main
Community 2 RW:       myaccess
Traps:                enabled
Host Community 1:     172.16.160.224 bigtraps
cueShutdownRequest:   disabled
se-10-0-0-0#
```

Setting Threshold Values for Subscriber Responses

Tracking spikes in the number of failures that occur within a short period of time for certain subscriber actions helps to identify possible security breaches in the system.

Each subscriber action has a default threshold value. Use the commands in this section if you want to change the default values.
Cisco Unity Express supports setting thresholds for the number of failures in a 5-minute interval for the following subscriber actions:

- Logging in.
- Entering a password.
- Entering a personal identification number (PIN) user ID.
- Entering a PIN password.
- Resetting a PIN.

When the number of attempts reaches the action’s threshold, the system sends a notification to the SNMP host.

**Prerequisites**

Be sure that the appropriate MIBs are installed. See the *Cisco Unity Express SNMP MIB Support* guide for details.

**Required Data for This Procedure**

Number of times the following can occur before the system sends a notification to the SNMP host:

- Password errors (default is 30)
- Login errors (default is 30)
- PIN password errors (default is 30)
- PIN resets (default is 5)
- PIN user ID errors (default is 30)

**SUMMARY STEPS**

1. `config t`
2. (Optional) `notification security login user threshold`
3. (Optional) `notification security login password threshold`
4. (Optional) `notification security pin uid threshold`
5. (Optional) `notification security pin password threshold`
6. (Optional) `notification security pin reset threshold`
7. `end`
8. `copy running-config startup-config`
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td><code>notification security login user threshold</code></td>
<td>(Optional) Sets the number of invalid login names within a 5-minute interval to <code>threshold</code>. If the number of failures exceeds this value, the system sends a notification to the SNMP host. The default value is 30. Valid values are 0 to 999.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# notification security login user 10</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td><code>notification security login password threshold</code></td>
<td>(Optional) Sets the number of invalid login passwords within a 5-minute interval to <code>threshold</code>. If the number of failures exceeds this value, the system sends a notification to the SNMP host. The default value is 30. Valid values are 0 to 999.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# notification security login password 6</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td><code>notification security pin uid threshold</code></td>
<td>(Optional) Sets the number of invalid PIN user IDs within a 5-minute interval to <code>threshold</code>. If the number of failures exceeds this value, the system sends a notification to the SNMP host. The default value is 30. Valid values are 0 to 999.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# notification pin uid 12</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td><code>notification security pin password threshold</code></td>
<td>(Optional) Sets the number of invalid PIN passwords within a 5-minute interval to <code>threshold</code>. If the number of failures exceeds this value, the system sends a notification to the SNMP host. The default value is 30. Valid values are 0 to 999.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# notification security pin password 8</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td><code>notification security pin reset threshold</code></td>
<td>(Optional) Sets the number of PIN password resets within a 5-minute interval to <code>threshold</code>. If the number of resets exceeds this value, the system sends a notification to the SNMP host. The default value is 5. Valid values are 0 to 999.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# notification security pin reset 3</code></td>
<td></td>
</tr>
</tbody>
</table>
Verifying the SNMP Login and PIN Notification Thresholds

Use the `show notification configuration` command in Cisco Unity Express EXEC mode to display the SNMP login and password notification thresholds.

The following example shows output from the `show notification configuration` command:

```
se-10-0-0-0# config t
Enter configuration commands, one per line. End with CNTL/Z.
se-10-0-0-0(config)# notification security login user 10
se-10-0-0-0(config)# notification security login password 6
se-10-0-0-0(config)# notification security pin uid 12
se-10-0-0-0(config)# notification security pin password 8
se-10-0-0-0(config)# notification security pin reset 3
se-10-0-0-0(config)# end
se-10-0-0-0# show notification configuration
Login user threshold:         10    (errors within a 5 minute interval)
Login password threshold:     6     (errors within a 5 minute interval)
PIN uid threshold:            12    (errors within a 5 minute interval)
PIN password threshold:       8     (errors within a 5 minute interval)
PIN reset threshold:          3     (resets within a 5 minute interval)
```

Enabling Cisco Unity Express Shutdown Requests

Enabling shutdown requests allows the Cisco Unity Express module to be gracefully halted. For example, suppose an uninterruptible power supply (UPS) sends a power out alert to the Cisco Unity Express management application. The management application would send an SNMP shutdown request to bring down the Cisco Unity Express module while power is still supplied from the UPS.

For security reasons, the shutdown capability is disabled by default.

To reset the Cisco Unity Express module, use the `service-module service-engine slot/port reset` command on the router housing the module.

Prerequisites

Be sure that the appropriate MIBs are installed. See the Cisco Unity Express SNMP MIB Support guide for details.
### Configuring SNMP Monitoring

#### Enabling Cisco Unity Express Shutdown Requests

**SUMMARY STEPS**

1. `config t`
2. `snmp-server enable cueShutdownRequest`
3. `end`
4. `copy running-config startup-config`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0# config t</code></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td><code>snmp-server enable cueShutdownRequest</code></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# snmp-server enable cueShutdownRequest</code></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td><code>end</code></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# end</code></td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td><code>copy running-config startup-config</code></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0# copy running-config startup-config</code></td>
</tr>
</tbody>
</table>

#### Verifying the Enabling of Shutdown Requests

Use the `show snmp configuration` command in Cisco Unity Express EXEC mode to display the status of the shutdown request capability.

The following example shows output from the `show snmp configuration` command:

```
se-10-0-0-0# show snmp configuration
Contact: Dial 71111 for system operator
Location: Bldg A NYC
Community 1 RO:  iminhere
Community 1 RW:  admin_main
Community 2 RW:  myaccess
Traps:  enabled
Host Community 1:  172.16.160.224 bigtraps
cueShutdownRequest enabled
se-10-0-0-0#
```
Configuring Broadcast Messages

Overview of Broadcast Messages

Cisco Unity Express permits sending broadcast messages to local and remote network locations. Cisco Unity Express permits subscribers with the broadcast privilege to send local and network broadcast messages. Subscribers obtain this privilege as members of a group that has the broadcast privilege.

Sending a broadcast message is available through the Cisco Unity Express telephone user interface (TUI).

The broadcast message sender has the option to re-address, re-record, and review the message before sending it out. The sender also can set the start and end times for the message and the number of days the broadcast message plays before the system deletes it. The maximum life of a broadcast message is 365 days. The default message lifetime is 30 days.

The sender can include any or all of the remote locations configured on the local system. The remote addresses can be location numbers or location names. When using the location name, the number of matches may resolve into several locations. If the number of locations is less than or equal to 4, the system gives the sender the option to select the exact location. If the number of matches is greater than 4, the sender has to enter more letters to narrow the search.
Configuring Broadcast Messages

All subscribers at the remote location receive the broadcast message. The recipients hear the message immediately after logging in to their voice mailboxes. The recipients cannot interrupt the message with any DTMF key. Recipients can save or delete the broadcast message; they cannot reply or forward a broadcast message.

The system administrator at each location determines how or when the message waiting indicator (MWI) lights up.

It is possible for the MWI lights to turn on for a broadcast message on some systems but not for others.

Configuring Broadcast Messages

Perform the following procedures to configure broadcast messages:

- Configuring a Group with Broadcast Privileges, page 146.
- Configuring the Broadcast Message Length and Expiration Time, page 146

Configuring a Group with Broadcast Privileges

Use the following EXEC mode command to configure a group with broadcast privileges:

```
group group-name privilege broadcast
```

where `group-name` is the set of subscribers who will have the capability of creating and sending broadcast messages.

The following example assigns the broadcast privilege to a group named managers:

```
se-10-0-0-0# group managers privilege broadcast
```

Configuring the Broadcast Message Length and Expiration Time

Use the following procedure to configure the local system for broadcast messages.

Required Data for This Procedure

The following information is required to configure the broadcast message length and expiry time:

- Broadcast message length, in seconds
- Broadcast message expiry time, in days

SUMMARY STEPS

1. `config t`
2. `voicemail broadcast recording time broadcast-length`
3. `voicemail default broadcast expiration time broadcast-days`
4. `exit`
**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong></td>
</tr>
</tbody>
</table>
| **Example:** | se-10-0-0-0# config t  
se-10-0-0-0(config)# | |
| **Step 2** | **voicemail broadcast recording time broadcast-length** | Specifies the maximum length of broadcast messages, in seconds. Valid values are 10 to 3600. |
| **Example:** | se-10-0-0-0(config)# voicemail broadcast recording time 120 | |
| **Step 3** | **voicemail default broadcast expiration time broadcast-days** | Specifies the number of days to store broadcast messages. The maximum value is 365 days. |
| **Example:** | se-10-0-0-0(config)# voicemail default broadcast expiration time 90 | |
| **Step 4** | **exit** | Exits configuration mode. |
| **Example:** | se-10-0-0-0(config)# exit  
se-10-0-0-0# | |

**Examples**

The following example sets the broadcast message length to 20 seconds and the expiration time to 2 days.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# voicemail broadcast recording time 20
se-10-0-0-0(config)# voicemail default broadcast expiration time 2
se-10-0-0-0(config)# exit
```

**Enabling the MWI Lights for Broadcast Messages**

Use the following Cisco Unity Express configuration mode command to enable MWI when a voice mailbox receives a broadcast message.

```
voicemail broadcast mwi
```

The following example illustrates enabling the MWI lights for broadcast messages:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# voicemail broadcast mwi
se-10-0-0-0(config)# end
```
Displaying Broadcast Messages

Several commands are available to display information about broadcast messages.

Displaying Current Broadcast Messages

Use the following EXEC mode command to display broadcast messages:

```
show voicemail broadcast messages
```

The output for this command may appear similar to the following:

```
se-10-0-0-0# show voicemail broadcast messages
Message ID: JMX0824L4R4-NM-FOC08221WSQ-1103139552166-NBCM
Sender: 1005@nyc.mycompany.com
Length(secs): 10
Start time: 21:12:54 Nov 23 2005 PST
End time: 11:48:06 Dec 4 2005 PST

Message ID: JMX0824L4R4-NM-FOC08221WSQ-1103084723247-NBCM
Sender: /sw/local/users/user45
Length(secs): 30
Start time: 08:41:09 Dec 7 2005 PST
End time: 09:00:00 Jan 3 2006 PST
```

If a subscriber at a remote network location sends the broadcast message, the e-mail domain of the remote sender appears in the Sender field. If a local subscriber sends the message, the pathname to the sender appears in the field.

If no broadcast messages are active, the output may appear like this:

```
se-10-0-0-0# show voicemail broadcast messages
No Broadcast Messages
```

Displaying Broadcast Messages Received Per Mailbox

The following command is modified to display broadcast message information:

```
show voicemail mailboxes
```

The column BCST displays the number of broadcast messages received by the mailboxes. The output for this command may appear similar to the following:

```
se-10-0-0-0# show voicemail mailboxes
OWNER MSGS NEW SAVE DEL BCST MSGTIME MBXSIZE USED
user1 16 16 0 0 0 4 3000 3000 100%
user2 16 16 0 0 0 4 3000 3000 100%
user3 16 16 0 0 0 4 3000 3000 100%
user4 16 16 0 0 0 4 3000 3000 100%
```

Displaying Broadcast Messages Received by the Voice-Mail System

The following command is modified to display broadcast message information:
show voicemail usage

The row broadcast message count displays the number of broadcast messages received by the voice mail system. The output for this command may appear similar to the following:

se-10-0-0-0# show voicemail usage

personal mailboxes: 120
general delivery mailboxes: 0
orphaned mailboxes 0
capacity of voicemail (minutes): 6000
allocated capacity (minutes): 6000.0
total message time used (seconds): 7543
total message count: 7001
average message length (seconds): 1.0774175117840308
broadcast message count: 4
future message count: 0
networking message count: 0
greeting time used (seconds): 3
greeting count: 1
average greeting length (seconds): 3.0
total time used (seconds): 7546
total time used (minutes): 125.7667022705078
percentage time used (%): 2
messages left since boot: 0
messages played since boot: 0
messages deleted since boot: 0

Deleting a Broadcast Message

Use the following EXEC mode command to delete a broadcast message:

voicemail broadcast message message-id delete

where message-id is the coded identifier for the message. Use the show voicemail broadcast messages command to obtain the message ID.

The following example deletes a broadcast message:

se-10-0-0-0# voicemail broadcast message JMX0824L4R4-NM-FOC08221WSQ-1103139552166-NBCM delete

Changing Broadcast Message Start and End Times

Use the following EXEC mode commands to change the start and end times of a broadcast message:

voicemail broadcast message message-id starttime time date

voicemail broadcast message message-id endtime time date

where message-id is the coded identifier for the message, time is the time in the 24-hour clock format, and date has the format YYYY-MM-DD. Use the show voicemail broadcast messages command to obtain the message ID.

The following examples change the start and end times for a broadcast message:

se-10-0-0-0# voicemail broadcast message JMX0824L4R4-NM-FOC08221WSQ-1103139552166-NBCM starttime 10:00 2004-09-15
Disabling Broadcast Privileges for a Group

Use the following EXEC mode command to remove the broadcast privileges from a group:

```
no group groupname privilege broadcast
```

where `groupname` is the group to have the broadcast privileges removed.

The following example disables the broadcast privilege for the group named managers:
```
se-10-0-0-0# no group managers privilege broadcast
```

Disabling MWI Lights for Broadcast Messages

Use the following Cisco Unity Express configuration mode command disable MWI for broadcast messages.

```
no voicemail broadcast mwi
```

The following example illustrates disabling the MWI lights for broadcast messages:
```
se-10-0-0-0# config t
se-10-0-0-0(config)# no voicemail broadcast mwi
se-10-0-0-0(config)# end
```

Configuring the Local-Broadcast Privilege

Cisco Unity Express provides a local-broadcast privilege that permits subscribers to send broadcast messages only to other subscribers on the local system. The local-broadcast privilege is a subset of the broadcast privilege, which permits subscribers to send broadcast messages to all configured subscribers and locations on the network.

Cisco Unity Express does not create a default group for local-broadcast subscribers. The administrator must create a group of subscribers and assign the local-broadcast privilege to it.

This feature is available on Cisco Unity Express modules NM-CUE-EC, NM-CUE, and AIM-CUE.

To configure this option from the GUI, use the Configure > Groups option and select a group.

Prerequisites

Name of the group that will be assigned to the local-broadcast privilege. Verify that the group exists before assigning the privilege.

SUMMARY STEPS

1. `config t`
2. `groupname groupname privilege local-broadcast`
3. `end`
4. (Optional) `show groups privileges`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> groupname groupname privilege local-broadcast</td>
<td>Assigns the local-broadcast privilege to the group groupname.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# groupname engineers privilege local-broadcast</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> end</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# end</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> show groups privileges</td>
<td>(Optional) Displays the privileges assigned to configured groups.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# show groups privileges</td>
<td></td>
</tr>
</tbody>
</table>

**Example**

The following example displays the privileges for several groups.

```
se-10-0-0-0# show groups privileges
GROUPID                        PRIVILEGES
Administrators                superuser ManagePrompts ManagePublicList
Administrators                ViewPrivateList
Broadcasters                  broadcast
managers                      broadcast ViewPrivateList
engineers                     local-broadcast
```
Configuring Integrated Messaging

Overview of IMAP

Integrated messaging on Cisco Unity Express is the convergence feature for voicemail and e-mail systems. It allows subscribers to have an integrated view of their e-mails and voice-mail messages from a single e-mail client using IMAP Version 4 rev1.

This feature is supported only on NM-CUE and NM-CUE-EC.

Subscribers can delete voice-mail messages or mark them as read or unread in a manner similar to e-mail messages.

The voice-mail messages are downloaded as attachments to e-mail messages. Subscribers can access the voice-mail messages over the network or can download them selectively. If the messages are downloaded, subscribers can play them locally using standard media players without requiring a connection to Cisco Unity Express.

Accessing voice-mail messages from general delivery mailboxes (GDMs) is not supported.

To access this feature, subscribers must be configured with the vm-imap privilege.

Note: The Cisco Unity Express module cannot be used as an SMTP server for sending and receiving e-mails.
**IMAP Server**

The IMAP server must be enabled on Cisco Unity Express before the server allows e-mail clients to connect. The feature can be enabled in the following modes:

- **Non-SSL**
  
  Non-SSL is the least secure mode.

- **SSL**

- **Mixed**

  This mode allows both SSL and non-SSL connections.

If you change the connection mode on the IMAP server, verify the configuration on the clients, which may need to be changed to match the IMAP server configuration.

The maximum number of simultaneous IMAP connections is configurable up to 50.

Any changes to the IMAP configuration require a restart of the IMAP server. You can restart the IMAP server using the `enable (IMAP)` command-line interface (CLI) command or a graphical-user interface (GUI) option.

**E-mail Client Considerations**

The following e-mail clients are supported:

- Microsoft Outlook 2003
- Microsoft Outlook 2002
- Microsoft Outlook 2000
- Microsoft Outlook Express 6.0
- IBM Lotus Notes 6.5
- IBM Lotus Notes 6

**Note**: See the client documentation for their procedures for establishing connections to an IMAP server.

To connect to Cisco Unity Express, configure the e-mail client to accept the user ID and password of the Cisco Unity Express subscriber.

**Note**: Subscribers cannot use the numeric PIN to log in to Cisco Unity Express through the e-mail client.

If this feature is enabled in SSL mode only, verify that the e-mail client is configured to use SSL connections to the IMAP server.

The same subscriber can connect to Cisco Unity Express from one or more e-mail clients using one or more connection types (SSL or non-SSL). Each session counts against the maximum number of connections allowed to the IMAP server.

Subscribers cannot retrieve the following types of messages from their personal mailboxes:
Broadcast messages
Private messages

The voice-mail messages are downloaded as .wav attachments to the Inbox folder of the e-mail clients. If a subscriber receives a new message or saves a voice-mail message in the Inbox folder, the Cisco Unity Express retains the message in its database. If mandatory message expiry is enabled on Cisco Unity Express, the message is subject to the expiry timer.

If a subscriber moves a voice-mail message from the Inbox folder to another folder on the e-mail client, Cisco Unity Express deletes the message from its database. Mandatory message expiry would not affect that message.

Note
Mandatory message expiry is not enforced on e-mail clients but is enforced on messages in the Cisco Unity Express database.

Cisco Unity Express supports the following operations on the e-mail clients:

- Mark Read/Unread

  The Mark Read operation on the e-mail client is equivalent to Message Save on the voice-mail system. Similarly, the Mark Unread on the e-mail client is equivalent to the Mark New on the voice-mail system.

- Delete/Undelete

- Expunge (Purge)

Errors displayed on the e-mail clients are dependent on the client implementation. See the client documentation for more information.

Configuring Integrated Messaging

Follow this procedure to configure the Integrated Messaging capability.

Prerequisites

The system must have a default security certificate and private key installed before SSL connections are permitted on Cisco Unity Express. Use the `show crypto key` command to display the system default certificate-key pair. If no default pair exists, follow the procedure in “Configuring Security” on page 133.

Required Data for This Procedure

Name of a subscriber group that has the vm-imap privilege.

SUMMARY STEPS

1. `config t`
2. `service imap`
3. `enable`
4. `maxsessions num-sessions`
5. `session idletimeout minutes`
6. `session security {ssl | none | mixed}`
7. `enable`
8. `no enable`

**Note** Any changes to IMAP server configuration require a restart of the IMAP server for the changes to take effect. Steps 7 and 8 restart the IMAP server.

9. `end`
10. `groupname groupname privilege vm-imap`
11. `username username group groupname`
12. `end`
13. (Optional) `show imap configurations`
14. (Optional) `show imap sessions`

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td><code>service imap</code></td>
<td>Enters Integrated Messaging configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config)# service imap</code></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td><code>enable</code></td>
<td>Enables the Integrated Messaging feature on a system-wide basis.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config-imap)# enable</code></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td><code>maxsessions num-sessions</code></td>
<td>Specifies the maximum number of concurrent IMAP client sessions. Valid values are 1 to 50. Default is 50.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config-imap)# maxsessions 25</code></td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td><code>session idletimeout minutes</code></td>
<td>Specifies the number of minutes an IMAP session can be idle. After this maximum is reached, the system automatically disconnects the session. Valid values are 30 to 120 minutes. The default is 30 minutes.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><code>se-10-0-0-0(config-imap)# session idletimeout 45</code></td>
<td></td>
</tr>
</tbody>
</table>
### Configuring Integrated Messaging

#### Command or Action

| Step 6 | session security \{ssl | none | mixed\} |
|--------|-----------------------------------------------|
| **Example:** | se-10-0-0-0(config-imap)# session security ssl |

**Purpose:** Specifies the type of IMAP connections accepted from IMAP clients. Any IMAP client trying to make any other type of connection will be rejected.

- **ssl**—Only SSL connections are permitted.
- **none**—Only non-SSL connections are permitted.
- **mixed**—Both SSL and non-SSL connections are permitted.

**Note** The system displays an error message if the certificate-key pair are not configured as the system default before configuring SSL connections for the IMAP client. See “Configuring Security” on page 133 to set the certificate-key pair.

#### Step 7

**end**

**Example:**

se-10-0-0-0(config-imap)# end

**Purpose:** Exits Integrated Messaging configuration mode

#### Step 8

**groupname** groupname **privilege** vm-imap

**Example:**

se-10-0-0-0(config)# groupname sales privilege vm-imap
se-10-0-0-0(config-imap)# groupname imap-users privilege vm-imap

**Purpose:** Specifies an existing group that will have access to the Integrated Messaging capability. Repeat this step if more than one group will have Integrated Messaging access.

#### Step 9

**username** username **group** groupname

**Example:**

se-10-0-0-0(config)# username user4 group sales

**Purpose:** Assigns a subscriber to the group.

#### Step 10

**end**

**Example:**

se-10-0-0-0(config)# end

**Purpose:** Exits configuration mode.

#### Step 11

**show imap configurations**

**Example:**

se-10-0-0-0# show imap configuration

**Purpose:** (Optional) Displays all Integrated Messaging configuration parameters.

#### Step 12

**show imap sessions**

**Example:**

se-10-0-0-0# show imap sessions

**Purpose:** (Optional) Displays all active Integrated Messaging sessions.
Examples

The following example shows sample output from the `show imap configuration` command.

```
se-10-0-0-0# show imap configuration

Status: enabled
Idle Timeout (minutes) 45
Max Sessions: 25
Security Mode: ssl
```

The following example shows sample output from the `show imap sessions` command.

```
se-10-0-0-0# show imap sessions

+-------------------+-------------------+----------------------+
<table>
<thead>
<tr>
<th>Sessions</th>
<th>IP Address</th>
<th>Connect Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.21.82.244</td>
<td>Wed Nov 16 07:35:02 CST 2005</td>
</tr>
<tr>
<td>2</td>
<td>172.18.10.10</td>
<td>Wed Nov 16 08:23:15 CST 2005</td>
</tr>
<tr>
<td>3</td>
<td>172.18.10.5</td>
<td>Wed Nov 16 10:11:40 CST 2005</td>
</tr>
</tbody>
</table>
```

Displaying IMAP Sessions

To display IMAP sessions, see “Monitoring Active IMAP and VoiceView Express Sessions” on page 251.
Configuring Message Notification

Overview of Message Notification

Cisco Unity Express 2.3 provides several options for notifying subscribers of new messages in their voice mailboxes.

The system generates notifications for all types of messages, including nondelivery receipts (NDRs), when the messages arrive in a subscriber's mailbox. Delayed delivery receipts (DDRs), broadcast messages, and existing messages marked as new do not generate notifications.

The system generates a notification when a new voice-mail message arrives in a subscriber's mailbox. These notifications can be sent to the following devices:

- Cell phone
- Home phone
- Work phone
- Numeric pager
- Text pager
- E-mail inbox

Each device has a configurable schedule during which notifications can be received. For phone devices (work phone, home phone, and cell phone), the subscriber has the option to disable notification or to log in to the mailbox during the notification call.

To configure this feature from the GUI, use the Voice Mail > Message Notification option.
A notification profile contains the configuration settings for each subscriber or group. See “Notification Profile” on page 160 for more information about the notification profile.

Configuring the message notification features requires setting several system-wide parameters. See “System-Wide Message Notification Settings” on page 160 for the procedure to set these parameters.

Sending and receiving message notifications differs by device type. See “Sending and Receiving Message Notifications” on page 165 for a description of these processes.

After configuring the system-wide parameters, configure the parameters for the subscribers and groups who will have access to the message notification feature. See “Configuring Message Notification for Devices” on page 173 for these procedures.

## Notification Profile

Cisco Unity Express 2.3 provides a default notification profile for each subscriber and group that has a voice mailbox. The notification profile contains configuration information for message notification, such as a device type, phone number or e-mail address, notification preference, and notification schedule. Each subscriber or group can have one or more of the supported devices configured in the notification profile. After the profile information is configured, the subscriber or group will receive message notifications.

The default profile name is `vm-notif-profile`. This name cannot be changed or deleted.

## Message Notification Settings

Configuring Message Notification requires the following procedures:

- Configuring system-wide settings
- Configuring subscriber- and device-specific settings

## System-Wide Message Notification Settings

Message notifications for the whole system use the following settings:

- **Enabling the feature**—Message notification is disabled by default for all subscribers and groups. Enable the feature on a system-wide basis or for specific subscribers or groups. The feature is available for all subscribers and groups who have a mailbox.

  The first time the administrator enables the feature system-wide, the feature remains disabled for all subscribers and groups. If specific subscribers or groups are to have access to message notification, the administrator can enable the feature for those subscribers or groups on an individual basis.

  If the feature is disabled on a system-wide basis, the feature becomes disabled for all subscribers and groups. However, the system does not delete the device settings for the subscribers and groups. When the feature is enabled again, the system restores the settings for the subscribers and groups as they were before the system-wide disabling.

  If the feature is enabled system-wide and the administrator adds a new subscriber or group, the feature is disabled for that subscriber or group.

  If no SMTP server is configured when the feature is enabled system-wide, the system generates a warning message indicating that e-mail and text pager notifications will not work.
• Notification preference—The administrator can set the type of messages for which notifications will be sent: all messages or urgent messages. Urgent is the default. The administrator can change the preference for specific subscribers or groups to a value other than the system-wide setting.

  If the system-wide preference is set to “all,” the administrator can set the preference for a specific subscriber or group to either “all” or “urgent.” If the system-wide preference is set to “urgent,” the preference for a specific subscriber or group is only “urgent.”

  If the administrator changes the system-wide preference from “all” to “urgent,” the system changes the preference to “urgent” for all subscribers and groups.

  If the administrator changes the system-wide preference from “urgent” to “all,” the system does not change the preference for those subscribers or groups who were configured on an individual basis.

• Voice message attachments—This setting permits a voice message to be attached to a notification sent to an e-mail inbox. Notification attachments are disabled by default so that voice messages are not attached to the notification e-mail. The administrator can change this setting for specific subscribers or groups to a value other than the system-wide setting.

  If attachments are enabled system-wide, you can change the setting for a specific subscriber or group to enabled or disabled. If attachments are disabled system-wide, the attachments setting for a specific subscriber or group also is disabled.

  The system never attaches a private message to notification e-mails, regardless of this setting.

  If the administrator changes this system-wide setting from enabled to disabled, the system changes the setting to disabled for all subscribers and groups.

  If the administrator changes this system-wide setting from disabled to enabled, the system does not change the preference for those subscribers or groups who were configured on an individual basis.

• Connection timeout—This variable specifies the number of seconds a notification call will attempt to connect before the system disconnects the call and treats the call as failed. This option is available only to phone devices and numeric pagers. The range of values is 12 seconds to 96 seconds. The default value is 48 seconds.

• Logging into voice mail during an outcall—This variable permits the subscriber to log in to voice mail when answering a notification call. This option is available only for phone devices.

  If the option is enabled, the system provides the subscriber with an option to log in to voice mail to retrieve the message. If the option is disabled, the system plays a notification prompt three times before disconnecting the notification call. The system default is disabled.

• Restriction table—The restriction table controls the phone numbers that subscribers can use to send message notifications. These restrictions are available only for phone devices and numeric pagers.

  The system provides a predefined table that can be modified by the administrator. The table applies to all subscribers and groups on the system. A typical use of this table is to prevent the use of long-distance or international numbers for message notifications.

  The system checks the restriction table when the subscriber is assigning phone numbers to phone devices (such as a cell phone, home phone, or work phone), to a numeric pager, and before making an outcall. If a phone number is listed in the table as restricted, the system sends a message to the subscriber.

  If a subscriber has a number configured for a device and the administrator later restricts that number system-wide, notification calls will not be made to that number. The administrator must remove the number for the individual subscriber.

   Cisco Unity Express provides a default restriction table that defines two requirements:

   - Minimum and maximum number of digits, including access codes, allowed in a phone number. The minimum is 1 digit and the maximum is 30 digits. The default is 1 digit.
- A maximum of 10 dial strings that represent the restricted numbers. Each string consists of a call pattern and a setting that specifies if a phone number matching the pattern is restricted or not.

Valid patterns can include digits 0 to 9, asterisk (*), and dot (.). The * indicates a match of zero or more digits. Each dot serves as a placeholder for 1 digit.

Valid setting values are allowed or disallowed.

When a subscriber tries to set up or change a phone number assigned to a device, the system verifies that the number has the allowed number of digits. If it does not, the subscriber receives a system message.

If the number of digits is acceptable, the system checks the number against the dial patterns in the restriction table, starting with the first pattern (preference 1). If the number does not match the first pattern, the system checks the next pattern in the table (preference 2), and so forth until a match is found. The system either permits or restricts the call as specified in the dial string.

The default restriction table permits all phone numbers to be used, as shown in Table 15.

<table>
<thead>
<tr>
<th>Preference</th>
<th>Call Pattern</th>
<th>Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*</td>
<td>Yes</td>
</tr>
</tbody>
</table>

You can change only the preference and permission of this pattern.

The restriction table can contain identical dial strings, which have the same call pattern and permission setting. This includes the default pattern. You can delete any of these dial strings if the table contains at least one default pattern.

Table 16 illustrates a restriction table with international numbers and restricted numbers.

<table>
<thead>
<tr>
<th>Preference</th>
<th>Call Pattern</th>
<th>Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9011*</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>91...........</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>*</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 17 illustrates a restriction table that permits one number in an area code but restricts all other numbers in that area code.

<table>
<thead>
<tr>
<th>Preference</th>
<th>Call Pattern</th>
<th>Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9011*</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>912225550150</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>91222.......</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>*</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Configuring Message Notification

SMTP server setup—Sending notifications to a subscriber’s e-mail or text messages to text pagers requires an SMTP server. The administrator must configure an external SMTP server address for Cisco Unity Express to use to send the text notifications. The SMTP server address can be the hostname or IP address. To use the hostname, verify that the DNS server is configured.

If the SMTP server requires a user ID and password for authentication, the administrator must configure the user ID and password on Cisco Unity Express software.

From address for outgoing e-mails—E-mail messages and notifications sent out by Cisco Unity Express display the address hostname@domain in the From field, where hostname is the hostname configured for Cisco Unity Express and domain is the domain name configured for Cisco Unity Express. The administrator can configure a more descriptive e-mail address to use in this field. Maximum length is 128 characters.

Subscriber and Device-Specific Settings

Subscribers are able to use the telephone user interface (TUI), graphical user interface (GUI), or VoiceView Express to specify the phone devices and numeric pagers to which message notifications will be sent. Subscribers can use only the GUI or VoiceView Express to configure e-mail inboxes or text pagers to receive notifications.

The administrator can use the GUI, VoiceView Express, or the CLI procedures in this section to configure any supported device to receive notifications.

The following settings are available for configuring message notification:

- Phone number—The system dials this number when a mailbox receives a new message. The number consists only of digits 0 to 9; no other characters or pauses are permitted. Include any access codes as part of the phone number.
  This setting is not available for e-mail inboxes and text pagers.
  If the phone number is removed, the system disables the device.

  The administrator configures a restriction table that controls what phone numbers are allowed for message notification. See “System-Wide Message Notification Settings” on page 160 for information on restriction tables.

- Extra digits—The system dials these digits after the phone number when the outgoing call is answered. The system treats these digits as DTMF digits from Cisco Unity Express to the called device.
  The result of these digits depends on the called device. For example, the digits appear on the display of a numeric pager.
  Extra digits can consist of digits 0 to 9, pound or hash (#), asterisk (*), and plus (+). The plus sign is used to insert a 1-second pause. The maximum number of extra digits is 64.
  This setting is not available for e-mail inboxes or text pagers.

- To—This setting is the e-mail address that receives the message notification. The maximum number of characters in the e-mail address is 129.
  This setting is available only to e-mail inboxes and text pagers.
  If the e-mail address is removed, the system disables the device.

- Text—This is the content of the text message, which appears in the body of the e-mail or as a text page on the text pager. The maximum number of characters in the message is 128.

- Attach to e-mail—If this setting is enabled, the system attaches a new voice message as a .wav file to the message notification e-mail. The .wav file format is G711 mu-law 8KHz 8-bit mono.
Configuring Message Notification

This setting is available only to e-mail inboxes.

The setting is disabled by default so that no voice messages are attached to message notifications.

The system never attaches a private message to notification e-mails, regardless of this setting.

The system-wide attachment setting takes precedence over the individual subscriber or group setting. If the administrator disables the e-mail attachment setting system-wide, then subscribers cannot enable the setting on their devices.

If the administrator changes this system-wide setting from disabled to enabled, the system does not change the preference for those subscribers or groups who were configured on an individual basis.

- Enabling the device—The subscriber or administrator must enable the devices to receive message notifications. Phone devices and numeric pagers require a valid phone number to be enabled. E-mail inboxes and text pagers require a valid e-mail address to be enabled.

If the administrator changes the system-wide setting to disabled, the subscriber cannot enable any device. The subscriber can enable a device only if the system-wide setting is enabled.

- Notification preference—The subscriber or administrator can set the type of messages for which notifications will be sent: all messages or urgent messages. Urgent is the default.

The system-wide attachment setting takes precedence over the individual subscriber or group setting. If the administrator changes the system-wide preference from “all” to “urgent,” subscribers cannot enable the setting on their devices.

- Notification schedule—The subscriber or administrator can set a schedule that activates the notification feature for a specific device. Time slots are available 24 hours a day for any day of the week in half-hour increments.

The default schedule is Monday through Friday, 8:00 am to 5:00 p.m.

If new messages arrive when the device is inactive, the system does not send a notification for them even if the messages are in a “new” state when the next active time slot occurs.

Options and Settings

Table 18 lists the settings and options available for configuring the message notification feature and whether the setting or option defines a condition for the entire system or for individual subscribers or groups. Additionally, the table indicates the interface where the settings or options can be configured.

**Table 18 Message Notification Settings**

<table>
<thead>
<tr>
<th>Setting or Option</th>
<th>Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>System-Wide</td>
<td>CLI</td>
</tr>
<tr>
<td>Enabling notification</td>
<td>x</td>
</tr>
<tr>
<td>Notification preference</td>
<td>x</td>
</tr>
<tr>
<td>Voice message attachment</td>
<td>x</td>
</tr>
<tr>
<td>Connection timeout</td>
<td>x</td>
</tr>
<tr>
<td>Mailbox login during outcall</td>
<td>x</td>
</tr>
<tr>
<td>Restriction table</td>
<td>x</td>
</tr>
<tr>
<td>SMTP server setup</td>
<td>x</td>
</tr>
<tr>
<td>From-address</td>
<td>x</td>
</tr>
</tbody>
</table>
Sending and Receiving Message Notifications

When a subscriber or GDM receives a new voice message, the system checks if message notification is enabled for that mailbox. If notification is disabled, the system does not generate any notifications.

If notification is enabled, the system checks for an enabled device and the notification schedule for that device. If the system finds an enabled device with permission to receive the notification at the time the message is received, the system sends the notification to the device. For a general delivery mailbox (GDM), the system notifies only the devices that are enabled rather than all members of the group.

Handling of the message notification depends on the device type, as described in the following sections:

- Notifications to Phone Devices, page 165
- Notifications to Numeric Pagers, page 166
- Notifications to E-mail Inboxes, page 166
- Notifications to Text Pagers, page 166

Notifications to Phone Devices

To notify a phone device, the Cisco Unity Express system calls the configured phone number. After the subscriber answers the call, the system sends any configured extra digits. The subscriber is presented with the option to log in to the mailbox using the mailbox ID and PIN (if this option is enabled) or disable notification to the device being called.

If the subscriber does not answer the call after the configured number of seconds, or if the device is busy, the system disconnects the call and does not retry calling the subscriber.

The recipient can turn off message notification for a phone device during the notification. If the recipient does that, the system leaves a message in the recipient’s mailbox stating that notification is turned off for that device.

<table>
<thead>
<tr>
<th>Setting or Option</th>
<th>Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>User or Group</td>
<td>x</td>
</tr>
<tr>
<td>Phone number</td>
<td>x</td>
</tr>
<tr>
<td>Extra digits</td>
<td>x</td>
</tr>
<tr>
<td>To</td>
<td>x</td>
</tr>
<tr>
<td>Text</td>
<td>x</td>
</tr>
<tr>
<td>Voice-mail attachment to e-mail</td>
<td>x</td>
</tr>
<tr>
<td>Enabling the device</td>
<td>x</td>
</tr>
<tr>
<td>Notification preference</td>
<td>x</td>
</tr>
<tr>
<td>Notification schedule</td>
<td>x</td>
</tr>
</tbody>
</table>

1. Except for e-mail inboxes and text pagers.
The administrator should be aware of notification loops. For example, subscriber A configures notifications to subscriber B, subscriber B configures notifications to subscriber C, and subscriber C configures notifications to subscriber A. The notifications could fill up the subscribers’ mailboxes. In such a case, the administrator should disable notification for one of the subscribers. This will stop the loop. The administrator can reenable notification for that subscriber.

Notifications to Numeric Pagers

To notify a numeric pager, the Cisco Unity Express system calls the configured phone number.

If the pager answers the call, the system sends any configured extra digits and disconnects the call. The extra digits appear on the pager display.

If the device does not answer the call after the configured number of seconds (connection timeout) or is busy, the system disconnects the call and does not retry calling the device.

Notifications to E-mail Inboxes

The system sends an e-mail message to the configured e-mail address for each new message received.

![Note] If no STMP server is configured, the system does not send e-mail notifications.

The subject of the e-mail message is “Message Notification.” The body of the e-mail message contains the message type, extension or user ID, message sender, and the message text configured by the sender. Following is a sample e-mail message:

Message Type: Urgent
Message for: userA
Message from: userB
Meeting scheduled at 2:00 pm today in conference room 3

If the option to attach a voice message is enabled, the system attaches the message as a .wav file. The .wav file format is G711 mu-law 8KHz 8-bit mono. The filename has the format VM_yyyy_mm_dd_hh_mm_ss.wav, where yyyy is the year, dd is the day, hh is the hour in 24-hour format, mm is the minutes, and ss is the seconds.

If the system cannot deliver the e-mail, the system does not generate a message delivery failure notification.

Notifications to Text Pagers

The system sends an e-mail message to the configured e-mail address and creates one text page for each new message received.

![Note] If no STMP server is configured, the system does not send text pager notifications.

The subject of the e-mail message is “Message Notification.” The body of the e-mail message contains the message type, extension or user ID, message sender, and the message text configured by the message recipient during notification setup. This text will be the same for all messages received by this subscriber.
Following is a sample e-mail message:
Message Type: Urgent
Message for: userA
Message from: userB
New voicemail for number 1122

If the system cannot deliver the e-mail, the system does not generate a message delivery failure notification.

**Configuring System-Wide Settings**

Follow this procedure to set the system-wide message notification settings.

**Required Data for This Procedure**

- User IDs or group names if a subset of subscribers or groups will have access to message notification
- Notification preference
- Number of seconds for the connection timeout
- If you want to add phone numbers to the restriction table:
  - Minimum and maximum number of digits in a dial-string
  - At least one dial-string pattern
- SMTP server hostname and authentication values (user ID and password or credential string)
- From-address for outgoing e-mails

**SUMMARY STEPS**

1. **config t**
2. **voicemail notification enable**
   
   If an SMTP server is not available, a message appears warning the administrator that e-mail and text pager notifications will not work.
3. (Optional) **voicemail notification preference** {all | urgent}
4. (Optional) **voicemail notification email attach**
5. (Optional) **voicemail notification connect-timeout** seconds
6. (Optional) **voicemail notification allow-login**
7. (Optional) **restriction msg-notification min-digits** minimum-digits
8. (Optional) **restriction msg-notification max-digits** maximum-digits
9. (Optional) **restriction msg-notification dial-string preference** preference-number pattern pattern-string {allowed | disallowed} [insert]
10. **smtp server address** {hostname | ip-address} authentication {none | username userid password password | credentials credential-string}
11. **voicemail configuration outgoing-email from-address** email-address
12. **end**
### Configuring Message Notification

13. `show voicemail notification`
14. `show voicemail notification restriction-table`
15. `show smtp server`
16. `show voicemail configuration`

#### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0# config t</code>&lt;br&gt;Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td><strong>voicemail notification enable</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0(config)# voicemail notification enable</code>&lt;br&gt;Enables voice message notification on a system-wide basis. This command must be executed before enabling the feature for any subscribers or groups.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>**voicemail notification preference {all</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td><strong>voicemail notification email attach</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0(config)# voicemail notification email attach</code>&lt;br&gt;(Optional) Enables subscribers to attach voice messages to outgoing notification e-mails. The system-wide default is disabled.</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td><strong>voicemail notification connect-timeout seconds</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0(config)# voicemail notification connect-timeout 60</code>&lt;br&gt;(Optional) Specifies the number of seconds after which an outgoing message notification call is disconnected and considered a failed call. Valid values are 12 to 96. The default is 48. This value applies only to phone devices and numeric pagers.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td><strong>voicemail notification allow-login</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0(config)# voicemail notification allow-login</code>&lt;br&gt;(Optional) Enables a subscriber to log in to voice mail during an outgoing notification call. The default is disabled. If enabled, the system provides the subscriber with an option to log into voice mail to retrieve the message.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td><strong>restriction msg-notification min-digits minimum-digits</strong>&lt;br&gt;<strong>Example:</strong>&lt;br&gt;<code>se-10-0-0-0(config)# restriction msg-notification min-digits 5</code>&lt;br&gt;(Optional) Specifies the minimum number of digits for a notification phone number. Valid values are 1 to 30. The default is 1. This value applies only to phone devices and numeric pagers.</td>
</tr>
</tbody>
</table>
## Command or Action

```
restriction msg-notification max-digits maximum-digits
```

### Example:

```
se-10-0-0-0(config)# restriction msg-notification max-digits 12
```

### Purpose

(Optional) Specifies the maximum number of digits for a restricted number. Valid values are 1 to 30. The default is 1. A system message appears if `max-digits` is a smaller value than `min-digits`.

This value applies only to phone devices and numeric pagers.
### Command or Action

Step 9  
`restriction msg-notification dial-string preference preference-number pattern pattern-string {allowed | disallowed} [insert]`

**Example:**

sequent-0-0-0(config)# restriction msg-notification  
dial-string preference 2 pattern 91222* disallowed  
sequent-0-0-0(config)# restriction msg-notification  
dial-string preference 2 pattern 91800* allowed insert

### Purpose

(Optional) Specifies the dial string that the system uses to verify a phone number assigned to a phone device or numeric pager. Use this command to add a new dial string to the restriction table or to modify an existing dial string.

- **preference-number**—Order of this string in the restriction table. The system searches the strings in order of preference, starting with 1. Valid values are 1 to 10.
  - The default pattern * has preference 1 by default. The administrator can modify this setting.

- **pattern-string**—Call pattern to be matched. Valid characters are digits 0 to 9, asterisk (*), or dot (.). The table accepts duplicate call patterns.
  - The default pattern * cannot be deleted or modified.

- **allowed**—Permits phone numbers with this pattern to be assigned to message notification devices.
  - The default pattern * is **allowed** by default. The administrator can modify this setting.

- **disallowed**—Prevents phone numbers with this pattern to be assigned to message notification devices.

- **insert**—(Optional) Inserts the dial string in the proper place in the table. The system increases the preference number of existing strings appropriately. The system displays a system message if the preference number is less than 1 or greater than 10.
  - If insert is not used, the system replaces any existing dial string with the given preference with this new dial string. The system displays a system message if no existing dial string has the given preference.
### Command or Action

**Step 10**

```
smtp server address (hostname | ip-address) authentication
    (none | username userid password password | credentials credential-string)
```

**Example:**

```
se-10-0-0-0(config)# smtp server address 10.10.5.5
    authentication none
se-10-0-0-0(config)# smtp server address authentication
    mainsmtp username server1 password pwd123
se-10-0-0-0(config)# smtp server address 172.16.1.1
    authentication credentials 3CmyKjEPhzkJd8QwCVjv552j2sjjzh3b5d8ZZNgd+y9J3xk2B35j0nfGWTHfmcPSd8ZZNgd+y9J3xk2B35j0nfG
```

**Purpose**

Configures an SMTP server, which is required for sending e-mail and text notifications.
- **hostname**—Hostname of the SMTP server.
- **ip-address**—IP address of the SMTP server.
- **none**—Indicates that the SMTP server does not require authentication.
- **userid**—Authentication user ID of the SMTP server.
- **password**—Authentication password of the SMTP server.
- **credential-string**—Authentication credential string for the SMTP server. Copy and paste this string from the running or startup configuration.

**Step 11**

```
voicemail configuration outgoing-email from-address email-address
```

**Example:**

```
se-10-0-0-0(config)# voicemail configuration outgoing-email from-address
    companyname@mycompany.com
```

**Purpose**

Configures an address to use in the From field of outgoing Cisco Unity Express e-mail messages.
- **email-address**—Name and domain name. Maximum length is 128 characters

**Step 12**

```
end
```

**Purpose**

Exits configuration mode.

**Step 13**

```
show voicemail notification
```

**Example:**

```
se-10-0-0-0# show voicemail notification
```

**Purpose**

Displays the configured message notification settings.

**Step 14**

```
show voicemail notification restriction-table
```

**Example:**

```
se-10-0-0-0# show voicemail notification restriction-table
```

**Purpose**

Displays the configured restriction table.

**Step 15**

```
show smtp server
```

**Example:**

```
se-10-0-0-0# show smtp server
```

**Purpose**

Displays the SMTP server settings.

**Step 16**

```
show voicemail configuration
```

**Example:**

```
se-10-0-0-0# show voicemail configuration
```

**Purpose**

Displays the From address for outgoing e-mail messages.
Examples

The following is sample output for the `show voicemail notification` command.

```plaintext
se-10-0-0-0# show voicemail notification
Message Notification: enabled
Notification Preference: all
Connection Timeout: 60 seconds
Login to VoiceMail allowed: no
Attach voice message: yes
```

The following is sample output for the `show voicemail notification restriction-table` command.

```plaintext
se-10-0-0-0# show voicemail notification restriction-table
Restriction table: msg-notification
Minimum digits allowed: 5
Maximum digits allowed: 18
Dial-Strings:
<table>
<thead>
<tr>
<th>Preference</th>
<th>Call Pattern</th>
<th>Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>91222*</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>*</td>
<td>No</td>
</tr>
</tbody>
</table>
```

The following is sample output for the `show smtp server` command.

```plaintext
se-10-0-0-0# show smtp server
SMTP Server: 172.16.1.1
Authentication: Required
Username: smtp123
```

The following is sample output for the `show voicemail configuration` command:

```plaintext
se-10-0-0-0# show voicemail configuration
Outgoing Email From-Address: companyname@mycompany.com
```

Enabling Message Notification for a Subscriber or Group

Before configuring message notification on a device for a subscriber or group, enable the message notification capability for the subscriber or group.

Starting in Cisco Unity Express configuration mode, use the following command to enable message notification:

```
voicemail notification owner owner-id enable
```

where `owner-id` is the username of the subscriber or groupname of the group that requires the message notification capability.

The following example enables message notification for the subscriber user5 and the group sales:

```plaintext
se-10-0-0-0# config t
se-10-0-0-0(config)# voicemail notification owner user5 enable
se-10-0-0-0(config)# voicemail notification owner sales enable
se-10-0-0-0(config)# end
se-10-0-0-0#
```

Now configure message notification on one or more devices for the subscriber or group.
Configuring Message Notification for Devices

The following procedures configure the devices for message notification:

- Configuring Message Notification for Phone Devices, page 173
- Configuring Message Notification for a Numeric Pager, page 177
- Configuring Message Notification for E-mail, page 180
- Configuring Message Notification for a Text Pager, page 185

Configuring Message Notification for Phone Devices

Use this procedure to configure message notification for a subscriber or group phone device.

Prerequisites

Enable the message notification capability for the subscriber or group. See “Enabling Message Notification for a Subscriber or Group” on page 172.

Required Data for This Procedure

- Phone number
- Extra digits, if any
- Notification preference
- Days and times when notification is active

SUMMARY STEPS

1. `username username profile vm-notif-profile {cell-phone | home-phone | work-phone} phonenum`ber phonenum
   or
   `groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} phonenum`ber phonenum

2. (Optional) `username username profile vm-notif-profile {cell-phone | home-phone | work-phone} extra-digits digits`
   or
   (Optional) `groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} extra-digits digits`

3. `username username profile vm-notif-profile {cell-phone | home-phone | work-phone} enable`
   or
   `groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} enable`

4. `username username profile vm-notif-profile {cell-phone | home-phone | work-phone} preference {all | urgent}`
   or
groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone}
preference {all | urgent}

5. username username profile vm-notif-profile {cell-phone | home-phone | work-phone} schedule
day day-of-week active from hh:mm to hh:mm
or

groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone}
schedule day day-of-week active from hh:mm to hh:mm

6. show voicemail notification owner owner-id profile
7. show voicemail notification owner owner-id {cell-phone | home-phone | work-phone}

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1** username username profile vm-notif-profile {cell-phone | home-phone | work-phone} phononenumber phononenumber
or

groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} phononenumber phononenumber

**Example:**
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone phononenumber 912225550150
se-10-0-0-0# username user4 profile vm-notif-profile
home-phone phononenumber 912225550160
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone phononenumber 912225550165

| **Step 2** username username profile vm-notif-profile {cell-phone | home-phone | work-phone} extra-digits digits
or

groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} extra-digits digits

**Example:**
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone extra-digits 1234
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone extra-digits 7675

**Purpose**
Specifies the phone number that the system dials when sending a message notification to the phone device.
- *username*—User ID
- *groupname*—Group ID
- *phononenumber*—Phone number of the device. Include any access codes in the phone number. Valid characters are digits 0 to 9.

System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Phone number is restricted.

(Optional) Enter any extra digits that should be dialed after the outgoing call is answered. Valid values include digits 0 to 9, pound (#), asterisk (*), or plus (+). The plus sign adds a 1-second pause in the number. The maximum number of digits allowed is 64.

System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Extra digits contain more than 64 digits.
- Extra digits contain an unacceptable character.
### Configuring Message Notification

#### Step 3

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>`username username profile vm-notif-profile {cell-phone</td>
<td>home-phone</td>
</tr>
<tr>
<td>or</td>
<td>System messages occur for the following conditions:</td>
</tr>
<tr>
<td>`groupname groupname profile vm-notif-profile {cell-phone</td>
<td>home-phone</td>
</tr>
<tr>
<td></td>
<td>• User or group does not have a mailbox.</td>
</tr>
<tr>
<td></td>
<td>• Profile does not exist.</td>
</tr>
<tr>
<td></td>
<td>• Phone device does not have an assigned phone number.</td>
</tr>
<tr>
<td></td>
<td>• Message notification is disabled system-wide.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone enable
se-10-0-0-0# username user4 profile vm-notif-profile
home-phone enable
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone enable
```

#### Step 4

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>`username username profile vm-notif-profile {cell-phone</td>
<td>home-phone</td>
</tr>
<tr>
<td>or</td>
<td>System messages occur for the following conditions:</td>
</tr>
<tr>
<td>`groupname groupname profile vm-notif-profile {cell-phone</td>
<td>home-phone</td>
</tr>
<tr>
<td></td>
<td>• urgent—Only urgent messages generate notifications. The default is urgent.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone all
se-10-0-0-0# username user4 profile vm-notif-profile
home-phone preference urgent
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone preference all
```
## Configuring Message Notification for Devices

### Command or Action

| Step 5 | username username profile vm-notif-profile {cell-phone | home-phone | work-phone} schedule day day-of-week active from hh:mm to hh:mm or
groupname groupname profile vm-notif-profile {cell-phone | home-phone | work-phone} schedule day day-of-week active from hh:mm to hh:mm |
|---|---|
| Purpose | Specifies the days and times when message notification is active for this device. This operation changes only the specified time slots; the other time slots are not changed.
- **day-of-week** — Valid values are 1 to 7, where 1 is Sunday, 2 is Monday, and so forth.
- **hh** — Valid values are 00 to 24. Use the 24-hour clock for start and end times.
- **mm** — Valid values are 00 or 30.
Repeat this step for each day of the week and time block that message notification is active.
System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Start time is later than end time. |

### Examples

**Step 5**

```
Example:
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone schedule day 2 active from 08:00 to 11:30
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone schedule day 2 active from 13:00 to 17:30
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone schedule day 3 active from 08:00 to 15:00
se-10-0-0-0# username user3 profile vm-notif-profile
cell-phone schedule day 6 active from 09:00 to 13:30
se-10-0-0-0# username user4 profile vm-notif-profile
home-phone schedule day 2 active from 08:00 to 12:00
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone schedule day 3 active from 08:00 to 18:00
se-10-0-0-0# groupname sales profile vm-notif-profile
work-phone schedule day 5 active from 08:00 to 20:00
```

### Command or Action

<table>
<thead>
<tr>
<th>Step 6</th>
<th>show voicemail notification owner owner-id profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Displays the status of message notification for the subscriber or group.</td>
</tr>
</tbody>
</table>

### Examples

**Step 6**

```
Example:
se-10-0-0-0# show voicemail notification owner user3 profile
```

### Command or Action

| Step 7 | show voicemail notification owner owner-id {cell-phone | home-phone | work-phone} |
|---|---|
| Purpose | Displays the settings for the subscriber or group device. |

### Examples

**Step 7**

```
Example:
se-10-0-0-0# show notification owner user3 cell-phone
```
Configuring Message Notification

Configuring Message Notification for Devices

Monday  08:00 to 11:30, 13:00 to 17:30
Tuesday  08:00 to 15:00
Wednesday Inactive all day
Thursday  Inactive all day
Friday   09:00 to 13:30
Saturday Inactive all day

Configuring Message Notification for a Numeric Pager

Use this procedure to configure message notification for a subscriber or group numeric pager.

Prerequisites

Enable the message notification capability for the subscriber or group. See “Enabling Message Notification for a Subscriber or Group” on page 172.

Required Data for This Procedure

- Phone number
- Extra digits, if any
- Notification preference
- Days and times when notification is active

SUMMARY STEPS

1. `username username profile vm-notif-profile num-pager phonenum number phonenum number`
   or
   `groupname groupname profile vm-notif-profile num-pager phonenum number phonenum number`
2. (Optional) `username username profile vm-notif-profile num-pager extra-digits digits`
   or
   (Optional) `groupname groupname profile vm-notif-profile num-pager extra-digits digits`
3. `username username profile vm-notif-profile num-pager enable`
   or
   `groupname groupname profile vm-notif-profile num-pager enable`
4. `username username profile vm-notif-profile num-pager preference {all | urgent}`
   or
   `groupname groupname profile vm-notif-profile num-pager preference {all | urgent}`
5. `username username profile vm-notif-profile num-pager schedule day day-of-week active from hh:mm to hh:mm`
   or
   `groupname groupname profile vm-notif-profile num-pager schedule day day-of-week active from hh:mm to hh:mm`
6. `show voicemail notification owner owner-id profile`
7. `show voicemail notification owner owner-id num-pager`
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1** `username username profile vm-notif-profile num-pager phonenumber phonenumber` <br> or `groupname groupname profile vm-notif-profile num-pager phonenumber phonenumber` | Specifies the phone number that the system dials when sending a message notification to the numeric pager.  
- `username`—User ID  
- `groupname`—Group ID  
- `phonenumber`—Phone number of the device. Include any access codes in the phone number. Valid characters are digits 0 to 9.  
System messages occur for the following conditions:  
- Username or groupname does not exist.  
- User or group does not have a mailbox.  
- Phone number is restricted. |
| `Example:` se-10-0-0-0# username user5 profile vm-notif-profile num-pager phonenumber 91225550150  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager phonenumber 91225550180 | |

| **Step 2** `username username profile vm-notif-profile num-pager extra-digits digits` <br> or `groupname groupname profile vm-notif-profile num-pager extra-digits digits` | (Optional) Enter any extra digits that should be dialed after the outgoing call is answered.  
Valid values include digits 0 to 9, pound or hash (#), asterisk (*), or plus (+). The plus sign adds a 1-second pause in the number. The maximum number of digits allowed is 64.  
System messages occur for the following conditions:  
- Username or groupname does not exist.  
- User or group does not have a mailbox.  
- Profile does not exist.  
- Extra digits contain more than 64 digits.  
- Extra digits contain an unacceptable character. |
| `Example:` se-10-0-0-0# username user5 profile vm-notif-profile num-pager extra-digits 1234  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager extra-digits 8282 | |

| **Step 3** `username username profile vm-notif-profile num-pager enable` <br> or `groupname groupname profile vm-notif-profile num-pager enable` | Enables the device to receive message notifications.  
System messages occur for the following conditions:  
- Username or groupname does not exist.  
- User or group does not have a mailbox.  
- Profile does not exist.  
- Numeric pager does not have an assigned phone number.  
- Message notification is disabled system-wide. |
| `Example:` se-10-0-0-0# username user5 profile vm-notif-profile num-pager enable  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager enable | |
### Command or Action

| Step 4 | username username profile vm-notif-profile num-pager preference {all | urgent}  
or  
groupname groupname profile vm-notif-profile num-pager preference {all | urgent} |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example: | se-10-0-0-0# username user5 profile vm-notif-profile num-pager all  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager urgent |

| Step 5 | username username profile vm-notif-profile num-pager schedule day day-of-week active from hh:mm to hh:mm  
or  
groupname groupname profile vm-notif-profile num-pager schedule day day-of-week active from hh:mm to hh:mm |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example: | se-10-0-0-0# username user5 profile vm-notif-profile num-pager schedule day 2 active from 08:00 to 11:30  
se-10-0-0-0# username user5 profile vm-notif-profile num-pager schedule day 2 active from 13:00 to 17:30  
se-10-0-0-0# username user5 profile vm-notif-profile num-pager schedule day 3 active from 08:00 to 15:00  
se-10-0-0-0# username user5 profile vm-notif-profile num-pager schedule day 6 active from 09:00 to 13:30  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager schedule day 2 active from 08:00 to 17:00  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager schedule day 4 active from 08:00 to 12:00  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager schedule day 4 active from 13:30 to 20:00  
se-10-0-0-0# groupname techs profile vm-notif-profile num-pager schedule day 6 active from 08:00 to 15:00 |

<table>
<thead>
<tr>
<th>Step 6</th>
<th>show voicemail notification owner owner-id profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0# show voicemail notification owner user5 profile</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 7</th>
<th>show voicemail notification owner owner-id num-pager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example:</td>
<td>se-10-0-0-0# show notification owner techs num-pager</td>
</tr>
</tbody>
</table>

### Purpose

- **Step 4**: Specifies the type of messages that generate notifications.
  - **all**: All messages generate notifications.
  - **urgent**: Only urgent messages generate notifications. The default is **urgent**.

System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- System-wide preference is set to urgent and this command tries to set the preference to all.

- **Step 5**: Specifies the days and times when message notification is active for this device. This operation changes only the specified time slots; the other time slots are not changed.
  - **day-of-week**: Valid values are 1 to 7, where 1 is Sunday, 2 is Monday, and so forth.
  - **hh**: Valid values are 00 to 24. Use the 24-hour clock for start and end times.
  - **mm**: Valid values are 00 or 30.

Repeat this step for each day of the week and time block that message notification is active.

System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Start time is later than end time.

- **Step 6**: Displays the status of message notification for the subscriber or group.

- **Step 7**: Displays the settings for the subscriber or group device.
Examples

The following is sample output for the `show voicemail notification owner` command.
```
se-10-0-0-0# show voicemail notification owner user5 profile
Message notification: enabled
Profile: vm-notif-profile
```

The following is sample output for the `show voicemail notification owner num-pager` command.
```
se-10-0-0-0# show voicemail notification owner techs num-pager
Profile: vm-notif-profile
Device: num-pager
Enabled: yes
Preference: urgent
Phone/Email: 912225550180
Extra Digits: 8282
Schedule (active hours):
Sunday Inactive all day
Monday 08:00 to 17:00
Tuesday Inactive all day
Wednesday 08:00 to 12:00, 13:30 to 20:00
Thursday Inactive all day
Friday 08:00 to 15:00
Saturday Inactive all day
```

Configuring Message Notification for E-mail

Use this procedure to configure message notification for a subscriber or group e-mail inbox.

Prerequisites

Enable the message notification capability for the subscriber or group. See “Enabling Message Notification for a Subscriber or Group” on page 172.

Required Data for This Procedure

- E-mail address
- Status of attaching voice messages to e-mail notifications
- Message text
- Notification preference
- Days and times when notification is active

SUMMARY STEPS

1. `username username profile vm-notif-profile email address email-address`
   or
   `groupname groupname profile vm-notif-profile email address email-address`
2. `username username profile vm-notif-profile email enable`
   or
Groupname groupname profile vm-notif-profile email enable

3. (Optional) username username profile vm-notif-profile email attach
   or
   (Optional) groupname groupname profile vm-notif-profile email attach

4. username username profile vm-notif-profile email preference {all | urgent}
   or
   groupname groupname profile vm-notif-profile email preference {all | urgent}

5. username username profile vm-notif-profile email schedule day day-of-week active from $hh:mm$ to $hh:mm$
   or
   groupname groupname profile vm-notif-profile email schedule day day-of-week active from $hh:mm$ to $hh:mm$

6. username username profile vm-notif-profile email text email-text
   or
   groupname groupname profile vm-notif-profile email text email-text

7. show voicemail notification owner owner-id profile

8. show voicemail notification owner owner-id email
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1**

_username_ username profile vm-notif-profile email address

email-address

or

grouponame groupname profile vm-notif-profile email address

email-address

**Example:**

se-10-0-0-0# username user6 profile vm-notif-profile email address user6@company.com

se-10-0-0-0# grouprname mgrs profile vm-notif-profile email address mgrs@company.com

- Configures the subscriber or group e-mail address for receiving message notifications.
- `username`—User ID
- `groupname`—Group ID
- `email-address`—E-mail address for the user. The maximum number of alphanumeric characters in the e-mail address is 129.

*System messages occur for the following conditions:*
- Username or groupname does not exist.
- User or group does not have a mailbox.
- E-mail address exceeds 129 characters.

| **Step 2**

_username_ username profile vm-notif-profile email enable

or

grouponame groupname profile vm-notif-profile email enable

**Example:**

se-10-0-0-0# username user6 profile vm-notif-profile email enable

se-10-0-0-0# groupname mgrs profile vm-notif-profile email enable

- Enables the device to receive message notifications.

*System messages occur for the following conditions:*
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Message notification is disabled system-wide.
- SMTP server is not configured.

| **Step 3**

_username_ username profile vm-notif-profile email attach

or

grouponame groupname profile vm-notif-profile email attach

**Example:**

se-10-0-0-0# username user6 profile vm-notif-profile email attach

se-10-0-0-0# groupname mgrs profile vm-notif-profile email attach

- Enables voice messages to be attached to outgoing e-mail notifications.

*System messages occur for the following conditions:*
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- E-mail attachment is disabled system-wide and this command tries to enable it.
## Configuring Message Notification

### Step 4

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>username username profile vm-notif-profile email text</code></td>
<td>Configures the text that is appended to the outgoing e-mail message.</td>
</tr>
<tr>
<td><code>email-text</code></td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td><code>groupname groupname profile vm-notif-profile email text</code></td>
<td></td>
</tr>
<tr>
<td><code>email-text</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# username user6 profile vm-notif-profile email text &quot;Sales meeting scheduled for 05/26/06 2:00 pm main office room A&quot;</code></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# groupname mgrs profile vm-notif-profile email text &quot;1Q06 reports due Friday by noon&quot;</code></td>
<td></td>
</tr>
</tbody>
</table>

### Step 5

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>`username username profile vm-notif-profile email preference {all</td>
<td>urgent}`</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>`groupname groupname profile vm-notif-profile email preference {all</td>
<td>urgent}`</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# username user6 profile vm-notif-profile email preference urgent</code></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# groupname mgrs profile vm-notify-profile email preference all</code></td>
<td></td>
</tr>
</tbody>
</table>

System messages occur for the following conditions:
- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Text message is greater than 128 characters.
Configuring Message Notification for Devices

Command or Action | Purpose
--- | ---
**Step 6**

**username username profile vm-notif-profile email schedule**

day day-of-week active from hh:mm to hh:mm

or

grouppname grouppname profile vm-notif-profile email

**schedule day day-of-week active from hh:mm to hh:mm**

Examples:

se-10-0-0-0# username user6 profile vm-notif-profile email

**schedule**

day 2 active from 08:00 to 11:30

se-10-0-0-0# username user6 profile vm-notif-profile email

**schedule**

day 2 active from 13:00 to 17:30

se-10-0-0-0# username user6 profile vm-notif-profile email

**schedule**

day 3 active from 08:00 to 15:00

se-10-0-0-0# username user6 profile vm-notif-profile email

**schedule**

day 6 active from 09:00 to 13:30

se-10-0-0-0# grouppname mgrp profile vm-notif-profile email

**schedule**

day 2 active from 08:30 to 18:00

se-10-0-0-0# grouppname mgrp profile vm-notif-profile email

**schedule**

day 3 active from 12:00 to 18:00

se-10-0-0-0# grouppname mgrp profile vm-notif-profile email

**schedule**

day 4 active from 09:00 to 15:00

se-10-0-0-0# grouppname mgrp profile vm-notif-profile email

**schedule**

day 5 active from 07:00 to 17:00

Specifies the days and times when message notification is active for this device. This operation changes only the specified time slots; the other time slots are not changed.

- **day-of-week**—Valid values are 1 to 7, where 1 is Sunday, 2 is Monday, and so forth.
- **hh**—Valid values are 00 to 24. Use the 24-hour clock for start and end times.
- **mm**—Valid values are 00 or 30.

System messages occur for the following conditions:

- Username or grouppname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Start time is later than end time.

**Step 7**

**show voicemail notification owner owner-id profile**

Example:

se-10-0-0-0# show voicemail notification owner user6 profile

Displays the status of message notification for the subscriber or group.

**Step 8**

**show voicemail notification owner owner-id email**

Example:

se-10-0-0-0# show voicemail notification owner user6 email

Displays the settings for the subscriber or group device.

Examples

The following is sample output for the **show voicemail notification owner** command.

```
se-10-0-0-0# show voicemail notification owner user6 profile

Message notification: enabled
Profile: vm-notif-profile
```

The following is sample output for the **show voicemail notification owner email** command.

```
se-10-0-0-0# show voicemail notification owner user6 email

Profile: vm-notif-profile
Device: email
Enabled: yes
Preference: all
Email: mgrp@company.com
Attach VM: yes
Schedule (active hours):
    Sunday Inactive all day
    Monday 08:00 to 11:30, 13:00 to 17:30
```
Configuring Message Notification for a Text Pager

Use this procedure to configure message notification for a subscriber or group text pager.

Prerequisites

Enable the message notification capability for the subscriber or group. See “Enabling Message Notification for a Subscriber or Group” on page 172.

Required Data for This Procedure

- E-mail address
- Message text
- Notification preference
- Days and times when notification is active

SUMMARY STEPS

1. `username username profile vm-notif-profile text-pager address email-address`
   or
   `groupname groupname profile vm-notif-profile text-pager address email-address`
2. `username username profile vm-notif-profile text-pager enable`
   or
   `groupname groupname profile vm-notif-profile text-pager enable`
3. `username username profile vm-notif-profile text-pager preference { all | urgent }`
   or
   `groupname groupname profile vm-notif-profile text-pager preference { all | urgent }`
4. `username username profile vm-notif-profile text-pager schedule day day-of-week active from hh:mm to hh:mm`
   or
   `groupname groupname profile vm-notif-profile text-pager schedule day day-of-week active from hh:mm to hh:mm`
5. `username username profile vm-notif-profile text-pager text email-text`
   or
   `groupname groupname profile vm-notif-profile text-pager text email-text`
6. `show voicemail notification owner owner-id profile`
7. `show voicemail notification owner owner-id text-pager`
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1** username username profile vm-notif-profile text-pager address email-address  
  or  
  groupname groupname profile vm-notif-profile text-pager address email-address  
  Example:  
  se-10-0-0-0# username user7 profile vm-notif-profile text-pager address user3@company.com  
  se-10-0-0-0# groupname pubrel profile vm-notif-profile text-pager address pubrel@mycompany.com | Configures the subscriber e-mail address for receiving message notifications.  
  - **username**—User ID  
  - **groupname**—Group ID  
  - **email-address**—E-mail address for the subscriber. The maximum number of alphanumeric characters in the e-mail address is 129.  
  System messages occur for the following conditions:  
  - Username or groupname does not exist.  
  - User or group does not have a mailbox.  
  - E-mail address exceeds 129 characters. |
| **Step 2** username username profile vm-notif-profile text-pager enable  
  or  
  groupname groupname profile vm-notif-profile text-pager enable  
  Example:  
  se-10-0-0-0# username user7 profile vm-notif-profile text-pager enable  
  se-10-0-0-0# groupname pubrel profile vm-notif-profile text-pager enable | Enables the device to receive message notifications.  
  System messages occur for the following conditions:  
  - Username or groupname does not exist.  
  - User or group does not have a mailbox.  
  - Profile does not exist.  
  - Message notification is disabled system-wide.  
  - SMTP server is not configured. |
| **Step 3** username username profile vm-notif-profile text-pager text email-text  
  or  
  groupname groupname profile vm-notif-profile text-pager text email-text  
  Example:  
  se-10-0-0-0# username user7 profile vm-notif-profile text-pager text "Sales meeting scheduled for 05/26/06 2:00 pm main office room A"  
  se-10-0-0-0# groupname pubrel profile vm-notif-profile text-pager text "Account collaterals due tomorrow by 9 am" | Configures the text that is appended to the outgoing text pager message.  
  **email-text** can contain all alphanumeric characters except question mark (?). The maximum number of characters in the message is 128. Enclose the message in double quotes (" ").  
  System messages occur for the following conditions:  
  - Username or groupname does not exist.  
  - User or group does not have a mailbox.  
  - Profile does not exist.  
  - Text message is greater than 128 characters. |
## Configuring Message Notification

### Command or Action

**Step 4**

```plaintext
username username profile vm-notif-profile text-pager preference {all | urgent}
```

or

```plaintext
 grouppname gourppname profile vm-notif-profile text-pager preference {all | urgent}
```

**Example:**

```
se-10-0-0-0# username user7 profile vm-notif-profile
        text-pager preference urgent
se-10-0-0-0# groupname pubrel profile vm-notif-profile
        text-pager preference all
```

### Purpose

Specifies the type of messages that generate notifications.

- **all**—All messages generate notifications.
- **urgent**—Only urgent messages generate notifications. The default is *urgent*.

System messages occur for the following conditions:

- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- System-wide preference is set to urgent and this command tries to set the preference to all.

**Step 5**

```plaintext
username username profile vm-notif-profile text-pager schedule day day-of-week active from hh:mm to hh:mm
```

or

```plaintext
 gourppname gourppname profile vm-notif-profile text-pager schedule day day-of-week active from hh:mm to hh:mm
```

**Example:**

```
se-10-0-0-0# username user7 profile vm-notif-profile
text-pager schedule day 2 active from 08:00 to 11:30
se-10-0-0-0# username user7 profile vm-notif-profile
text-pager schedule day 2 active from 13:00 to 17:30
se-10-0-0-0# username user7 profile vm-notif-profile
text-pager schedule day 3 active from 08:00 to 15:00
se-10-0-0-0# username user7 profile vm-notif-profile
text-pager schedule day 6 active from 09:00 to 13:30
se-10-0-0-0# groupname pubrel profile vm-notif-profile
text-pager schedule day 2 active 08:30 to 12:00
se-10-0-0-0# groupname pubrel profile vm-notif-profile
text-pager schedule day 3 active 09:00 to 17:00
se-10-0-0-0# groupname pubrel profile vm-notif-profile
text-pager schedule day 5 active 13:00 to 18:00
```

### Purpose

Specifies the days and times when message notification is active for this device. This operation changes only the specified time slots; the other time slots are not changed.

- **day-of-week**—Valid values are 1 to 7, where 1 is Sunday, 2 is Monday, and so forth.
- **hh**—Valid values are 00 to 24. Use the 24-hour clock for start and end times.
- **mm**—Valid values are 00 or 30.

Repeat this step for each day of the week and time block that message notification is active.

System messages occur for the following conditions:

- Username or groupname does not exist.
- User or group does not have a mailbox.
- Profile does not exist.
- Start time is later than end time.

**Step 6**

```plaintext
show voicemail notification owner owner-id profile
```

**Example:**

```
se-10-0-0-0# show voicemail notification owner user7
        profile
```

### Purpose

Displays the status of message notification for the subscriber or group.

**Step 7**

```plaintext
show voicemail notification owner owner-id text-pager
```

**Example:**

```
se-10-0-0-0# show notification owner pubrel text-pager
```

### Purpose

Displays the settings for the subscriber or group device.
Examples

The following is sample output for the `show voicemail notification owner` command.

```
se-10-0-0-0# show voicemail notification owner user7 profile
Profile: vm-notif-profile
Message notification: enabled
```

The following is sample output for the `show voicemail notification owner text-pager` command.

```
se-10-0-0-0# show voicemail notification owner pubrel text-pager
Profile: vm-notif-profile
Device: text-pager
Enabled: yes
Preference: all
Email: pubrel@company.com
Schedule (active hours):
  Sunday  Inactive all day
  Monday  08:30 to 12:00
  Tuesday 09:00 to 17:00
  Wednesday Inactive all day
  Thursday Inactive all day
  Friday  13:00 to 18:00
  Saturday Inactive all day
```
Configuring VoiceView Express

Last Updated: July 25, 2006

This chapter describes the procedures for configuring VoiceView Express on Cisco Unity Express and includes the following sections:

- **Overview of VoiceView Express**, page 189
- **Configuring VoiceView Express**, page 191
- **Configuring the Phone-Authentication Service**, page 193

To configure this feature from the GUI, use the **Voice Mail > VoiceView Express** option.

**Overview of VoiceView Express**

The VoiceView Express feature allows voice-mail subscribers to browse, listen, send messages, and manage their voice mail messages from their Cisco IP phone display and soft keys. This feature is an alternative to the telephone user interface (TUI) for performing common tasks.

VoiceView Express is available on the network modules NM-CUE and NM-CUE-EC. The advanced integration module (AIM) does not support the VoiceView feature.

VoiceView Express is available for Cisco Unified CallManager Express and Cisco Unified CallManager systems. VoiceView is not available in Cisco Unified CallManager SRST mode.

Only Cisco IP phones 7940, 7941, 7960, 7961, 7970, and 7971 support VoiceView Express.

VoiceView Express is enabled by default.

For details on using the VoiceView Express features, see the *Cisco Unity Express VoiceView Express Quick Start Guide* Release 2.3.

**VoiceView Express Session Count**

The maximum number of simultaneous VoiceView Express sessions depends on the NM size:

- **NM-CUE (256-MB)**: 8 sessions
- **NM-CUE-EC (512-MB)**: 16 sessions

The system counts VoiceView Express sessions separately from graphical user interface (GUI) sessions. When a subscriber is listening to or recording a voice message or greeting with VoiceView Express, the system counts the session as a VoiceView Express session and a TUI session.
If the subscriber is browsing through voice messages on the VoiceView Express phone screen, the system counts the session as a VoiceView Express session.

## Configuring Cisco Unified CallManager for VoiceView Express

The VoiceView Express service URL configured on Cisco Unified CallManager must be http://Cisco-Unity-Express-hostname/voiceview/common/login.do.

The Cisco Unified CallManager administrator must ensure that all phones configured to use VoiceView Express are owned by the JTAPI user configured on Cisco Unity Express. VoiceView Express uses the JTAPI username and password to become a trusted phone client. Use the following procedures to add the VoiceView Express service to the phones:

1. Create an IP phone service—In the Cisco Unified CallManager administration screen, click **Feature > Cisco IP Phone Services**. Click **Add a New IP Phone Service**. Enter a name, which voice-mail subscribers see on their phone screens. Enter a description, which voice-mail subscribers see when they subscribe to VoiceView Express. Enter the IP phone service URL described above. Click **Insert**.

2. Add the IP phone service to a phone—Locate a phone in the Cisco Unified CallManager system. Click on the phone to open the phone’s configuration page. Click **Subscribe/Unsubscribe Services** in the upper-right corner of the screen. In the drop-down menu, find the IP phone service name that you created earlier. Click **Continue**. Click **Subscribe**.

3. Assign the phone to the JTAPI user—Go to the JTAPI user’s configuration page. Click **Device Association**. Associate the phone as a controlled device.

4. Repeat procedures 2 and 3 for each phone that requires VoiceView Express service.

## Configuring Cisco Unified CallManager Express for VoiceView Express

The Authentication Manager is a network server that handles authentication requests for IP phone tasks. The IP phone learns the authentication server URL during the phone’s registration process.

Cisco Unified CallManager Express (Cisco Unified CME) does not have an authentication server. Cisco Unity Express starts an authentication server that acts as the primary authentication server for VoiceView Express.

The Cisco Unified CME administrator must ensure that Cisco Unified CME authentication server URL points to Cisco Unity Express authentication server. The URL format is http://Cisco-Unity-Express-hostname/voiceview/authentication/authenticate.do.

---

**Note**

Reboot the phones to activate the URL configuration.

## Session Termination

The administrator can configure the maximum number of minutes a VoiceView Express session can remain idle. The timeout is a system-wide parameter and cannot be configured for individual subscribers or groups. The default limit per session is 5 minutes.

Active VoiceView Express sessions are terminated under the following scenarios:
A new TUI or VoiceView Express session preempts and terminates an existing VoiceView Express session.

An active VoiceView Express session can be terminated using the CLI command service voiceview session terminate mailbox-id in Cisco Unity Express EXEC mode. See “Monitoring Active IMAP and VoiceView Express Sessions” on page 251 for more information.

Configuring VoiceView Express

Use the following procedure to configure system-wide VoiceView Express parameters. VoiceView Express is enabled by default.

Prerequisites

- For Cisco Unified CallManager systems: ensure that all phones configured to use VoiceView Express are owned by the JTAPI user configured on Cisco Unity Express.
- For Cisco Unified CallManager Express systems: ensure that the Cisco Unified CallManager Express authentication server URL points to Cisco Unity Express.

Required Data for This Procedure

Number of minutes a VoiceView Express session can be inactive before the system disconnects the session.

SUMMARY STEPS

1. config t
2. service voiceview
3. enable
4. session idletimeout minutes
5. end
6. end
7. (Optional) show voiceview configuration
8. (Optional) show voiceview sessions
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><code>service voiceview</code></td>
<td>Enters VoiceView Express configuration mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config)# service voiceview</code></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><code>enable</code></td>
<td>Enables the VoiceView Express feature for all the subscribers served by the Cisco Unity Express system. The default state is enabled.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config-voiceview)# enable</code></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><code>session idletimeout minutes</code></td>
<td>Specifies the number of minutes a VoiceView Express session can be idle. After this maximum is reached, the system automatically disconnects the session. Valid values are 5 to 30 minutes. The default is 5 minutes.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config-voiceview)# session idletimeout 10</code></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><code>end</code></td>
<td>Exits VoiceView Express configuration mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config-voiceview)# end</code></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><code>end</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0(config)# end</code></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><code>show voiceview configuration</code></td>
<td>(Optional) Displays the VoiceView Express configuration parameters.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0# show voiceview configuration</code></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><code>show voiceview sessions</code></td>
<td>(Optional) Displays all active VoiceView Express sessions.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>se-10-0-0-0# show voiceview sessions</code></td>
<td></td>
</tr>
</tbody>
</table>

## Examples

The following is sample output for the `show voiceview configuration` command:

```
se-10-0-0-0# show voiceview configuration
Phone service URL: http://<CUE-hostname>/voiceview/common/login.do
Enabled: Yes
Idle Timeout (minutes): 10
```
The following is sample output for the `show voiceview sessions` command:

```
se-10-0-0-0# show voiceview sessions

Mailbox  RTP  User ID  Phone MAC Address
---  ----  ------  -------------------
 1013   Yes   user1   0015.C68E.6C1E
 1016    No    user5   0015.629F.8706
 1015    No    user3   0015.63EE.3790
 1014   Yes   user6   0015.629F.888B
 1009    No    user9   0015.6269.57D2
 1012    No   user10   0016.4676.4FCA
 1001    No   user8   0009.B7F7.5703
 1004   Yes   user11   000C.30DE.5EA8

8 session(s)
3 active RTP stream(s)
```

## Configuring the Phone-Authentication Service

The phone authentication service on Cisco Unity Express handles VoiceView Express authentication requests from the IP phones during the playback and recording of voice messages and greetings. This service is available only when Cisco Unity Express is working with Cisco Unified CME.

This service is enabled by default and cannot be disabled.

If you are integrating Cisco Unity Express with Cisco Unified CME and your network has multiple IP phone services that need authentication, then Cisco Unity Express must act as the primary authentication service and must relay non-Cisco Unity Express service requests to other servers.

### Prerequisites

Two URLs must be configured:

- The Cisco Unified CME authentication URL must point to Cisco Unity Express. This URL has the format `http://cue-ip-address/voiceview/authentication/authenticate.do`.
- The Cisco Unity Express fallback authentication URL must point to the third-party fallback server. This URL has the format `http://servername/path/filename`. Authentication requests from non-Cisco Unity Express services are relayed to this third-party server.

### Required Data for This Procedure

- URL for the Cisco Unity Express third-party fallback authentication server

### SUMMARY STEPS

1. `config t`
2. `service phone-authentication`
3. `fallback-url fallback-url`
4. `end`
5. `show phone-authentication configuration`
### Displaying and Terminating VoiceView Express Sessions

To terminate an active VoiceView Express session, see “Monitoring Active IMAP and VoiceView Express Sessions” on page 251.

---

### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td><code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# config t
```

| **Step 2** | | |
| `service phone-authentication` | Enters authentication mode. |

**Example:**

```
se-10-0-0-0(config)# service phone-authentication
```

| **Step 3** | | |
| `fallback-url` | Specifies the URL of the fallback authentication server. |

**Note** Do not use this command for Cisco Unified CallManager systems.

**Example:**

```
se-10-0-0-0(config-phone-authentication)# fallback-url
http://172.16.10.10/auth-server/authenticate.asp
```

| **Step 4** | | |
| `end` | Exits authentication mode. |

**Example:**

```
se-10-0-0-0(config-phone-authentication)# end
```

| **Step 5** | | |
| `end` | Exits configuration mode. |

**Example:**

```
se-10-0-0-0(config)# end
```

| **Step 6** | | |
| `show phone-authentication configuration` | (Optional) Displays the VoiceView Express authentication parameters. |

**Example:**

```
se-10-0-0-0# show phone-authentication configuration
```
Advanced Configuration

Last Updated: July 25, 2006

This chapter describes advanced configuration procedures for modifying application parameters after the initial installation and configuration process described in the section “Configuring System Components” on page 33. That earlier chapter includes commands not described in this chapter.

The advanced configuration procedures include:

- Configuring Application Parameters, page 196
- Configuring Multiple Triggers for an Application, page 200
- Configuring the Hostname, page 204
- Configuring the DNS Server, page 206
- Configuring NTP Servers, page 208
- Configuring a Syslog Server, page 212
- Configuring the Clock Time Zone, page 214
Configuring Application Parameters

The section “Advanced Configuration” on page 195 described how to configure parameters for the applications that shipped with Cisco Unity Express. This procedure describes how to configure parameters for your custom auto-attendant application script.

Required Data for This Procedure

- Application name.
- Script name for the application.
- Maxsessions value. See the section “Sharing Ports Among Applications and Triggers” on page 52.
- Name and value for each parameter that the script requires. These may vary, depending on the script that you have created.

Note: For more information about creating scripts, refer to the Cisco Unity Express 2.3 Guide to Writing Auto-Attendant Scripts.

SUMMARY STEPS

1. `config t`
2. `ccn application full-name`
3. `default parameter`
4. `description “text”`
5. `maxsessions number`
6. `no parameter`
7. `parameter name “value”`
8. `script name [description “description”]`
9. `enabled`
10. `end`
11. `exit`
12. `show ccn scripts`
13. `show ccn application`
14. `copy running-config startup-config`
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0# config t
```

<table>
<thead>
<tr>
<th><strong>Step 2</strong> ccn application full-name</th>
<th>Specifies the application to configure and enters application configuration mode. Use the full name of the application for the <em>full-name</em> argument.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config)# ccn application myscript
```

<table>
<thead>
<tr>
<th><strong>Step 3</strong> default parameter</th>
<th>(Optional) Resets the application parameter as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- <strong>default description</strong>—Uses the name of the application.</td>
</tr>
<tr>
<td></td>
<td>- <strong>default enabled</strong>—Enables the application.</td>
</tr>
<tr>
<td></td>
<td>- <strong>default maxsessions</strong>—Uses the number of ports on your Cisco Unity Express module. See Table 2 on page 10, Table 4 on page 11, or Table 6 on page 12 for the maximum number of ports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>default script</strong>—No effect.</td>
</tr>
<tr>
<td></td>
<td>- <strong>default parameter</strong>—Uses the script’s default value.</td>
</tr>
</tbody>
</table>

**Example:**

```
se-10-0-0-0(config-application)# default maxsessions
```

<table>
<thead>
<tr>
<th><strong>Step 4</strong> description &quot;text&quot;</th>
<th>(Optional) Enter a description of the application. Use double quotes around the text.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# description "my application"
```

<table>
<thead>
<tr>
<th><strong>Step 5</strong> maxsessions number</th>
<th>Specifies the number of callers who can access this application simultaneously. See “Port Sharing Among Multiple Triggers” on page 200 for guidelines on assigning this value.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# maxsessions 5
```

<table>
<thead>
<tr>
<th><strong>Step 6</strong> no parameter</th>
<th>(Optional) Deletes or disables a script value.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# no description
```

<table>
<thead>
<tr>
<th><strong>Step 7</strong> parameter name &quot;value&quot;</th>
<th>Specifies parameters for the application. Each parameter must have a name and a value, which is written within double quotes.</th>
</tr>
</thead>
</table>

**Example:**

```
se-10-0-0-0(config-application)# parameter MaxRetry "4"
se-10-0-0-0(config-application)# parameter WelcomePrompt "Welcome.wav"
```
Configuring Application Parameters

### Examples

The following example illustrates the `show ccn scripts` output:
```
se-10-0-0-0# show ccn scripts
Name:               myscript.aef
Description:        My New Script
```

The following example illustrates the `show ccn application` output:
```
se-10-0-0-0# show ccn application
Name:               myscript
Description:        my application
Script:              myscript.aef
ID number:           2
Enabled:             yes
```
Maximum number of sessions: 5
Retries: 4
WelcomePrompt: Welcome.wav
se-10-0-0-0#
Configuring Multiple Triggers for an Application

Your network may require additional triggers for one or more Cisco Unity Express applications. For example, customers may be able to dial more than one telephone number to contact your company. These telephone numbers would activate the auto-attendant application.

Use this procedure to configure the additional triggers. The trigger must match a dial peer configured on Cisco Unified CME or a JTAPI route point on Cisco Unified CallManager. If you configure a trigger on Cisco Unity Express, verify that the dial peer exists in Cisco Unified CME or the route point exists on Cisco Unified CallManager.

Cisco Unity Express supports a maximum of 8 triggers for all applications combined. This applies to the CUE-NM-EC, CUE-NM, and CUE-AIM.

Port Sharing Among Multiple Triggers

Each trigger is assigned a maxsessions value. In addition to the guidelines described in “Port Sharing Among Multiple Triggers” on page 200, one other consideration is needed.

The maximum number of callers that can access an application concurrently is determined by the application’s maxsession value if the total maxsessions value from all its triggers exceeds the application’s maxsessions value.

For example, suppose your module has 8 ports and you assigned the auto-attendant application a maxsessions value of 5. Your auto-attendant application has 2 triggers. You configure one trigger with a maxsessions value of 2 and the other trigger with a maxsessions value of 4. The maximum number of callers that can access the auto-attendant application simultaneously is 5, not 6.

Suppose, instead, that you configure one trigger with a maxsessions value of 2 and the other trigger with a maxsessions value of 2. The maximum number of simultaneous callers to the application is 4, not 5.

Required Data for This Procedure

The following information is required to configure the triggers:

- Telephone number that invokes the application. The number must not be the same for voice-mail, auto-attendant, and the greeting management system.
- Number of milliseconds that the system must wait for a caller response before it times out and drops the call.
- Language to use for the prompts. Cisco Unity Express supports only one language installed on the system. This option cannot be changed.
- Maximum number of callers, or sessions, that the application can handle simultaneously. The total for all applications must not exceed the maximum number of ports for the system. (See Table 2 on page 10, Table 4 on page 11, or Table 6 on page 12 for the maximum number of ports.) The applications need not have the same maximum number; for example, voice mail might need three sessions, while auto attendant needs five sessions.

SUMMARY STEPS

1. config t
2. ccn trigger {sip | jtapi} phonenumber number
3. application string
4. default parameter
5. idletimeout time
6. locale language
7. maxsessions number
8. no parameter
9. enabled
10. end
11. Repeat Step 2 to Step 10 to configure additional triggers for this application.
12. exit
13. show ccn trigger
14. copy running-config startup-config

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
</tbody>
</table>
| **Step 2** ccn trigger {sip | jtapi} phononenumber number | Specifies the telephone number that acts as the trigger to start the application and enters trigger configuration mode.  
| **Example:**                             |         |
| se-10-0-0-0(config)# ccn trigger sip phononenumber 50150 |         |
| se-10-0-0-0(config)# ccn trigger jtapi phononenumber 50160 |         |
| **Step 3** application string             | Specifies the name of the application to start when the telephone number is dialed, which, in turn, invokes the appropriate application script. This application name must match the name that was configured with the ccn application name command. |
| **Example:**                             |         |
| se-10-0-0-0(config-trigger)# application myapplication |         |
### Step 4
**default parameter**

**(Optional)** Resets the application parameter to the script-defined default value. Using the `default` command on Cisco Unity Express system parameters has the following effects:

- **default application**—No effect.
- **default enabled**—Enables the application.
- **default idletimeout**—Uses 5000 (5 seconds).
- **default locale**—Uses the system default.
- **default maxsessions**—Uses the number of ports on your Cisco Unity Express module. See Table 2 on page 10, Table 4 on page 11, or Table 6 on page 12 for the maximum number of ports.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# default idletimeout
se-10-0-0-0(config-trigger)# default maxsessions
```

### Step 5
**idletimeout time**

Specifies the number of milliseconds to wait for a caller’s response before timing out and disconnecting the call.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# idletimeout 500
```

### Step 6
**locale language**

Specifies the language to use for the prompts heard by the caller. Cisco Unity Express supports only one language installed on the system. This option cannot be changed.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# locale en_ENU
```

### Step 7
**maxsessions number**

Specifies the maximum number of callers the application can handle simultaneously. See “Port Sharing Among Multiple Triggers” on page 200 for guidelines on assigning this value.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# maxsessions 3
```

### Step 8
**no parameter**

**(Optional)** Deletes or disables the parameter value. Using the `no` command on Cisco Unity Express system parameters has the following effects:

- **no application**—No effect.
- **no enabled**—Disables the application.
- **no idletimeout**—No effect.
- **no locale**—Uses the system default.
- **no maxsessions**—Sets the value to 0.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# no maxsessions
```

### Step 9
**enabled**

Enables the trigger.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# enabled
```

### Step 10
**end**

Exits trigger configuration mode.

**Example:**
```plaintext
se-10-0-0-0(config-trigger)# end
```

### Step 11
**Repeat Step 2 to Step 10 to configure additional triggers for this application.**
Examples

The following sample configuration sets two triggers for the voice-mail application:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ccn trigger sip phonenum 50150
se-10-0-0-0(config-trigger)# application voicemail
se-10-0-0-0(config-trigger)# idletimeout 500
se-10-0-0-0(config-trigger)# maxsessions 4
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config-trigger)# end
se-10-0-0-0(config)# ccn trigger sip phonenum 50160
se-10-0-0-0(config-trigger)# application voicemail
se-10-0-0-0(config-trigger)# idletimeout 1000
se-10-0-0-0(config-trigger)# maxsessions 8
se-10-0-0-0(config-trigger)# enabled
se-10-0-0-0(config-trigger)# end
se-10-0-0-0(config)# exit
```

The output for the `show ccn trigger` command might look similar to the following:

```
se-10-0-0-0# show ccn trigger
Name:                         50150
Type:                         SIP
Application:                  voicemail
Locale:                       en_ENU
Idle Timeout:                 500
Enabled:                      yes
Maximum number of sessions:   4
Name:                         50160
Type:                         SIP
Application:                  voicemail
Locale:                       en_ENU
Idle Timeout:                 1000
Enabled:                      yes
Maximum number of sessions:   8
se-10-0-0-0#
```
Configuring the Hostname

During the software postinstallation process, the hostname was configured. Use this procedure to change the hostname.

**SUMMARY STEPS**

1. `config t`
2. `hostname hostname`
3. `exit`
4. `show hosts`
5. `copy running-config startup-config`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> hostname hostname</td>
<td>Specifies the hostname that identifies the local Cisco Unity Express system. Do not include the domain name as part of the hostname.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# hostname mainhost mainhost(config)#</code></td>
<td>The Cisco Unity Express prompt changes to reflect the hostname. If you do not enter a hostname, the prompt is formed using “se” and the IP address of the Cisco Unity Express network module.</td>
</tr>
<tr>
<td><strong>Step 3</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>mainhost(config)# exit</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> show hosts</td>
<td>Displays the local hostname and DNS servers configured on the system.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>mainhost# show hosts</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> copy running-config startup-config</td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>mainhost# copy running-config startup-config</code></td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following commands configure the hostname:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# hostname mainhost
ca-west(config)# exit
ca-west#
```

The output from the `show hosts` command might look similar to the following:

```
ca-west# show hosts

Hostname: mainhost
Domain: myoffice
DNS Server1: 10.100.10.130
DNS Server2: 10.5.0.0
ca-west#
```
# Configuring the DNS Server

During the software postinstallation process, the DNS server and IP addresses may have been configured. Use this procedure to change the server name and IP addresses.

## SUMMARY STEPS

1. `config t`
2. `ip domain-name dns-server-name`
3. `ip name-server ip-address [ip-address] [ip-address] [ip-address]`
4. `exit`
5. `show hosts`
6. `copy running-config startup-config`

## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><code>config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
</tbody>
</table>

| **Step 2**                         | Specifies the domain name of the DNS server. |
| `ip domain-name dns-server-name`  |                                              |
| **Example:**                       |                                              |
| `se-10-0-0-0(config)# ip domain-name mycompany.com` |                                              |

| **Step 3**                         | Specifies up to four IP addresses for the DNS server. |
| `ip name-server ip-address [ip-address] [ip-address]` |                                              |
| **Example:**                       |                                              |
| `se-10-0-0-0(config)# ip name-server 192.168.0.5` |                                              |
| `se-10-0-0-0(config)# ip name-server 192.168.0.5` |                                              |
| `192.168.0.10 192.168.0.12 192.168.0.20` |                                              |

| **Step 4**                         | Exits configuration mode.                   |
| `exit`                             |                                              |
| **Example:**                       |                                              |
| `se-10-0-0-0(config)# exit`        |                                              |

| **Step 5**                         | Displays the IP route destinations, gates, and masks. |
| `show hosts`                       |                                              |
| **Example:**                       |                                              |
| `se-10-0-0-0# show hosts`         |                                              |

| **Step 6**                         | Copies the configuration changes to the startup configuration. |
| `copy running-config startup-config` |                                              |
| **Example:**                       |                                              |
| `se-10-0-0-0# copy running-config startup-config` |                                              |
Examples

The following commands configure the DNS server:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ip domain-name mycompany
se-10-0-0-0(config)# ip name-server 10.100.10.130 10.5.0.0
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

The output from the `show hosts` command might look similar to the following:

```
se-10-0-0-0# show hosts

Hostname: se-10-100-6-10
Domain: mycompany
DNS Server1: 10.100.10.130
```

Configuring NTP Servers

During the software postinstallation process, the Network Time Protocol (NTP) server may have been configured. Cisco Unity Express accepts a maximum of three NTP servers. Use this procedure to add or delete NTP servers.

Adding NTP Servers

You can designate an NTP server using its IP address or its hostname.

Cisco Unity Express uses the DNS server to resolve the hostname to an IP address and stores the IP address as an NTP server. If DNS resolves the hostname to more than one IP address, Cisco Unity Express randomly chooses one of the IP addresses that is not already designated as an NTP server.

To configure an NTP server with multiple IP addresses for a hostname, repeat the configuration steps using the same hostname. Each iteration assigns the NTP server to its remaining IP addresses.

SUMMARY STEPS

1. `config t`
2. `ntp server {hostname | ip-address} [prefer]`
3. `exit`
4. `show ntp status`
5. `show ntp configuration`
6. `copy running-config startup-config`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong>  &lt;br&gt; <code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong>  &lt;br&gt; <code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong>  &lt;br&gt; `ntp server {hostname</td>
<td>ip-address} [prefer]`</td>
</tr>
<tr>
<td><strong>Example:</strong>  &lt;br&gt; <code>se-10-0-0-0(config)# ntp server 10.0.3.4</code>  &lt;br&gt; <code>se-10-0-0-0(config)# ntp server 10.0.10.20 prefer</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong>  &lt;br&gt; <code>exit</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong>  &lt;br&gt; <code>se-10-0-0-0(config)# exit</code></td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following commands configure the NTP server:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ntp server 10.100.6.9
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

The output from the `show ntp status` command might look similar to the following:

```
se-10-0-0-0# show ntp status

NTP reference server 1:      10.100.6.9
Status:                       sys.peer
Time difference (secs):       3.268110099434328E8
Time jitter (secs):           0.1719226837158203
se-10-0-0-0#
```

The following example configures an NTP server with a hostname that points to two IP addresses 172.16.10.1 and 172.16.10.2:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# ntp server NTP.mine.com
se-10-0-0-0(config)# exit
se-10-0-0-0#

se-10-0-0-0# config t
se-10-0-0-0(config)# ntp server NTP.mine.com
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

The output from the `show ntp status` command might look similar to the following:

```
se-10-0-0-0# show ntp status

NTP reference server 1:      172.16.10.1
Status:                       sys.peer
Time difference (secs):       3.268110099434328E8
Time jitter (secs):           0.1719226837158203
NTP reference server 1:      172.16.10.2
Status:                       sys.peer
```

Step 4

**Command or Action:** `show ntp status`

**Example:**

```
se-10-0-0-0# show ntp status
```

**Purpose:** Displays the NTP subsystem status.

Step 5

**Command or Action:** `show ntp configuration`

**Example:**

```
se-10-0-0-0# show ntp configuration
```

**Purpose:** Displays the configured NTP servers.

Step 6

**Command or Action:** `copy running-config startup-config`

**Example:**

```
se-10-0-0-0# copy running-config startup-config
```

**Purpose:** Copies the configuration changes to the startup configuration.
Removing an NTP Server

Remove an NTP server using its IP address or hostname.

**SUMMARY STEPS**

1. `config t`
2. `no ntp server {hostname | ip-address}`
3. `exit`
4. `show ntp status`
5. `show ntp configuration`
6. `copy running-config startup-config`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> no ntp server {hostname</td>
<td>specifies the hostname or IP address of the</td>
</tr>
<tr>
<td>ip-address}</td>
<td>NTP server to remove.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# no ntp server 10.0.3.4</code></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# no ntp server myhost</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# exit</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> show ntp status</td>
<td>Displays the NTP subsystem status.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# show ntp status</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> show ntp configuration</td>
<td>Displays the configured NTP servers.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# show ntp configuration</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 6</strong> copy running-config startup-config</td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# copy running-config startup-config</code></td>
<td></td>
</tr>
</tbody>
</table>
Displaying NTP Server Information

The following commands are available to display NTP server configuration information and status:

- `show ntp associations`
- `show ntp servers`
- `show ntp source`
- `show ntp status`

The following is sample output for the `show ntp associations` command:

```
se-10-0-0-0# show ntp associations

ind assID status  conf reach auth condition  last_event cnt
===============================================
  1 61253  8000   yes   yes  none    reject
```

The following is sample output for the `show ntp servers` command:

```
se-10-0-0-0# show ntp servers

remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
1.100.6.9       0.0.0.0         16 u    - 1024    0    0.000    0.000 4000.00
space reject,   x falsetick,   . excess,     - outlyer
+ candidate,     # selected,    * sys.peer,   o pps.peer
```

The following is sample output for the `show ntp source` command:

```
se-10-0-0-0# show ntp source

127.0.0.1: stratum 16, offset 0.000013, synch distance 8.67201
0.0.0.0:        *Not Synchronized*
```

The following is sample output for the `show ntp status` command:

```
se-10-0-0-0# show ntp status

NTP reference server : 10.100.6.9
Status: reject
Time difference (secs): 0.0
Time jitter (secs): 4.0
```
Configuring a Syslog Server

Cisco Unity Express captures messages that describe activities in the system. These messages are collected and directed to a messages.log file on the Cisco Unity Express module hard disk, the console, or an external system log (syslog) server. The messages.log file is the default destination.

This section describes the procedure for configuring an external server to collect the messages. To view the messages, see “Viewing System Activity Messages” on page 256.

Required Data for This Procedure

You need the hostname or IP address of the designated log server.

SUMMARY STEPS

1. `config t`
2. `log server address {hostname | ip-address}`
3. `exit`
4. `show running-config`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> `log server address {hostname</td>
<td>ip-address}`</td>
</tr>
<tr>
<td>Example: se-10-0-0-0(config)# log server address 10.187.240.31 se-10-0-0-0(config)# log server address logpc</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> <code>exit</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0(config)# exit</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> <code>show running-config</code></td>
<td>Displays the system configuration, which includes the configured log server.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0# show running-config</td>
<td></td>
</tr>
</tbody>
</table>

Examples

The output from the `show running-config` command might look similar to the following:

se-10-0-0-0# show running-config
clock timezone America/Los_Angeles
hostname se-10-0-0-0
ip domain-name localdomain
ntp server 10.100.60.1
.
.
log server address 10.100.10.210
voicemail default mailboxsize 3000
voicemail capacity time 6000
end
Configuring the Clock Time Zone

During the software postinstallation process, the time zone of the local Cisco Unity Express module was configured. Use this procedure to change the module’s time zone.

Cisco Unity Express automatically updates the clock for daylight savings time on the basis of the selected time zone.

SUMMARY STEPS

1. `config t`
2. `clock timezone timezone`
3. `exit`
4. `show clock detail`
5. `copy running-config startup-config`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>config t</code></td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# config t</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> <code>clock timezone timezone</code></td>
<td>Specifies the local time zone. To enter a value for the timezone argument, you must know the phrase that represents your time zone. If you do know the phrase, press &lt;Enter&gt;. A series of menus will appear to help you choose the time zone.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# clock timezone America/Los_Angeles</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> <code>exit</code></td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0(config)# exit</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> <code>show clock detail</code></td>
<td>Displays the time zone, clocking resolution, and current clock time.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# show clock detail</code></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> <code>copy running-config startup-config</code></td>
<td>Copies the configuration changes to the startup configuration.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td></td>
</tr>
<tr>
<td><code>se-10-0-0-0# copy running-config startup-config</code></td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following commands configure the clock time zone:

se-10-0-0-0# config t
se-10-0-0-0(config)# clock timezone

Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
1) Africa 4) Arctic Ocean 7) Australia 10) Pacific Ocean
2) Americas 5) Asia 8) Europe
3) Antarctica 6) Atlantic Ocean 9) Indian Ocean

#? 2
Please select a country.
1) Anguilla 18) Ecuador 35) Paraguay
2) Antigua & Barbuda 19) El Salvador 36) Peru
3) Argentina 20) French Guiana 37) Puerto Rico
4) Aruba 21) Greenland 38) St Kitts & Nevis
5) Bahamas 22) Grenada 39) St Lucia
6) Barbados 23) Guadeloupe 40) St Pierre & Miquelon
7) Belize 24) Guatemala 41) St Vincent
8) Bolivia 25) Guyana 42) Suriname
9) Brazil 26) Haiti 43) Trinidad & Tobago
10) Canada 27) Honduras 44) Turks & Caicos Is
11) Cayman Islands 28) Jamaica 45) United States
12) Chile 29) Martinique 46) Uruguay
13) Colombia 30) Mexico 47) Venezuela
14) Costa Rica 31) Montserrat 48) Virgin Islands (UK)
15) Cuba 32) Netherlands Antilles 49) Virgin Islands (US)
16) Dominica 33) Nicaragua
17) Dominican Republic 34) Panama

#? 45
Please select one of the following time zone regions.
1) Eastern Time
2) Eastern Time - Michigan - most locations
3) Eastern Time - Kentucky - Louisville area
4) Eastern Standard Time - Indiana - most locations
5) Central Time
6) Central Time - Michigan - Wisconsin border
7) Mountain Time
8) Mountain Time - south Idaho & east Oregon
9) Mountain Time - Navajo
10) Mountain Standard Time - Arizona
11) Pacific Time
12) Alaska Time
13) Alaska Time - Alaska panhandle
14) Alaska Time - Alaska panhandle neck
15) Alaska Time - west Alaska
16) Aleutian Islands
17) Hawaii

#? 11

The following information has been given:

United States
Pacific Time

Therefore TZ='America/Los_Angeles' will be used.
Local time is now: Tue Jul 18 02:02:19 PDT 2006.
Universal Time is now: Tue Jul 18 09:02:19 UTC 2006.
Is the above information OK?
1) Yes
2) No
Save the change to startup configuration and reload the module for the new timezone to take effect.

```
se-10-0-0-0(config)# end
se-10-0-0-0#
```

The output from the `show clock detail` command might look similar to the following:

```
se-10-0-0-0# show clock detail

19:20:33.724 PST Wed Feb 4 2004
time zone:                               America/Pacific
clock state:                             unsync
delta from reference (microsec):         0
estimated error (microsec):              175431
time resolution (microsec):              1
clock interrupt period (microsec):       10000
time of day (sec):                       732424833
time of day (microsec):                  760817
```
Networking Cisco Unity Express

Last Updated: July 25, 2006

This chapter describes the procedures for configuring the networking capability on the local Cisco Unity Express voice-mail system and contains the following sections:

- Overview of Cisco Unity Express Networking, page 217
- Configuring Network Locations, page 219
- Disabling a Network Location, page 225
- Downloading and Uploading Network Location Spoken Names, page 226
- Adding Remote Subscribers to the Local Directory, page 228
- Downloading and Uploading Remote Subscriber Spoken Names, page 234
- Configuring Caller ID for Incoming Messages, page 235
- Configuring a Location with vCard Information, page 236
- Configuring the LRU Cache, page 239
- Configuring the Broadcast Message VPIM ID for a Network Location, page 240

Overview of Cisco Unity Express Networking

Cisco Unity Express supports the Voice Profile for Internet Mail (VPIM) version 2 protocol to permit voice-mail message networking between Cisco Unity Express and Cisco Unity voice-mail systems that are not co-located on the same router or server. The voice-mail systems can reside on Cisco Unified CallManager or Cisco Unified CallManager Express call control platforms. Supported networked voice-mail configurations include:

- Cisco Unity Express to Cisco Unity Express
- Cisco Unity Express to Cisco Unity
- Cisco Unity to Cisco Unity Express

Cisco Unity Express must be installed and configured at each remote location.

Cisco Unity 4.0.4 is supported. You must configure VPIM networking on Cisco Unity, including the primary location for Cisco Unity and the delivery locations for remote Cisco Unity Express locations. See the documentation in the “Additional References” section on page 14 for more information.
Types of Remote Addressing

Cisco Unity Express supports the following types of remote addressing:

- Blind addressing
- Spoken name confirmation

Blind Addressing

A subscriber can send a message to another subscriber on a remote location, which must be configured on the local (sender’s) system. The sender addresses the message using the location ID of the remote system plus the recipient’s extension number at the remote location.

When the message is sent to the remote subscriber, the sender will not hear a confirmation of the recipient’s name or extension. This is blind addressing.

Spoken Name Confirmation for Remote Subscribers

Administrators can assign user IDs and extensions in the local Cisco Unity Express directory for subscribers at existing remote locations. Additionally, administrators or other privileged subscribers can record spoken names for these subscribers using the Administration via Telephone (AvT) feature.

If the local system has vCard information enabled, incoming vCard information updates the remote subscriber information on the local system. The vCard information may contain the remote subscriber’s first name, last name, and spoken name. This information is stored in the least recently used (LRU) cache.

A sender on the local system can address a message to a remote subscriber using dial-by-name or dial-by-extension. If a spoken name for the recipient is recorded, the sender hears the spoken name as confirmation. If the recipient does not exist in the local directory but is in the LRU cache, the sender hears the LRU cache information as confirmation. If the remote subscriber is not in the directory or the cache, the sender receives the recipient’s location ID and extension.

Delivery Notifications

Cisco Unity Express supports the following message delivery notification types:

- Non-delivery receipt (NDR)
- Delayed delivery record (DDR)

Non-Delivery Receipt (NDR)

If the system cannot deliver a message to a remote site after 6 hours, the local sender receives a non-delivery receipt (NDR) indicating the message was not sent or that the message was not delivered to the recipient’s mailbox.

This receipt indicates the reason for nondelivery. If nondelivery is due to the recipient’s mailbox being full, nonexistent, or disabled, the nondelivery message includes the sender’s original message. When the sender plays the NDR, the sender can readdress and resend the original message or delete the message.

Each NDR counts against the sender’s mailbox capacity.
Delayed Delivery Record (DDR)

Cisco Unity Express sends a delayed delivery record (DDR) to the local sender’s mailbox after 60 minutes of trying to deliver the original message. Unlike the NDR, the DDR does not contain the original message as an attachment and does not count against the sender’s mailbox capacity.

The DDR cannot be saved, only deleted.

The system stores only one copy of a DDR for a particular message in the sender's mailbox. The sender must delete the existing DDR in order to receive an updated DDR for the same message.

Configuring Network Locations

Follow this procedure to configure the network locations.

Prerequisites

- Cisco Unity Express must be installed and configured at each remote location.
- Network connectivity between all Cisco Unity Express and Cisco call control system sites must be established.
- Ensure that VPIM networking is configured on Cisco Unity, including the primary location for Cisco Unity and the delivery locations for remote Cisco Unity Express locations.

Required Data for This Procedure

The following information is required to configure networking on Cisco Unity Express:

- Network location ID number—Unique ID number for each location used by the voice-mail sender to send a remote message. The maximum length of the number is 7 digits. Cisco Unity Express supports a maximum of 500 locations.

  **Note**  
  Avoid creating locations with conflicting IDs, such as 100, 1001, and so forth. This may lead to ambiguity while sending messages to these locations and may lead to messages being addressed incorrectly.

- E-mail domain name—E-mail domain name or IP address for the remote voice-mail system. The domain name is attached to the local voice-mail originator’s extension when sending a VPIM message. The local system’s e-mail domain name must be configured to receive remote voice-mail messages.

- (Optional) Location name—Descriptive name of the network location.

- (Optional) Abbreviated location name—Abbreviated name of the network location. Maximum length of the name is 5 characters.

- (Optional) Voice-mail system telephone number prefix—Phone number prefix that is added to a local voice-mail originator’s extension to create a VPIM address. A prefix is required only if an e-mail domain services multiple locations, and extensions between the locations are not unique. The maximum length of the prefix is 15 digits. The default prefix is empty.
• (Optional) Length of the local voice-mail system extensions. The default minimum is 2, the default maximum is 15.

• (Optional) VPIM encoding scheme—Encoding scheme options for translating voice-mail messages at the local Cisco Unity Express system are dynamic, G.711mu-law, or G.726. The default scheme is dynamic.

• (Optional) Voice-mail spoken name capability—Enabling this functionality permits receipt of a voice-mail originator’s spoken name, which is played at the beginning of the received voice-mail message.

• (Optional) Broadcast VPIM ID—Used for sending and receiving broadcast messages between network locations. See “Configuring the Broadcast Message VPIM ID for a Network Location” on page 240 for more information.

• Location ID for the local system.

**SUMMARY STEPS**

1. `config t`
2. `network location id number`
3. (Optional) `name location-name`
4. (Optional) `abbreviation name`
5. `email domain domain-name`
6. (Optional) `voicemail phone-prefix digit string`
7. (Optional) `voicemail extension-length number [min number | max number]`
8. (Optional) `voicemail vpim-encoding {dynamic | G711ulaw | G726}`
9. (Optional) `voicemail spoken-name`
10. `end`
11. Repeat Steps 2 through 10 for each remote location.
12. `network local location id number`
13. `end`
14. `show network locations`
15. `show network detail location id number`
16. `show network detail local`
17. `show network queues`
## DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# config t</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> network location id number</td>
<td>Enters location configuration mode to allow you to add or modify a location.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config)# network location id 9</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> name location-name</td>
<td>(Optional) Descriptive name used to identify the location. Enclose the name in double quotes if spaces are used.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-location)# name &quot;San Jose&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> abbreviation name</td>
<td>(Optional) Creates an alphanumeric abbreviation for the location that is spoken to a subscriber when the subscriber performs addressing functions in the TUI. You cannot enter more than 5 characters.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-location)# abbreviation sjcal</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> email domain domain-name</td>
<td>Configures the e-mail domain name or IP address for the location. The domain name is added when sending a VPIM message to the remote location (for example, “<a href="mailto:4843000@mycompany.com">4843000@mycompany.com</a>”). If you do not configure a domain name or IP address, the Cisco Unity Express system at this location cannot receive network messages.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0(config-location)# email domain mycompany.com</td>
<td></td>
</tr>
</tbody>
</table>

**Caution**

If you remove the e-mail domain for a network location, the system automatically disables networking from the Cisco Unity Express module to that location.
If you remove the e-mail domain for the local location, then networking on that Cisco Unity Express module is disabled. To reenable a location, assign it a valid e-mail domain.
### Networking Cisco Unity Express

#### Configuring Network Locations

<table>
<thead>
<tr>
<th>Step</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td><code>voicemail phone-prefix digit-string</code></td>
<td>(Optional) Configures the phone number prefix that is added to an extension to create a VPIM address for a subscriber at the location. A prefix is required only if an e-mail domain services multiple locations and extensions between the locations are not unique. Valid values: 1 to 15 digits. Default value: empty.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# voicemail phone-prefix 484</td>
</tr>
<tr>
<td>7</td>
<td>`voicemail extension-length {number</td>
<td>min number max number}`</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# voicemail extension-length 8 se-10-0-0-0(config-location)# voicemail extension-length min 5 max 9</td>
</tr>
<tr>
<td>8</td>
<td>`voicemail vpim-encoding {dynamic</td>
<td>G711ulaw</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# voicemail vpim-encoding G711ulaw</td>
</tr>
<tr>
<td>9</td>
<td><code>voicemail spoken-name</code></td>
<td>(Optional) Enables sending the spoken name of the voice-mail originator as part of the message. If the spoken name is sent, it is played as the first part of the received message. Default: enabled.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# voicemail spoken-name</td>
</tr>
<tr>
<td>10</td>
<td><code>end</code></td>
<td>Exits location configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**

se-10-0-0-0(config-location)# end

---

*(Cisco Unity Express 2.3 CLI Administrator Guide)*
Examples

The following examples illustrate the output from the `show network` commands on company Mycompany’s call control system in San Jose with remote voice-mail provided by six remote Cisco Unity Express sites.

```
se-10-0-0-0# show network locations
```

<table>
<thead>
<tr>
<th>ID</th>
<th>NAME</th>
<th>ABBREV</th>
<th>DOMAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>'San Jose'</td>
<td>SJC</td>
<td>sjc.mycompany.com</td>
</tr>
<tr>
<td>102</td>
<td>'Dallas/Fort Worth'</td>
<td>DFW</td>
<td>dfw.mycompany.com</td>
</tr>
<tr>
<td>201</td>
<td>'Los Angeles'</td>
<td>LAX</td>
<td>lax.mycompany.com</td>
</tr>
<tr>
<td>202</td>
<td>'Canada'</td>
<td>CAN</td>
<td>can.mycompany.com</td>
</tr>
</tbody>
</table>
Configuring Network Locations

Networking Cisco Unity Express

Cisco Unity Express 2.3 CLI Administrator Guide

OL-10350-02

301 'Chicago'               CHI  chi.mycompany.com
302 'New York'              NYC  nyc.mycompany.com
401 'Bangalore'             BAN  bang.mycompany.com

se-10-0-0-0# show network detail location id 102

Name:            Dallas/Port Worth
Abbreviation:    DFW
Email domain:    dfw.mycompany.com
Minimum extension length: 2
Maximum extension length: 15
Phone prefix:
VPIM encoding:    G726
Send spoken name: enabled
Sent msg count:  10
Received msg count: 110

se-10-0-0-0# show network detail local

Location Id:    101
Name:            San Jose
Abbreviation:    SJC
Email domain:    sjc.mycompany.com
Minimum extension length: 2
Maximum extension length: 15
Phone prefix:
VPIM encoding:    dynamic
Send spoken name: enabled

The following example illustrates output from the show network queues command. The output includes the following fields:

- **ID**—Job ID.
- **Retry**—Number of times that Cisco Unity Express has tried to send this job to the remote location.
- **Time**—Time when the job will be resent.

se-10-0-0-0# show network queues

Running Job Queue

==========

<table>
<thead>
<tr>
<th>ID</th>
<th>TYPE</th>
<th>TIME</th>
<th>RETRY</th>
<th>SENDER</th>
<th>RECIPIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>VPIM</td>
<td>06:13:26</td>
<td>20</td>
<td>jennifer</td>
<td><a href="mailto:1001@sjc.mycompany.com">1001@sjc.mycompany.com</a></td>
</tr>
<tr>
<td>106</td>
<td>VPIM</td>
<td>06:28:25</td>
<td>20</td>
<td>jennifer</td>
<td><a href="mailto:1001@sjc.mycompany.com">1001@sjc.mycompany.com</a></td>
</tr>
</tbody>
</table>

Urgent Job Queue

==========

<table>
<thead>
<tr>
<th>ID</th>
<th>TYPE</th>
<th>TIME</th>
<th>RETRY</th>
<th>SENDER</th>
<th>RECIPIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>123</td>
<td>VPIM</td>
<td>16:33:39</td>
<td>1</td>
<td>andy</td>
<td><a href="mailto:9003@lax.mycompany.com">9003@lax.mycompany.com</a></td>
</tr>
</tbody>
</table>

Normal Job Queue

==========

<table>
<thead>
<tr>
<th>ID</th>
<th>TYPE</th>
<th>TIME</th>
<th>RETRY</th>
<th>SENDER</th>
<th>RECIPIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>122</td>
<td>VPIM</td>
<td>16:33:23</td>
<td>1</td>
<td>andy</td>
<td><a href="mailto:9001@lax.mycompany.com">9001@lax.mycompany.com</a></td>
</tr>
<tr>
<td>124</td>
<td>VPIM</td>
<td>16:34:28</td>
<td>1</td>
<td>andy</td>
<td><a href="mailto:9003@lax.mycompany.com">9003@lax.mycompany.com</a></td>
</tr>
<tr>
<td>125</td>
<td>VPIM</td>
<td>16:34:57</td>
<td>1</td>
<td>andy</td>
<td><a href="mailto:9002@lax.mycompany.com">9002@lax.mycompany.com</a></td>
</tr>
<tr>
<td>126</td>
<td>VPIM</td>
<td>16:35:43</td>
<td>1</td>
<td>andy</td>
<td><a href="mailto:9004@lax.mycompany.com">9004@lax.mycompany.com</a></td>
</tr>
</tbody>
</table>
Disabling a Network Location

Cisco Unity Express supports disabling a location in the Cisco Unity Express network from sending or receiving Cisco Unity Express voice-mail messages. The system does not delete the network location from the Cisco Unity Express database.

To reestablish voice-mail message transmission to and from the network location, use the `enable` command.

**Note**
Deleting the e-mail domain for a network location also disables the location.

**SUMMARY STEPS**

1. config t
2. network location id *location-id*
3. no enable
4. y
5. end
6. exit

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>config t</td>
<td></td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0# config t
se-10-0-0-0(config)#
```

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>network location id <em>location-id</em></td>
<td></td>
<td>Enters the location configuration mode for network location <em>location-id</em>.</td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0(config)# network location id 15
```

<table>
<thead>
<tr>
<th>Step 3</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>no enable</td>
<td></td>
<td>Disables the network location <em>location-id</em> from sending or receiving voice-mail messages.</td>
</tr>
</tbody>
</table>

**Example:**
```
se-10-0-0-0(config-location)# no enable
!!!WARNING!!!:Disabling location will disable networking to/from this location.
Do you wish to continue[n]?:
```

<table>
<thead>
<tr>
<th>Step 4</th>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter yes to disable the location.</td>
<td></td>
<td>—</td>
</tr>
</tbody>
</table>

Examples

The following example displays the details for network location 15 with networking disabled:

```
se-10-0-0-0(config-location)# end
se-10-0-0-0(config)#
```

```
se-10-0-0-0(config-location)#
se-10-0-0-0(config-location)# network location id 15
se-10-0-0-0(config-location)# no enable
!!!WARNING!!!: Disabling location will disable networking to/from this location.
Do you wish to continue[n]?:
y
se-10-0-0-0(config-location)# end
se-10-0-0-0(config)#
se-10-0-0-0# 
```

```
se-10-0-0-0# show network detail location id 15
```

Name: houston
Abbreviation: hou
Email domain: hou.mycompany.com
Minimum extension length: 2
Maximum extension length: 15
Phone prefix: 4
VPIM encoding: dynamic
Send spoken name: enabled
Send vCard: enabled
State: disabled
VPIM broadcast ID: vpim-broadcast
Sent msg count: 1
Received msg count: 1

The following example re-establishes voice-mail transmission to and from network location 15.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# network location id 15
se-10-0-0-0(config-location)# enable
se-10-0-0-0(config-location)
```

### Downloading and Uploading Network Location Spoken Names

Use the Administration via Telephone (AvT) options to record the spoken names. You can download these spoken names from a Cisco Unity Express module to an external server or upload them from an external server to a Cisco Unity Express module.

The following sections describe this feature:
Required Data for This Procedure

- Network location ID
- URL of the file with the recorded spoken name on the server
- Login and password to the server

Downloading the Location Spoken Name

To download the network location spoken name, use the following command in Cisco Unity Express EXEC mode:

```
network copy spokenname url url location id location-id loginname server-login password server-password
```

where the command arguments are defined as:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>url</td>
<td>URL to the spoken name file on the server.</td>
</tr>
<tr>
<td>location-id</td>
<td>Network location ID.</td>
</tr>
<tr>
<td>server-login</td>
<td>Server login.</td>
</tr>
<tr>
<td>server-password</td>
<td>Server password.</td>
</tr>
</tbody>
</table>

The following example uploads the spoken name file rename.wav for location 500:
```
se-10-0-0-0# network copy spokenname url ftp://10.4.51.66/rename.wav location id 500 loginname admin password test
```

Uploading the Location Spoken Name

To upload the network location spoken name, use the following command in Cisco Unity Express EXEC mode:

```
network copy spokenname location id location-id url url loginname server-login password server-password
```

where the command arguments are defined as:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>location-id</td>
<td>Network location ID.</td>
</tr>
<tr>
<td>url</td>
<td>URL to the spoken name file on the server.</td>
</tr>
<tr>
<td>server-login</td>
<td>Server login.</td>
</tr>
<tr>
<td>server-password</td>
<td>Server password.</td>
</tr>
</tbody>
</table>

The following example uploads the spoken name file rename.wav for location 500:
Adding Remote Subscribers to the Local Directory

Cisco Unity Express permits the addition of remote subscribers to the local voice-mail directory. The local Cisco Unity Express directory allows inclusion of frequently addressed remote subscribers. This capability allows a local voice-mail sender to address a remote recipient using dial-by-name. Additionally, the system provides the sender with a spoken name confirmation of the remote recipient so that the sender can verify that the name and location are correct.

Regardless of the license level, the CUE-NM-EC supports a maximum of 100 remote subscribers, the CUE-NM supports a maximum of 50 remote subscribers, and the AIM-CUE supports a maximum of 20 remote subscribers.

Use the AvT to record the spoken name for the remote subscribers. If a remote subscriber does not have a spoken name recorded, the system uses the remote extension number and location as confirmation to the local sender.

If the vCard option is configured, the remote subscriber’s vCard updates the local system with the remote subscriber’s first name, last name, or extension.

The following sections describe this feature:
- Configuring the Local Directory with Remote Subscribers, page 228
- Displaying Remote Subscribers, page 232
- Deleting Remote Subscriber Information, page 233

Configuring the Local Directory with Remote Subscribers

Configuring remote subscribers requires the following procedures:
- Configuring the local system for networking.
  CLI commands exist to configure the local and remote sites in the system. GUI screens are available to configure the location parameters.
- Configuring vCard information on the local system.
  See the chapter “Configuring a Location with vCard Information” on page 236 for that procedure.
- Adding the remote subscriber information to the local directory.
  This section describes this procedure.
- Adding a spoken name and location for the remote subscriber.
  The administrator uses the TUI to record a spoken name for the remote subscriber and a spoken name for the remote location.

Configuring the remote subscriber can be done in the Cisco Unity Express configuration mode and the EXEC mode. Both modes permit adding the remote subscriber to the local directory but have different capabilities for other subscriber information. Use the remote username location command once, in either mode, to associate the remote subscriber with a network location.
Configuration Mode

Use this Cisco Unity Express configuration mode procedure to configure remote subscribers on the local system.

Required Data for This Procedure

The following information is required to configure remote subscribers on the local system:

- Remote username
- Remote subscriber’s extension number
- Remote location ID

SUMMARY STEPS

1. config t
2. remote username username location location-id create
3. remote username username phonenum ber extension-number
4. exit

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 config t</td>
<td>Enters configuration mode.</td>
</tr>
</tbody>
</table>

Example:

```
se-10-0-0-0# config t
se-10-0-0-0(config)#
```

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2 remote username username location location-id create</td>
<td>Adds the subscriber with username at the location location-id to the local directory.</td>
</tr>
</tbody>
</table>

Example:

```
se-10-0-0-0(config)# remote username user1 location sjc create
```

An error message appears if one of the following conditions occurs:

- A local subscriber, group, or remote subscriber exists with this username.
- The maximum number of remote subscribers is already configured on the system.
- location-id does not exist.
- location-id is the local location.
### Step 3

**Command or Action**

```
remote username username phonenumber extension-number
```

**Example:**

```
se-10-0-0-0(config)# remote username user1 phonenumber 75555
```

**Purpose**

Associates the remote subscriber `username` with `extension-number`.

The local system does not verify the remote extension number.

An error message appears if one of the following conditions occurs:
- `username` does not exist.
- The length of `extension-number` does not fall within the maximum and minimum extension lengths for the subscriber’s location.

### Step 4

**Command or Action**

```
exit
```

**Example:**

```
se-10-0-0-0(config)# exit
se-10-0-0-0#
```

**Purpose**

Exits configuration mode.
EXEC Mode

Use this Cisco Unity Express EXEC mode procedure to configure remote subscribers on the local system.

Required Data for This Procedure

The following information is required to configure remote subscribers on the local system:

- Remote username
- Remote location ID
- Remote subscriber’s first name, last name, and full name for display purposes

SUMMARY STEPS

1. `remote username username location location-id create`
2. `remote username username fullname display display-name`
3. `remote username username fullname first first-name`
4. `remote username username fullname last last-name`

DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td>remote username username location location-id create</td>
<td>Adds the subscriber with <code>username</code> at the location <code>location-id</code> to the local directory.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# remote username user1 location sjc create</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>remote username username fullname display display-name</td>
<td>Associates the remote subscriber <code>username</code> with a display name.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# remote username user1 fullname display &quot;Al Brown&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
</tr>
<tr>
<td>remote username username fullname first first-name</td>
<td>Associates the remote subscriber <code>username</code> with a first name for display.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# remote username user1 fullname first Al</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
</tr>
<tr>
<td>remote username username fullname last last-name</td>
<td>Associates the remote subscriber <code>username</code> with a last name for display.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
</tr>
<tr>
<td>se-10-0-0-0# remote username user1 fullname last Brown</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following example configures several remote subscribers.

```
se-10-0-0-0# config t
se-10-0-0-0(config)# remote username user2 location sjc create
se-10-0-0-0(config)# remote username user2 phonenumber 84444
se-10-0-0-0(config)# remote username user5 location sjc create
se-10-0-0-0(config)# remote username user5 phonenumber 81111
se-10-0-0-0(config)# remote username user3 location nyc create
se-10-0-0-0(config)# remote username user3 phonenumber 92222
se-10-0-0-0(config)# remote username user4 location nyc create
se-10-0-0-0(config)# remote username user4 phonenumber 93333
se-10-0-0-0(config)# end
se-10-0-0-0# remote username user2 fullname display "User 2"
se-10-0-0-0# remote username user2 fullname first User
se-10-0-0-0# remote username user2 fullname last 2
se-10-0-0-0# remote username user5 fullname display "User 5"
se-10-0-0-0# remote username user5 fullname first User
se-10-0-0-0# remote username user5 fullname last 5
se-10-0-0-0# remote username user3 fullname display "User" 3
se-10-0-0-0# remote username user3 fullname first User
se-10-0-0-0# remote username user3 fullname last 3
se-10-0-0-0# remote username user4 fullname display "User 4"
se-10-0-0-0# remote username user4 fullname first User
se-10-0-0-0# remote username user4 fullname last 4
se-10-0-0-0#
```
Full Name: User 2
First Name: User
Last Name: 2
Nick Name: 
Extension: 84444
Location Id: sjc

Deleting Remote Subscriber Information

Several commands are available to delete remote subscriber information from the local directory.

Deleting an Extension Number

The following configuration mode command deletes a remote subscriber’s extension number:

```
no remote username username phonenumber extension-number
```

where `username` is the name of the remote subscriber and `extension-number` is the remote subscriber’s extension.

The following example deletes extension 75555 from remote subscriber User 2:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no remote username user2 phonenumber 84444
se-10-0-0-0(config)# end
```

Deleting a Remote Subscriber Entry in Local Directory

The following EXEC mode command deletes the remote subscriber from the local directory:

```
remote username username delete
```

where `username` is the name of the remote subscriber.

The following example deletes the remote subscriber User 2:

```
se-10-0-0-0# remote username user2 delete
```

Deleting a Remote Username

The following EXEC mode commands delete the remote subscriber’s name:

```
no remote username username fullname display display-name
no remote username username fullname first first-name
no remote username username fullname last last-name
```

where `username` is the name of the remote subscriber, `display-name` is the remote subscriber’s display name, `first-name` is the remote subscriber’s first name, and `last-name` is the remote subscriber’s last name.

The following example deletes the display name from remote subscriber User 2:

```
se-10-0-0-0# no remote username user2 fullname display “User 2”
```

The following example deletes the first name from remote subscriber User 2:
se-10-0-0-0# no remote username user2 fullname first User

The following example deletes the last name from remote subscriber User 2:
se-10-0-0-0# no remote username user2 fullname last 2

### Downloading and Uploading Remote Subscriber Spoken Names

Use the Administration via Telephone (AvT) options to record the spoken names. You can download these spoken names from the Cisco Unity Express module to an external server or upload the names from an external server to the Cisco Unity Express module.

The following sections describe this feature:
- Required Data for This Procedure, page 234
- Downloading the Remote Subscriber Spoken Name, page 234
- Uploading the Remote Subscriber Spoken Name, page 234

#### Required Data for This Procedure

- Username
- URL of the file with the recorded spoken name on the server
- Login and password to the server

#### Downloading the Remote Subscriber Spoken Name

To download the remote subscriber spoken name, use the following command in Cisco Unity Express EXEC mode:

```
remote copy spokenname url username loginname server-login password
```

where the command arguments are defined as:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>url</td>
<td>URL to the spoken name file on the server.</td>
</tr>
<tr>
<td>username</td>
<td>Remote subscriber ID.</td>
</tr>
<tr>
<td>server-login</td>
<td>Server login.</td>
</tr>
<tr>
<td>server-password</td>
<td>Server password.</td>
</tr>
</tbody>
</table>

The following example uploads the spoken name file user1.wav for remote subscriber user1:
se-10-0-0-0# remote copy spokenname url ftp://10.4.51.66/user1.wav username user1 loginname admin password test

#### Uploading the Remote Subscriber Spoken Name

To upload the network location spoken name, use the following command in Cisco Unity Express EXEC mode:
remote copy spokenname username url loginname server-login password

where the command arguments are defined as:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>username</strong></td>
<td>Remote user ID.</td>
</tr>
<tr>
<td><strong>url</strong></td>
<td>URL to the spoken name file on the server.</td>
</tr>
<tr>
<td><strong>server-login</strong></td>
<td>Server login.</td>
</tr>
<tr>
<td><strong>server-password</strong></td>
<td>Server password.</td>
</tr>
</tbody>
</table>

The following example uploads the spoken name file user1.wav for remote subscriber user1:

```
se-10-0-0-0# remote copy spokenname username user1 url ftp://10.4.51.66/user1.wav loginname admin password test
```

## Configuring Caller ID for Incoming Messages

Cisco Unity Express supports caller ID information for incoming voice-mail messages. When receiving an incoming voice-mail message from an external caller, the system attempts to match the associated caller ID information with an entry in the local directory. If a match is not found and the system is configured to play caller ID information, the system plays the sender’s telephone number in the message envelope when the recipient listens to that message. If the system is not configured to play caller ID information, the system plays “Unknown Caller” in the message envelope.

Cisco Unity Express does not verify that the caller ID information is valid. That function is dependent on the central office (CO) and the incoming trunk setup. Additionally, the local system plays caller ID information for Cisco Unified CallManager Express or Cisco Unified CallManager extensions that are not configured in the local Cisco Unity Express directory.

The default caller ID status is disabled. Use the GUI **Defaults > Voice Mail** option or the CLI command described below to enable or disable playing of caller ID information.

**Note** An external call is any telephone number that is not listed in the Cisco Unity Express subscriber directory. Possible sources of external calls are the local telephone company, an IP telephone, or an H.323 gateway. These sources must be configured to present caller ID information to the Cisco Unity Express system.

The following sections describe this feature:

- Enabling Caller ID on the Local System, page 235
- Disabling Caller ID on the Local System, page 236

### Enabling Caller ID on the Local System

Use the following Cisco Unity Express configuration mode command to enable the playing of caller ID information in the message envelope of incoming external calls.

```
voicemail callerid
```

The following example illustrates enabling caller ID information on local system:
Disabling Caller ID on the Local System

Use the following Cisco Unity Express configuration mode command to disable the playing of caller ID information in the message envelope of incoming external calls.

```plaintext
no voicemail callerid
```

The following example illustrates disabling caller ID information on local system:

```plaintext
se-10-0-0-0# config t
se-10-0-0-0(config)# no voicemail callerid
se-10-0-0-0(config)# exit
```

Configuring a Location with vCard Information

Cisco Unity Express supports sending and receiving vCard information in voice-mail messages. A remote subscriber’s vCard information contains the subscriber’s first name, last name, and extension. Cisco Unity Express uses the vCard information from incoming voice profile for Internet mail (VPIM) messages and the recorded spoken name to populate and update a least recent used (LRU) cache with the remote subscriber information. (For more information about configuring the spoken name, see “Adding Remote Subscribers to the Local Directory” on page 228.)

When addressing a message to a remote subscriber, the local sender hears the spoken name as a confirmation of the intended recipient. The LRU cache is a source of the spoken name.

The maximum length of the LRU cache is 100 subscribers on the NM-CUE-EC, 50 subscribers on the NM-CUE, and 20 subscribers on the AIM-CUE.

The following sections describe this feature:

- Enabling and Disabling vCard Information, page 236
- Displaying vCard Status, page 238

Enabling and Disabling vCard Information

The remote location numeric ID is required to enable the location to receive vCard information. The system default is to send the vCard information.

**SUMMARY STEPS**

1. `config t`
2. `network location id location-id`
3. `voicemail vcard`
4. `end`
5. `exit`
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>config t</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# config t se-10-0-0-0(config)#</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>network location id location-id</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# network location id 15</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>voicemail vcard</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# voicemail vcard</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>end</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config-location)# end se-10-0-0-0(config)#</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>exit</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# exit se-10-0-0-0#</td>
</tr>
</tbody>
</table>

### Examples

The following example enables receipt of vCard information to network locations 23 and nyc:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# network location 23
se-10-0-0-0(config-location)# voicemail vcard
se-10-0-0-0(config-location)# network location nyc
se-10-0-0-0(config-location)# voicemail vcard
se-10-0-0-0(config-location)# end
se-10-0-0-0(config)# exit
```

The following command disables receipt of vCard information to network location nyc:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# network location nyc
se-10-0-0-0(config-location)# no voicemail vcard
se-10-0-0-0(config-location)# end
se-10-0-0-0(config)# exit
```
Displaying vCard Status

Several commands are available to display vCard status.

Displaying vCard Status For a Specific Location

The following Cisco Unity Express EXEC mode command displays details about a specific remote location:

```
show network detail location id location-id
```

where `location-id` is the remote location number.

The following example displays details about network location 15, which has vCard enabled:

```
se-10-0-0-0# show network detail location id 15
```

Name: houston
Abbreviation: hou
Email domain: hou.mycompany.com
Minimum extension length: 2
Maximum extension length: 15
Phone prefix: 4
VPIM encoding: dynamic
Send spoken name: enabled
Send vCard: enabled
State: enabled
VPIM broadcast ID: vpim-broadcast
Sent msg count: 0
Received msg count: 0

Displaying vCard Status For the Local System

The following EXEC mode command displays details for the local Cisco Unity Express system:

```
show network detail local
```

The following example displays details for the local system with vCard enabled:

```
se-10-0-0-0# show network detail local
```

Location ID: 10
Name: SanJoseCA
Abbreviation: sjc
Email domain: sjc.mycompany.com
Minimum extension length: 2
Maximum extension length: 15
Phone prefix: G726
VPIM encoding: dynamic
Send spoken name: enabled
Send vCard: enabled
State: enabled
VPIM broadcast ID: vpim-broadcast
Configuring the LRU Cache

Cisco Unity Express supports a least recently used (LRU) cache that contains vCard information about remote subscribers. An LRU cache is a database of remote subscribers’ first names, last names, and spoken names. These remote subscribers are not configured in the Remote User Directory. The subscribers contained in the cache are referred to as cached users.

Network messages update the contents of the LRU cache. When a local sender addresses a voice-mail message to a remote subscriber, the system accesses this information to send a spoken name confirmation about the remote subscriber to the local sender. Each time a network message arrives from a cached user or each time a local sender sends a voice message to a cached user, the system updates the timestamp of the cached user’s entry in the LRU cache.

The maximum capacity of the LRU cache is 100 subscribes on the NM-CUE-EC, 50 subscribers on the NM-CUE, and 20 subscribers on the AIM-CUE. When the LRU cache reaches its maximum capacity, a new entry erases the existing entry with the oldest timestamp. This means that the next time a local sender calls a remote subscriber, the sender will not receive a spoken name confirmation if the remote subscriber is no longer in the LRU cache.

Do one or both of the following to avoid the inconsistent confirmation response:

- To ensure that a sender always receives a spoken name confirmation for a remote subscriber, configure the remote subscriber in to the Remote User Directory.
- Disable the LRU cache.

The LRU cache contents are saved after system reloads.

By default, the LRU cache is enabled on the local system. Use the GUI Defaults > Voice Mail option or the CLI commands described below to change the status of the LRU cache.

The following sections describe this feature:

- Enabling and Disabling the LRU Cache, page 239
- Displaying LRU Cache Data, page 240

Enabling and Disabling the LRU Cache

Use the following Cisco Unity Express configuration mode command to enable the LRU cache on the local system:

```
remote cache enable
```

The following example illustrates enabling the LRU cache on the local system:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# remote cache enable
se-10-0-0-0(config)# exit
```

Use the following Cisco Unity Express configuration mode command to disable the LRU cache on the local system. Disabling the cache clears all cache entries and prevents storage of new subscriber entries.

```
no remote cache enable
```

The following example illustrates disabling the LRU cache on the local system:

```
se-10-0-0-0# config t
se-10-0-0-0(config)# no remote cache enable
se-10-0-0-0(config)# exit
```
Displaying LRU Cache Data

Use the following Cisco Unity Express EXEC mode command to display the local system’s LRU cache data:

```
show remote cache
```

The system displays the location ID, location name, extension, and last accessed time for each cached user.

```
se-10-0-0-0# show remote cache

Remote user cache is enabled
ID   LOCATION   EXTENSION   LAST ACCESSED TIME
3014001  sjc   5555   Tue Sep 21 10:38:28 PDT 2004
6661005  nyc   1111   Tue Sep 21 14:55:11 PDT 2004
```

Configuring the Broadcast Message VPIM ID for a Network Location

Use the following procedure to configure the VPIM ID for broadcast messages for a network location.

Required Data for This Procedure

- Network location ID
- Network location VPIM ID

SUMMARY STEPS

1. `config t`
2. `network location id location-id`
3. `voicemail broadcast vpim-id vpim-id`
4. `end`
5. `exit`
DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> config t</td>
<td>Enters configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0# config t se-10-0-0-0(config)#</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> network location id location-id</td>
<td>Specifies the network location.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# network location id 15</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> voicemail broadcast vpim-id vpim-id</td>
<td>Enters location configuration mode and specifies the VPIM ID for the location. Valid VPIM IDs contain letters, numbers, underscore (_), dash (-), and dot (.). The maximum length is 32 characters.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-location)# voicemail broadcast vpim-id 159a</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> end</td>
<td>Exits location configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config-location)# end se-10-0-0-0(config)#</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> exit</td>
<td>Exits configuration mode.</td>
</tr>
<tr>
<td><strong>Example:</strong> se-10-0-0-0(config)# exit se-10-0-0-0#</td>
<td></td>
</tr>
</tbody>
</table>

Examples

The following example sets the VPIM ID to ny-270 for network location 150:

```plaintext
se-10-0-0-0# config t
se-10-0-0-0(config)# network location id 150
se-10-0-0-0(config-location)# voicemail broadcast vpim-id ny-270
se-10-0-0-0(config-location)# end
se-10-0-0-0(config)# exit
```

Troubleshooting Commands

To troubleshoot network configuration in Cisco Unity Express, use the following commands in EXEC mode.

SUMMARY STEPS

1. trace networking smtp [all | receive | send | work]
2. trace networking vpim [all | receive | send]
Troubleshooting Commands

3. `trace networking sysdb [all]`
4. `trace networking dns [all]`
5. `trace networking database [all | connection | execute | garbage | largeobject | mgmt | query | results | transaction]`
6. `trace networking jobqueue [all | job number]`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Step 1** `trace networking smtp [all | receive | send | work]` | Enables tracing for SMTP network functions.  
  - **all**—Traces every SMTP activity.  
  - **receive**—Traces SMTP receiving.  
  - **send**—Traces SMTP sending.  
  - **work**—Traces when a job is put in to or removed from the SMTP queue. |
| **Example:**  
se-10-0-0-0# trace networking smtp all | |
| **Step 2** `trace networking vpim [all | receive | send]` | Enables tracing for VPIM network functions.  
  - **all**—Traces every VPIM activity.  
  - **receive**—Traces VPIM receiving.  
  - **send**—Traces VPIM sending. |
| **Example:**  
se-10-0-0-0# trace networking vpim all | |
| **Step 3** `trace networking sysdb [all]` | Enables tracing for sysdb events.  
  - **all**—Traces every sysdb event. |
| **Example:**  
se-10-0-0-0# trace networking sysdb | |
| **Step 4** `trace networking dns [all]` | Enables tracing for DNS activities. Displays DNS lookups that are performed and results that are given when an administrator adds an e-mail domain to a location, and when a domain is verified and resolved using SMTP.  
  - **all**—Traces every DNS event. |
| **Example:**  
se-10-0-0-0# trace networking dns | |
### Command or Action

| Step 5 | trace networking database [all | connection | execute | garbage | largeobject | mgmt | query | results | transaction] |
|--------|-------------------------------------------------|

**Example:**

```
se-10-0-0-0# trace networking database results
```

Enables tracing for database functions. The following keywords specify the type of traces:

- **all**—Every database event.
- **connection**—Database connections.
- **execute**—Inserts and updates performed on database.
- **garbage**—Garbage collection process.
- **largeobject**—Large object reads and writes to the database.
- **mgmt**—Database management processes.
- **query**—Queries performed on the database.
- **results**—Results of queries, inserts, and updates.
- **transactions**—Start and end of database transactions.

| Step 6 | trace networking jobqueue [all | job number] |
|--------|----------------------------------|

**Example:**

```
se-10-0-0-0# trace networking jobqueue job 101
```

Enables tracing for the job queue.

- **all**—Traces all jobs in the queue.
- **job number**—Traces a specified job in the queue.
Monitoring the System

Last Updated: July 25, 2006

This chapter contains procedures for monitoring the system’s health and performance and includes the following sections:

- Monitoring Active Calls, page 245
- Monitoring Future Messages, page 250
- Monitoring Active IMAP and VoiceView Express Sessions, page 251
- Monitoring Queues, page 252
- Displaying SNMP and Management Data Activity, page 254
- Viewing System Activity Messages, page 256
- Checking AIM Compact Flash Memory Wear Activity, page 256

Monitoring Active Calls

This section describes the commands that permit monitoring of active calls on the Cisco Unity Express system and contains the following sections:

- Displaying Active Calls by Application, page 245
- Displaying Active Calls by Route, page 247
- Terminating an Active Call, page 249

Displaying Active Calls by Application

To display active calls by application, use the following command in Cisco Unity Express EXEC mode:

```
show ccn call application [all [subsystem {jtapi | sip}]] [application-name [subsystem {jtapi | sip}]]
```

where `all` displays active calls for all applications, `application-name` displays active calls for the specified application, and `jtapi` and `sip` display active calls for those subsystems.

The command displays information about the port, the call, and the media.

The following is sample output for the `show ccn call application` command:

```
se-10-0-0-0# show ccn call application voicemail
```
Active Call Details for Subsystem : SIP
----------------------------------------

**** Details for route ID : 1200 ****
----------------------------------------

** Active Port #1: Call and Media info **
----------------------------------------

Port ID : 4
Port Impl ID : 16904
Port State : IN_USE
Call Id : 241
Call Impl Id : FFCE47C8-669711D6-8C4BF237-80EC4A17010.4.39.35
Call State : CALL_ANSWERED
Call active time (in seconds) : 1
Application Associated : voicemail
Application Task Id : 17000000122
Called Number : 1200
Dialed Number : 
Calling Number : 1005
ANI :
DNIS :
CLID : sip:1005@10.4.39.35
Arrival Type : DIRECT
Last Redirected Number :
Original Called Number :
Original Dialed Number :

Media Id : 6
Media State : IN_USE
Media Destination Address : 10.4.39.35
Media Destination Port : 16970
Destination Size : 20
Destination Payload : G711ULAW64K
Media Source Address : 10.4.39.135
Media Source Port : 16904
Source Size : 30
Source Payload : G711ULAW64K

se-10-0-0-0# show ccn call application promptmgmt

Active Call Details for Subsystem : SIP
----------------------------------------

**** Details for route ID : 1202 ****
----------------------------------------

** Active Port #1: Call and Media info **
----------------------------------------

Port ID : 3
Port Impl ID : 16902
Port State : IN_USE
Call Id : 242
Call Impl Id : 92023CF-669811D6-8C50F237-80EC4A17010.4.39.35
Call State : CALL_ANSWERED
Call active time (in seconds) : 1
Application Associated : promptmgmt
Application Task Id : 17000000123
Called Number : 1202
**Displaying Active Calls by Route**

Cisco Unity Express supports displaying active calls by route, which is a trigger number configured for an application. Use the `show ccn trigger` command to display a list of configured triggers.

To display active calls by route, use the following command in Cisco Unity Express EXEC mode:

```
show ccn call route [all | subsystem {jtapi | sip} | route-address | subsystem {jtapi | sip}]
```

where `all` displays active calls for all applications, `route-address` displays active calls for the specified route, and `jtapi` and `sip` display active calls for those subsystems.

The command displays information about the port, the call, and the media for both JTAPI and SIP subsystems.

The following example is sample output for the `show ccn call route all` command:

```
se-10-0-0-0# show ccn call route all

Active Call Details for Subsystem :JTAPI
-----------------------------------------
**** Details for route ID :2200 ****
-------------------------------------
** Active Port #1:Call and Media info **
----------------------------------------

Port ID :2
Port Impl ID :2225550100
Port State :IN_USE
Call Id :9
Call Impl Id :1566/1
Call State :CALL_ANSWERED
Call active time(in seconds) :6
Application Associated :voicemail
Application Task Id :1700000001
Called Number :2200
Dialed Number :
```

Dialed Number :
Calling Number :1005
ANI :
DNIS :
CLID :sip:1005@10.4.39.35
Arrival Type :DIRECT
Last Redirected Number :
Original Called Number :
Original Dialed Number :

Media Id :5
Media State :IN_USE
Media Destination Address :10.4.39.35
Media Destination Port :18534
Destination Size :20
Destination Payload :G711ULAW64K
Media Source Address :10.4.39.135
Media Source Port :16902
Source Size :30
Source Payload :G711ULAW64K
Calling Number :2001
ANI :
DNIS :
CLID :
Arrival Type :DIRECT
Last Redirected Number :
Original Called Number :2200
Original Dialed Number :

Media Id :2
Media State :IN_USE
Media Destination Address :172.16.59.11
Media Destination Port :22814
Destination Size :20
Destination Payload :G711ULAW64K
Media Source Address :10.4.14.133
Media Source Port :16388
Source Size :20
Source Payload :G711ULAW64K

** Active Port #2:Call and Media info **
------------------------------------------
Port ID :1
Port Impl ID :2225550150
Port State :IN_USE
Call Id :10
Call Impl Id :1567/1
Call State :CALL_ANSWERED
Call active time(in seconds) :6
Application Associated :voicemail
Application Task Id :17000000011
Called Number :2200
Dialed Number :
Calling Number :2003
ANI :
DNIS :
CLID :
Arrival Type :DIRECT
Last Redirected Number :
Original Called Number :2200
Original Dialed Number :

Media Id :1
Media State :IN_USE
Media Destination Address :172.16.59.12
Media Destination Port :27928
Destination Size :20
Destination Payload :G711ULAW64K
Media Source Address :10.4.14.133
Media Source Port :16386
Source Size :20
Source Payload :G711ULAW64K

Active Call Details for Subsystem :SIP
-----------------------------------------

The following example displays active calls for the route 1200, which is a trigger number for the voice-mail application.

```
se-10-0-0-0# show ccn call route 1200

Active Call Details for Subsystem :SIP
```
**** Details for route ID :1200 ****

** Active Port #1: Call and Media info **
---------------------------------------------
Port ID :8
Port Impl ID :16912
Port State :IN_USE
Call Id :246
Call Impl Id :E682B0A9-673311D6-8C64F237-80EC4A17@10.4.39.35
Call State :CALL_ANSWERED
Call active time(in seconds) :0
Application Associated :voicemail
Application Task Id :17000000127
Called Number :1200
Dialed Number :
Calling Number :1005
ANI :
DNIS :
CLID :sip:1005@10.4.39.35
Arrival Type :DIRECT
Last Redirected Number :
Original Called Number :
Original Dialed Number :

Media Id :1
Media State :IN_USE
Media Destination Address :10.4.39.35
Media Destination Port :18812
Destination Size :20
Destination Payload :G711ULAW64K
Media Source Address :10.4.39.135
Media Source Port :16912
Source Size :30
Source Payload :G711ULAW64K

Terminating an Active Call

An active call can be terminated using the call’s implementation ID or the implementation ID of the port through which the call came in to the system. Use the `show ccn call route` command to obtain the call or port implementation ID. See “Displaying Active Calls by Route” on page 247.

To terminate an active call, use the following command in Cisco Unity Express EXEC mode:

```
ccn call terminate {callimplid | portimplid} impli-id
```

where `impli-id` is the implementation ID of the call or port.

The following examples terminate a call with implementation ID 1567/1:
```
se-10-0-0-0# ccn call terminate call 1567/1
```

The following examples terminate a call coming through a port with implementation 2225550150:
```
se-10-0-0-0# ccn call terminate port 2225550150
```
Monitoring Future Messages

Monitoring future messages involves the following procedures:

- Displaying Future Messages, page 250
- Deleting a Future Message, page 251

For a description of future messages, see “Sending Future Messages” on page 109.

Displaying Future Messages

Several CLI commands are available for displaying information about future messages.

Displaying All Future Messages

Starting from Cisco Unity Express EXEC mode, use the `show voicemail messages future` command to display details of all messages scheduled for future delivery.

The following is sample output:

```
se-10-0-0-0# show voicemail messages future
Message ID: JMX0637L023-NM-FOC08221WRB-731357131983
Sender: User1
Recipient(s): UserA
Length(sec): 30
Delivery time: Mon, 11 April 2006 08:00:00-0800 (PST)
Message ID: JMX0637L023-NM-FOC08221WRB-731183375855
Sender: User2
Recipient(s): UserB, UserG
Length(sec): 20
Delivery time: Wed, 13 April 2006 10:15:00-0800 (PST)
```

Displaying the Number of Future Messages for Each Subscriber

Starting from Cisco Unity Express EXEC mode, use the `show voicemail mailboxes` command to display the number of messages scheduled for future delivery for each subscriber.

The following is sample output:

```
se-10-0-0-0# show voicemail mailboxes
OWNER               MSGS NEW SAVE DEL BCST  FUTR    MSGTIME   MBXSIZE  USED
''user1'' 25   25  0    0   0     1  2952      3000     98 %
''user2'' 5    1   4    0   0     0  1933       3000     64 %
''user3''              5    5   0    0   0     1  893       3000     30 %
''user4'' 5    5   0    0   0     0  893       3000     30 %
''user8''              5    5   0    0   0     1  893       3000     30 %
''user9''              5    5   0    0   0     0  893       3000     30 %
```

Displaying the Number of Scheduled Messages for a Subscriber

Starting from Cisco Unity Express EXEC mode, use the following command to display the number of scheduled messages for a specific subscriber.

```
show voicemail detail mailbox
```
The following is sample output:

```
se-10-0-0-0# show voicemail detail mailbox user2

Owner: /sw/local/users/user2
Type: Personal
Description:
Busy state: idle
Enabled: true
Mailbox Size (seconds): 3927
Message Size (seconds): 60
Play Tutorial: true
Space Used (seconds): 60
Total Message Count: 14
New Message Count: 1
Saved Message Count: 2
Future Message Count: 2
Deleted Message Count: 9
Expiration (days): 30
Greeting: standard
Zero Out Number:
Created/Last Accessed: Jan 23 2006 13:41:31 PST
```

### Deleting a Future Message

Starting from Cisco Unity Express EXEC mode, use the following command to delete a message scheduled for future delivery.

```
voicemail message future message-id delete
```

where `message-id` is the message ID of the scheduled message. Use the `show voicemail messages future` command to display the message IDs of the scheduled messages.

An error message appears if `message-id` does not exist or if `message-id` does not belong to a message scheduled for future delivery.

The following example deletes a future message:

```
se-10-0-0-0# voicemail message future JMX0637L023-NM-FOC08221WRB-731357131983 delete
```

### Monitoring Active IMAP and VoiceView Express Sessions

Several CLI commands are available for monitoring active IMAP and VoiceView Express sessions:

- Displaying IMAP Sessions, page 251
- Displaying VoiceView Express Sessions, page 252
- Terminating an Active VoiceView Express Session, page 252

### Displaying IMAP Sessions

Starting from Cisco Unity Express EXEC mode, use the following command to display status information about active IMAP sessions:

```
show imap session
```
The following is sample output for the `show imap sessions` command:

```
se-10-0-0-0# show imap sessions
Sessions   IP Address    Connect Time      User ID
====================================================================
1           10.21.82.244 Wed Nov 16 01:35:02 CST 2005  user1
2           172.18.10.10 Wed Nov 16 03:23:15 CST 2005  user5
```

This command is not available on the AIM-CUE.

**Displaying VoiceView Express Sessions**

Starting from Cisco Unity Express EXEC mode, use the following command to display status information about active VoiceView Express sessions:

```
show voiceview sessions
```

The following is sample output for the `show voiceview sessions` command:

```
se-10-0-0-0# show voiceview sessions
Mailbox  RTP  User ID  Phone MAC Address
1013     Yes  user1   0015.C68E.6C1E
1016     No   user5   0015.629F.8706
1015     No   user3   0015.63EE.3790
1014     Yes  user6   0015.629F.888B

4 session(s)
2 active RTP stream(s)
```

This command is not available on the AIM-CUE.

**Terminating an Active VoiceView Express Session**

Starting from Cisco Unity Express EXEC mode, use the following command to terminate an active VoiceView Express session:

```
service voiceview session terminate mailbox-id
```

where `mailbox-id` is the ID of the mailbox that has the active VoiceView Express session.

The following example terminates a VoiceView Express session for mailbox ID user3:

```
se-10-0-0-0# service voiceview session terminate mailbox user3
```

Additionally, a new TUI or VoiceView Express session preempts and terminates an existing VoiceView Express session.

**Monitoring Queues**

Several CLI commands are available for monitoring Cisco Unity Express queues:

- Monitoring Network Queues, page 253
- Monitoring Notification Queues, page 253
Monitoring Network Queues

Starting from Cisco Unity Express EXEC mode, use the following command to display status information about network queues:

```
show network queues
```

The following example shows output from the `show network queues` command:

```
se-10-0-0-0# show network queues

Running Job Queue
==================
ID    TYPE  TIME       RETRY SENDER          RECIPIENT
107   VPIM 06:13:26   20    jennifer        1001@sjc.mycompany.com
106   VPIM 06:28:25   20    jennifer        1001@sjc.mycompany.com

Urgent Job Queue
=================
ID    TYPE  TIME       RETRY SENDER          RECIPIENT
123   VPIM 16:33:39   1     andy            9003@lax.mycompany.com

Normal Job Queue
=================
ID    TYPE  TIME       RETRY SENDER          RECIPIENT
122   VPIM 16:33:23   1     andy            9001@lax.mycompany.com
124   VPIM 16:34:28   1     andy            9003@lax.mycompany.com
125   VPIM 16:34:57   1     andy            9002@lax.mycompany.com
```

Monitoring Notification Queues

Starting from Cisco Unity Express EXEC mode, use the following command to display status information about message notification queues:

```
show voicemail notification queue {email | phone}
```

where `email` displays details about the e-mail queue and `phone` displays details about the phone notification queue.

The following example shows output from the `show voicemail notification queue` command:

```
se-10-0-0-0# show voicemail notification queue email

OWNER DEVICE TYPE TIME
user1 Text Pager 723232
user1 Email inbox 2323343

se-10-0-0-0# show voicemail notification queue phone

OWNER DEVICE TYPE TIME
user1 Numeric Pager 342343
```

After a job enters one of the queues, you cannot delete the job. The system deletes the job after the notification is sent.
Displaying SNMP and Management Data Activity

If you have not configured SNMP monitoring on the Cisco Unity Express system, see “Configuring SNMP Monitoring” on page 137 for the procedure.

Use the following `trace` commands in Cisco Unity Express EXEC mode to display the SNMP and management data activity:

- `trace snmp {agent all | agent debug | all}`—Enables tracing of SNMP activities.
- `trace management {agent all | agent debug | all}`—Enables tracing of management data requests.

The following examples display sample output of these commands:

```
se-10-0-0-0# trace snmp agent all
se-10-0-0-0# show trace buffer tail
```

```
4280 06/03 10:10:31.035 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxPercentTimeUsed,0) = cueMboxPercentTimeUsed
4280 06/03 10:10:31.100 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfMessages,1)
4280 06/03 10:10:31.100 snmp agnt 1
com.cisco.aesop.mgmt.snmp.MBeanUtil.invoke(Voicemail:name=Stats,MboxStatsTableValue,<parms >,<signature>)
4280 06/03 10:10:31.109 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfMessages,1) = cueMboxNumberOfMessages
4280 06/03 10:10:31.171 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfMessages,0)
4280 06/03 10:10:31.171 snmp agnt 1
com.cisco.aesop.mgmt.snmp.MBeanUtil.invoke(Voicemail:name=Stats,MboxStatsTableValue,<parms >,<signature>)
4280 06/03 10:10:31.180 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfMessages,0) = cueMboxNumberOfMessages
4280 06/03 10:10:31.241 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfNewMessages,1)
4280 06/03 10:10:31.241 snmp agnt 1
com.cisco.aesop.mgmt.snmp.MBeanUtil.invoke(Voicemail:name=Stats,MboxStatsTableValue,<parms >,<signature>)
4280 06/03 10:10:31.250 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfNewMessages,1) = cueMboxNumberOfNewMessages
4280 06/03 10:10:31.313 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfNewMessages,0)
4280 06/03 10:10:31.313 snmp agnt 1
com.cisco.aesop.mgmt.snmp.MBeanUtil.invoke(Voicemail:name=Stats,MboxStatsTableValue,<parms >,<signature>)
4280 06/03 10:10:31.322 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfNewMessages,0) = cueMboxNumberOfNewMessages
4280 06/03 10:10:31.384 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable,
cueMboxNumberOfSavedMessages,1)
4280 06/03 10:10:31.385 snmp agnt 1
com.cisco.aesop.mgmt.snmp.MBeanUtil.invoke(Voicemail:name=Stats,MboxStatsTableValue,<parms >,<signature>)
4280 06/03 10:10:31.393 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB,cueMboxTable
```
Monitoring the System

Displaying SNMP and Management Data Activity

```
, cueMboxNumberOfSavedMessages, 1) = cueMboxNumberOfSavedMessages
4280 06/03 10:10:31.454 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB, cueMboxTable
, cueMboxNumberOfSavedMessages, 0)
4280 06/03 10:10:31.455 snmp agnt 1
com.cisco.aesop.mgmt.MBeanUtil.invoke(Voicemail:name=Stats, MboxStatsTableValue, <parms
>, <signature>)
4280 06/03 10:10:31.463 snmp agnt 1
com.cisco.aesop.mgmt.snmp.SnmpNative.SnmpTableGetLong(CISCO-UNITY-EXPRESS-MIB, cueMboxTable
, cueMboxNumberOfSavedMessages, 0) = cueMboxNumberOfSavedMessages

se-10-0-0-0# trace management agent all
se-10-0-0-0# show trace buffer tail
```

087 06/03 10:18:42.523 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.JTAPI.getJTAPConnectionStatus out
087 06/03 10:18:42.523 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.getUpdateStatus in
087 06/03 10:18:42.523 mgmt agnt 1 com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.update

087 06/03 10:18:42.524 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.updateTables in
087 06/03 10:18:42.525 mgmt agnt 1 com.cisco.aesop.mgmt.SysdbUtil.get(/sw/protorbcp, device)
087 06/03 10:18:42.526 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/hw/eth/eh0, ip, addrdefault)
087 06/03 10:18:42.529 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.JTAPIUtil.gettapiPortStatus in
087 06/03 10:18:42.574 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.JTAPIUtil.gettapiPortStatus {3504={id=3, implid=3504,
state=IDLE}, 3503={id=0, implid=3503, state=IDLE}, 3502={id=1, implid=3502, state=IDLE},
3500={id=2, implid=3500, state=IDLE})
087 06/03 10:18:42.574 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.JTAPIUtil.gettapiPortStatus out
087 06/03 10:18:42.576 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/apps/f/ccnapps/configurations/craAesop/ccnwfapp,wf
j tapi, ciscoccnatcallmanager)
087 06/03 10:18:42.581 mgmt agnt 1 com.cisco.aesop.mgmt.voicemail.JTAPIUtil.getActiveCCM in
087 06/03 10:18:42.581 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/limit, global, applicationMode)
087 06/03 10:18:42.602 mgmt agnt 1 com.cisco.aesop.mgmt.voicemail.JTAPIUtil.getActiveCCM out
087 06/03 10:18:42.604 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/apps/f/ccnapps/configurations/craAesop/ccnwfapp, wfs
ip, providerHostname)
087 06/03 10:18:42.607 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/apps/f/ccnapps/configurations/craAesop/ccnwfapp, wfs
ip, providerPortnumber)
087 06/03 10:18:42.610 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/apps/f/ccnapps/configurations/craAesop/ccnwfapp, wfs
ip, providerPortnumber)
087 06/03 10:18:42.614 mgmt agnt 1
com.cisco.aesop.mgmt.SysdbUtil.get(/sw/limit, global, applicationMode)
087 06/03 10:18:42.615 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.updateTables out
087 06/03 10:18:42.615 mgmt agnt 1 com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.update
out
087 06/03 10:18:42.616 mgmt agnt 1
com.cisco.aesop.mgmt.voicemail.VoiceConnectivity.getUpdateStatus out
Viewing System Activity Messages

Cisco Unity Express captures messages that describe activities in the system. If you have not configured a syslog server, see “Configuring a Syslog Server” on page 212 for the procedure.

The activities are categorized into four different levels of severity with regard to their impact on the system’s functioning:

- **Information**—The message describes normal system activity, including debug, information, and notice messages.
- **Warning**—The message is an alert that a non-normal activity is occurring. The Cisco Unity Express system continues to function.
- **Error**—The message indicates that a system error has occurred. The Cisco Unity Express system may or may not have stopped functioning.
- **Fatal**—The message describes a critical, alert, or emergency situation with the system. The Cisco Unity Express system has stopped functioning.

These messages are collected and directed to three possible destinations:

- **messages.log file**—This option is the default. The file contains all system messages and resides on the Cisco Unity Express module hard disk. You can view them on the console or copy them to a server to review for troubleshooting and error reporting.
- **Console**—View the system messages as they occur with the `log console info` command.
- **External system log (syslog) server**—Cisco Unity Express copies the messages to another server and collects them in a file on that server’s hard disk. The syslog daemon configuration on the external server determines which directory will save the messages log.

The external server must be configured to listen for UDP on port 514 from the IP address of the Cisco Unity Express module.

Checking AIM Compact Flash Memory Wear Activity

Cisco Unity Express tracks the use and wear of the AIM compact flash memory as log and trace data are saved to the module. To display this data, use the `show interface ide 0` command in Cisco Unity Express EXEC mode.

`show interface ide 0`

The following is sample output:

```
se-10-0-0-0# show interface ide 0
IDE hd0 is up, line protocol is up
3496 reads, 46828544 bytes
0 read errors
9409 write, 137857024 bytes
0 write errors
0.0993% worn
```
Backing Up and Restoring Data

Last Updated: July 25, 2006

Cisco Unity Express backup and restore functions use an FTP server to store and retrieve data. The backup function copies the files from the Cisco Unity Express application to the FTP server and the restore function copies the files from the FTP server to the Cisco Unity Express application. The FTP server can reside anywhere in the network if the backup and restore functions can access it with an IP address or hostname.

We recommend that backups be done regularly to preserve voice-mail messages and configuration data. Backup and restore commands are available in configuration mode and in offline mode.

- In configuration mode, commands are available to set the following parameters:
  - Number of backup files to keep (the oldest file is deleted).
  - URL of the FTP server where the files will be stored.
- In offline mode, perform the backup or restore procedure. Decide the following:
  - Type of files to be backed up: all files (configuration and data), only configuration files, or only data files. Data files consist of voice-mail messages. Configuration files consist of all other system and application parameters.
  - URL of the FTP server where the files will be stored.

**Caution**
Offline mode terminates all existing voice-mail calls and IMAP and VoiceView Express sessions. No new voice-mail calls are allowed. Calls to auto attendant are allowed. We recommend doing a backup when no calls are active.

This chapter contains the following sections:

- Restrictions, page 258
- Setting Backup Parameters, page 258
- Backing Up Files, page 260
- Restoring Files, page 263
- Copying Configurations, page 265
- Restoring Factory Default Values, page 268
Restrictions

Cisco Unity Express does not support the following backup and restore capabilities:

- Scheduled backup and restore operations. The backup and restore procedures begin when the appropriate command is entered.
- Centralized message storage arrangement. Cisco Unity Express backup files cannot be used or integrated with other message stores.
- Selective backup and restore. Only full backup and restore functions are available. Individual voice-mail messages or other specific data cannot be stored or retrieved.

Setting Backup Parameters

The backup parameters define the FTP server to use for storing Cisco Unity Express backup files and the number of backups that are stored before the system deletes the oldest one.

All Cisco Unity Express backup files are stored on the specified server. You can copy the backup files to other locations or servers, if necessary.

Cisco Unity Express automatically assigns an ID to each successful backup. Use this backup ID to restore the backup.

Prerequisites

- Verify that the backup server is configured.
- Verify that an FTP administrator or other user who can log in to the FTP server has full permission on the FTP server, such as read, write, overwrite, create, and delete permissions for files and directories.

Required Data for This Procedure

- Number of revisions to save before the oldest backup is written over
- FTP server URL
- User ID and password of the FTP server login

SUMMARY STEPS

1. config t
2. backup {revisions number | server url ftp-url username ftp-username password ftp-password}
3. exit
4. show backup
### DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td><strong>config t</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# config t</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>**backup {revisions number</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# backup server url ftp://main/backups username &quot;admin&quot; password &quot;wxyz&quot;</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td><strong>exit</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0(config)# exit</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td><strong>show backup</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>se-10-0-0-0# show backup</td>
</tr>
</tbody>
</table>

### Examples

The following example configures a backup server and displays the show backup output:

```
se-10-0-0-0# config t
se-10-0-0-0# backup server url ftp://172.16.0.0/backups username admin password voice
se-10-0-0-0(config)# backup revisions 10
se-10-0-0-0(config)# exit
se-10-0-0-0# show backup
Server URL: ftp://172.16.0.0/backups
User Account on Server: admin
Number of Backups to Retain: 10
se-10-0-0-0#
```
Backing Up Files

Three types of backup requests are available: data only, configuration only, or all.

- **Data**—Backs up voice-mail greetings and voice-mail messages.
- **Configuration**—Backs up system configuration, including recorded names, custom scripts, and custom prompts. Use the `show run` command to display the current running configuration.
- **All**—Backs up all data and configuration information.

Backups are performed only in offline mode.

Cisco Unity Express automatically numbers and dates the backup files and identifies the revision number in a backupid field.

Performing different backup types at various times causes different backup IDs for data backups and configuration backups. For example, the last data backup ID might be 3, and the last configuration backup might be 4. Performing an “all” backup might result in a backup ID of 5 for both data and configuration.

When restoring the files, refer to the backup ID for the backup file that you want to use. Use the `show backup server` command for a list of backup IDs.

**Note**

We recommend that you back up your configuration files whenever changes are made to the system or application files. Data files, which contain voice messages, should be backed up regularly to minimize data loss, such as from a hardware failure.

**Caution**

Offline mode terminates all existing voice-mail calls, and no new voice-mail calls are allowed. Calls to auto attendant are allowed. We recommend doing a backup when telephone subscribers are not active on calls.

**SUMMARY STEPS**

1. `offline`
2. `backup category {all | configuration | data}`
3. `continue`
4. `show backup history`
5. `show backup server`
DETAILED STEPS

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> offline</td>
<td>Enters offline mode. All active voice-mail calls are terminated.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0# offline</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong> backup category {all</td>
<td>configuration</td>
</tr>
<tr>
<td>Example: se-10-0-0-0(offline)# backup category all se-10-0-0-0(offline)# backup category configuration se-10-0-0-0(offline)# backup category data</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3</strong> continue</td>
<td>Exits offline mode and returns to EXEC mode.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0(offline)# continue</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4</strong> show backup history</td>
<td>Displays the backup and restore procedures and the success or failure of those attempts.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0# show backup history</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5</strong> show backup server</td>
<td>Displays the backup files available on the backup server, the date of each backup, and the backup file ID.</td>
</tr>
<tr>
<td>Example: se-10-0-0-0# show backup server</td>
<td></td>
</tr>
</tbody>
</table>

Examples

The following example displays the output from the **show backup** commands:

se-10-0-0-0# show backup history

#Start Operation
Category: Configuration
Backup Server: ftp://10.100.10.215/CUE_backup
Operation: Backup
Backupid: 2
Restoreid: -1
Description: test backup 1
Date: Sun Jun 13 12:32:48 PDT 1993
Result: Success
Reason:
#End Operation

#Start Operation
Category: Data
Backup Server: ftp://10.100.10.215/CUE_backup
Operation: Backup
Backupid: 2
Restoreid: -1
Description: CUE test backup
Backing Up and Restoring Data

Date: Sun Jun 13 12:32:57 PDT 1993
Result: Success
Reason:

#End Operation

#Start Operation
Category: Configuration
Backup Server: ftp://10.100.10.215/CUE_backup
Operation: Restore
Backupid: 2
Restoreid: 1
Description:

Date: Sun Jun 13 12:37:52 PDT 1993
Result: Success
Reason:

#End Operation

#Start Operation
Category: Data
Backup Server: ftp://10.100.10.215/CUE_backup
Operation: Restore
Backupid: 2
Restoreid: 1
Description:

Date: Sun Jun 13 12:38:00 PDT 1993
Result: Success
Reason:

#End Operation

se-10-0-0-0# show backup server

Category: Data
Details of last 5 backups
Backupid: 1
Date: Tue Jul 22 10:55:52 PDT 2003
Description:

Backupid: 2
Date: Tue Jul 29 18:06:33 PDT 2003
Description:

Backupid: 3
Date: Tue Jul 29 19:10:32 PDT 2003
Description:

Category: Configuration
Details of last 5 backups
Backupid: 1
Date: Tue Jul 22 10:55:48 PDT 2003
Description:

Backupid: 2
Date: Tue Jul 29 18:06:27 PDT 2003
Description:

Backupid: 3
Date: Tue Jul 29 19:10:29 PDT 2003
Description:

se-10-0-0-0#
Restoring Files

After the backup files are created, you can restore them when needed. Restoring is done in offline mode, which terminates all voice-mail active voice-mail calls and IMAP and VoiceView Express sessions. It does not permit new voice-mail calls (auto attendant calls are permitted) or new IMAP and VoiceView Express sessions. You should consider doing the restore when telephone subscribers are least likely to be on the telephone.

Use the `show backup server` command to locate the backup ID of the file that you want to restore.

**SUMMARY STEPS**

1. `show backup server`
2. `offline`
3. `restore id backupid category {all | configuration | data}`
4. `show backup history`
5. `reload`

**DETAILED STEPS**

<table>
<thead>
<tr>
<th>Command or Action</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> <code>show backup server</code></td>
<td>Lists the data and configuration backup files. Look at the backup ID field for the revision number of the file that you want to restore.</td>
</tr>
<tr>
<td><strong>Step 2</strong> <code>offline</code></td>
<td>Enters offline mode. All active voice-mail calls are terminated.</td>
</tr>
<tr>
<td><strong>Step 3</strong> `restore id backupid category {all</td>
<td>configuration</td>
</tr>
<tr>
<td><strong>Step 4</strong> <code>show backup history</code></td>
<td>Displays the backup and restore procedures and the success or failure of those attempts.</td>
</tr>
<tr>
<td><strong>Step 5</strong> <code>reload</code></td>
<td>Resets the Cisco Unity Express module so that the restored values take effect.</td>
</tr>
</tbody>
</table>
Example

The following example displays the backup server and backup history:

```
se-10-0-0-0# show backup server

Category:       Data
Details of last 5 backups
Backupid:     1
Date:         Tue Jul 22 10:55:52 PDT 2003
Description:  
Backupid:     2
Date:         Tue Jul 29 18:06:33 PDT 2003
Description:  
Backupid:     3
Date:         Tue Jul 29 19:10:32 PDT 2003
Description:  

Category:       Configuration
Details of last 5 backups
Backupid:     1
Date:         Tue Jul 22 10:55:48 PDT 2003
Description:  
Backupid:     2
Date:         Tue Jul 29 18:06:27 PDT 2003
Description:  
Backupid:     3
Date:         Tue Jul 29 19:10:29 PDT 2003
Description:  

se-10-0-0-0#

se-10-0-0-0# show backup history

Start Operation
Category:      Configuration
Backup Server: ftp://10.100.10.215/CUE_backup
Operation:     Backup
Backupid:      1
Restoreid:     -1
Description:   test backup 1
Date:          Sun Jun 13 12:23:38 PDT 1993
Result:        Failure

#End Operation

#Start Operation
Category:      Data
Backup Server: ftp://10.100.10.215/CUE_backup
Operation:     Backup
Backupid:      1
Restoreid:     -1
Description:   test backup 1
Date:          Sun Jun 13 12:23:44 PDT 1993
Result:        Failure
Reason:        Script execution failed: /bin/BR_VMData_backup.sh: returnvalue:1
```
Unable to authenticate
#End Operation

#Start Operation
Category:      Configuration
Backup Server: ftp://10.100.10.215/CUE_backup
Operation:     Backup
Backupid:      2
Restoreid:     -1
Description:   CUE test backup
Date:          Sun Jun 13 12:32:48 PDT 1993
Result:        Success
Reason:
#End Operation

#Start Operation
Category:      Data
Backup Server: ftp://10.100.10.215/CUE_backup
Operation:     Backup
Backupid:      2
Restoreid:     -1
Description:   CUE test backup
Date:          Sun Jun 13 12:32:57 PDT 1993
Result:        Success
Reason:
#End Operation

Copying Configurations

The following Cisco Unity Express EXEC commands are available to copy the startup configuration and running configuration to and from Flash memory, the network FTP server, and the network TFTP server.

Copying from Flash Memory to Another Location

Starting in Cisco Unity Express EXEC mode, use the following command to copy the startup configuration in Flash memory to another location:

copy startup-config {ftp: user-id:password@ftp-server-address[/directory] |
tftp:ftp-server-address} filename

<table>
<thead>
<tr>
<th>Keyword or Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ftp: user-id:password@</td>
<td>User ID and password for the FTP server. Include the colon (:) and the at sign (@) in your entry.</td>
</tr>
<tr>
<td>ftp-server-address</td>
<td>IP address of the FTP server.</td>
</tr>
<tr>
<td>/directory</td>
<td>(Optional) Directory on the TFTP server where the copied file will reside. If you use it, precede the name with the forward slash (/).</td>
</tr>
<tr>
<td>tftp:ftp-server-address</td>
<td>IP address of the TFTP server.</td>
</tr>
<tr>
<td>filename</td>
<td>Name of the destination file that will contain the copied startup configuration.</td>
</tr>
</tbody>
</table>

This command is interactive and prompts you for the information. You cannot enter the parameters in one line. The following examples illustrate this process.
In this example, the startup configuration is copied to the FTP server, which requires a user ID and password to transfer files. The IP address of the FTP server is 172.16.231.193. The startup configuration file is saved on the FTP server with the filename start.

```
se-10-0-0-0# copy startup-config ftp
Address or name of remote host? admin:voice@172.16.231.193
Source filename? start
```

The following example shows the startup configuration copied to the TFTP server, which does not require a user ID and password. The IP address of the TFTP server is 172.16.231.190. The startup configuration is saved in the TFTP directory configs as filename temp_start.

```
se-10-0-0-0# copy startup-config tftp
Address or name of remote host? 172.16.231.190/configs
Source filename? temp_start
```

### Copying from the Network FTP Server to Another Location

Starting in Cisco Unity Express EXEC mode, use the following command to copy the network FTP server configuration to another location:

```
copy ftp: (running-config | startup-config) user-id:password@ftp-server-address|directory| filename
```

<table>
<thead>
<tr>
<th>Keyword or Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>running-config</td>
<td>Active configuration in Flash memory.</td>
</tr>
<tr>
<td>startup-config</td>
<td>Startup configuration in Flash memory.</td>
</tr>
<tr>
<td>user-id:password@</td>
<td>User ID and password for the FTP server. Include the colon (:) and the at sign (@) in your entry.</td>
</tr>
<tr>
<td>ftp-server-address</td>
<td>IP address of the FTP server.</td>
</tr>
<tr>
<td>directory</td>
<td>(Optional) Directory name for retrieving the file. If you use it, precede the name with the forward slash (/).</td>
</tr>
<tr>
<td>filename</td>
<td>Name of the source file to be copied.</td>
</tr>
</tbody>
</table>

This command is interactive and prompts you for the information. You cannot enter the parameters in one line. The following example illustrates this process.

In this example, the FTP server requires a user ID and password. The IP address of the FTP server is 10.3.61.16. The file start in the FTP server configs directory is copied to the startup configuration.

```
se-10-0-0-0# copy ftp: startup-config
!!!WARNING!!! This operation will overwrite your startup configuration.
Do you wish to continue[y]? y
Address or name or remote host? admin:voice@10.3.61.16/configs
Source filename? start
```

### Copying the Flash Running Configuration to Another Location

Starting in Cisco Unity Express EXEC mode, use the following command to copy the running configuration in Flash memory to another location:

```
copy running-config {ftp: user-id:password@ftp-server-address|directory} | startup-config | tftp:ftp-server-address| filename
```
When you copy the running configuration to the startup configuration, enter the command on one line.

When you copy to the FTP or TFTP server, this command becomes interactive and prompts you for the information. You cannot enter the parameters in one line. The following example illustrates this process.

In the following example, the running configuration is copied to the FTP server, which requires a user ID and password. The IP address of the FTP server is 172.16.231.193. The running configuration is copied to the configs directory as file saved_start.

```
se-10-0-0-0# copy running-config ftp:
Address or name of remote host? admin:voice@172.16.231.193/configs
Source filename? saved_start
```

In the following example, the running configuration is copied to the startup configuration as file start. In this instance, enter the command on a single line.

```
se-10-0-0-0# copy running-config startup-config start
```

### Copying the Network TFTP Configuration to Another Location

Starting in Cisco Unity Express EXEC mode, use the following command to copy the network TFTP configuration to another location:

```
copy tftp: {running-config | startup-config} tftp-server-address[/directory] filename
```

<table>
<thead>
<tr>
<th>Keyword or Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tftp: user-id:password@</td>
<td>User ID and password for the FTP server. Include the colon (:) and the at sign (@) in your entry.</td>
</tr>
<tr>
<td>tftp-server-address</td>
<td>IP address of the TFTP server.</td>
</tr>
<tr>
<td>/directory</td>
<td>(Optional) Directory on the TFTP server where the copied file will reside.</td>
</tr>
<tr>
<td></td>
<td>If you use it, precede the name with the forward slash (/).</td>
</tr>
<tr>
<td>startup-config</td>
<td>Startup configuration in Flash memory.</td>
</tr>
<tr>
<td>tftp: tftp-server-address</td>
<td>IP address of the TFTP server.</td>
</tr>
<tr>
<td>filename</td>
<td>Name of the destination file that will contain the copied running configuration.</td>
</tr>
</tbody>
</table>

This command is interactive and prompts you for the information. You cannot enter the parameters in one line. The following example illustrates this process.
In this example, the TFTP server has IP address 10.3.61.16. The file start in directory configs on the TFTP server is copied to the startup configuration.

```
se-10-0-0-0# copy tftp: startup-config
!!!WARNING!!! This operation will overwrite your startup configuration.
Do you wish to continue[y]? y
Address or name of remote host? 10.3.61.16/configs
Source filename? start
```

## Restoring Factory Default Values

Cisco Unity Express provides a command to restore the factory default values for the entire system. Restoring the system to the factory defaults erases the current configuration. This function is available in offline mode.

---

**Caution**

This operation is irreversible. All data and configuration files are erased. Use this feature with caution. We recommend that you do a full system backup before proceeding with this feature.

---

When the system is clean, the administrator sees a message that the system will reload, and the system begins to reload. When the reload is complete, the system prompts the administrator to go through the postinstallation process.

When logging in to the graphical user interface (GUI), the administrator has the option to run the initialization wizard.

Perform the following steps to reset the system to Cisco Unity Express factory default values.

---

**Step 1**

```
se-10-0-0-0# offline
```

This command puts the system into offline mode.

**Step 2**

```
(offline)# restore factory default
```

This operation will cause all the configuration and data on the system to be erased. This operation is not reversible. Do you wish to continue? (n)

**Step 3**

Do one of the following:

- Enter **n** if want to retain the system configuration and data.

  The operation is cancelled, but the system remains in offline mode. To return to online mode, enter `continue`.

- Enter **y** if you want to erase the system configuration and data.

  When the system is clean, a message appears indicating that the system will start to reload. When the reload is complete, a prompt appears to start the postinstallation process.
Troubleshooting

Last Updated: July 25, 2006

This chapter provides information on troubleshooting and contains the following sections:

- Troubleshooting Guidelines, page 269
- Troubleshooting Commands, page 274

Also check *Cisco Unity Express 2.3 Installation and Upgrade Guide* in case system limitations are involved in the problem under consideration.

**Tip**

Bookmark the *Cisco Unity Express documentation home page* for easy access to all the documents. Print out and have available the documentation for these Ongoing and As-Needed tasks.

Troubleshooting Guidelines

The following sections provide information and suggestions for troubleshooting the Cisco Unity Express configuration and applications:

- System Reports, page 270
- Log Files, page 270
- Users and Groups, page 270
- Hardware and Software, page 271
- Voice Mail, page 273
- Message Waiting Indicators (MWIs) (Cisco Unified CME Only), page 273
- Auto-Attendant Prompts, page 274

**Tip**

The *Cisco Technical Support & Documentation* website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.
System Reports

Cisco Unity Express provides the following system reports in both the graphical user interface (GUI) and the command-line interface (CLI):

- Mailbox and message statistics
- Mailbox size monitoring
- Backup and restore history
- System hardware parameters
- Memory and CPU usage (CLI only)
- Call history

Log Files

Symptom: I cannot display log files in the GUI.

Explanation Log files are kept for error reporting and troubleshooting. The GUI does not have access to system error messages.

Recommended Action
Use the CLI to display log files.

Users and Groups

Symptom: I cannot get in to the GUI.

Explanation You forgot to enter a system administrator during the initialization wizard.

Recommended Action Use the administrator login ID created during the post-installation procedure or create an administrator login ID using the following CLI commands, starting in Cisco Unity Express EXEC mode, where user-id is the user ID and password is the subscriber’s password:

a. `cue-10-0-0-0# username user-id create`

b. `cue-10-0-0-0# username user-id password password`

c. `cue-10-0-0-0# config t`

d. `cue-10-0-0-0(config)# groupname Administrators member user-id`

Symptom: I need to recover a user’s password or personal identification number (PIN).

Explanation The subscriber has forgotten the password or PIN.

Recommended Action For security reasons, passwords and PINs are not displayed on the screen or printed out. You must create a new password or PIN and give that new code to the subscriber. See “Adding and Modifying a User” on page 98 for the commands to create a new password or PIN.
Hardware and Software

Rebooting the System

Symptom: Is it necessary to reboot the router when rebooting the Cisco Unity Express module?

Explanation A reboot of the Cisco Unity Express module does not require a reboot of the router. The Cisco Unity Express module and the router can be rebooted independently of each other. However, if you reboot the router, no calls will reach the module until IP connectivity is reestablished between the router and the module.

Caution Always do a shutdown of the module before power-cycling the router to avoid data loss or file corruption. To perform a graceful shutdown of the Cisco Unity Express module, enter the service-module service-engine slot/port shutdown command.

Setting Daylight Savings Time

Symptom: I need to set daylight savings time.

Explanation Cisco Unity Express sets daylight savings time automatically on the basis of the time zone, which is selected during the installation procedure or with the Administration > Network Time & Time Zone Settings GUI screen.

Communicating Between Components

Symptom: I cannot open a session into the Cisco Unity Express module.

Explanation The TTY line associated with the module is occupied.

Recommended Action Use the service-module service-engine slot/port session clear command to clear the TTY line.

Symptom: I cannot change or remove the IP address or IP default-gateway configurations with the Cisco Unity Express CLI.

Explanation The IP address and IP default-gateway configurations are controlled from the Cisco IOS software.

Recommended Action Make the required changes from the service-engine interface.

Symptom: Service-module commands do not seem to take effect.

Explanation The service-module status might not be steady state. RBCP configuration messages go through only when the service-module is in steady state.

Recommended Action Use the service-module service-engine slot/port reload command to reload the Cisco Unity Express module.

Symptom: I cannot ping the internal address when using the IP unnumbered scheme.
**Troubleshooting**

**Troubleshooting Guidelines**

**Explanation**  The IP route table is not correct.

**Recommended Action**  When using IP unnumbered, add a static route that points to the service-engine interface.

**Symptom:** I cannot set the speed of the terminal line from the router side or the Cisco Unity Express side.

**Explanation**  Cisco Unity Express does not have a CLI command to set the speed. The speed is set to 9600, 8-N-1 on both the Cisco Unified CallManager and Cisco Unity Express sides. Although Cisco IOS software allows you to change the speed settings, the changes do not take effect.

**Online Insertion and Removal (OIR)**

**Symptom:** I did an OIR of the Cisco Unity Express network module on my router but it does not seem to be working.

**Explanation**  Only the Cisco 3745 and 3845 routers support OIR. OIR is not available on the AIM.

**Symptom:** I did an OIR on the Cisco 3745. Now the Cisco Unity Express network module is not working.

**Explanation**  The Cisco Unity Express network module must be shut down before OIR.

**Recommended Action**  OIR requires the following steps:

a. Shut down the service-engine interface.

b. Issue the service-module service-engine slotport shutdown command.

c. Wait for confirmation that the network module has been shut down.

d. Proceed with the OIR.

**Saving and Viewing Log Files**

**Symptom:** I need to be able to store log files to a remote location.

**Recommended Action**  Log files are stored on the disk, which is the default location. You can configure Cisco Unity Express to store the log files to a separate server. Also, you can copy log files on the disk to a separate server if they need to be kept for history purposes, for example:

```
copy log filename.log url ftp://ftp-user-id:ftp-user-passwd@ftp-ip-address/directory
```

```
se-10-0-0-0# copy log messages.log url ftp://admin:voice@172.168.0.5/log_history
```

**Symptom:** I cannot display the contents of log files on the GUI.

**Explanation**  The GUI cannot display log files. Troubleshooting commands and files are available only through the CLI.

**Recommended Action**  Copy the log files from Cisco Unity Express to an external server and use a text editor, such as vi, to display the content.

**Saving Configuration Changes**

**Symptom:** I lost some configuration data when the GUI timer expired.
Troubleshooting

Troubleshooting Guidelines

Explanation You did not save the data while you were entering it.

Recommended Action While making some configuration changes in the GUI, use the Apply icon to save your changes to the running configuration before the timer logs you out of the system. If the timer logs you out and you did not use the Apply icon, your changes are not saved.

Note The timer affects only the GUI, not the CLI.

Symptom: I lost configuration data when I rebooted the system.

Explanation You did not save the data before the reboot.

Recommended Action Perform a Save Configuration operation in the GUI or enter a copy running-config startup-config command in the CLI to copy your changes from the running configuration to the startup configuration. When Cisco Unity Express reboots, it reloads the startup configuration.

Note Voice-mail messages, which are considered application data and are saved directly to the disk, are preserved automatically in the startup configuration. (They should be backed up to preserve them on another server in case of a power outage or a new installation.) All other configuration changes require an explicit “save configuration” operation to preserve them in the startup configuration.

Voice Mail

Symptom: A subscriber received a message with an envelope that says “unknown caller.”

Explanation Cisco Unity Express has a Lightweight Directory Access Protocol (LDAP) directory with the names and extensions of the subscribers who have voice mailboxes. When a message comes in, Cisco Unity Express tries to match the caller’s ID (name or extension) to an entry in the LDAP directory. If a match is found, the subscriber’s name or extension is included in the message envelope.

If a subscriber is configured on the Cisco Unified CME or Cisco Unified CallManager platform but not in Cisco Unity Express, for example, Cisco Unity Express has no record of that subscriber in its directory and announces that caller as “unknown caller.”

Recommended Action You may want to synchronize the platform and Cisco Unity Express databases if some platform subscribers are not defined in the directory.

Message Waiting Indicators (MWIs) (Cisco Unified CME Only)

Symptom: After upgrading to a new version of Cisco Unity Express, the MWIs do not light up even when messages are left in the mailboxes.

Explanation The upgrade procedure removed the IP address of the Session Initiation Protocol (SIP) subsystem.

Recommended Action Reconfigure the SIP IP address to point to the Cisco Unified CME router.
Auto-Attendant Prompts

**Symptom:** The custom auto-attendant prompt is not working.

**Recommended Action** Verify that the prompt format is CCITT G.711 u-law, 8kHz, 8-bit, Mono.

Checking Log and Trace Files

To check the log and trace files on the flash memory, use the `show logs` command in Cisco Unity Express EXEC mode.

```
show logs
```

Logging and tracing to flash memory is turned off by default. Executing the `log trace` command starts the log and trace functions immediately.

The command displays the atrace.log and messages.log files. Each file has a fixed length of 10 MB, and tracing or logging stops automatically when the file reaches this length. New files overwrite the old files.

Troubleshooting Commands

Table 19 lists Cisco Unity Express troubleshooting commands. Cisco technical support personnel may request that you run one or more of these commands when troubleshooting a problem. Cisco technical support personnel will provide additional information about the commands at that time.

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
<th>Cisco Unity Express EXEC Mode</th>
<th>Cisco Unity Express Configuration Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>log console monitor module all</code></td>
<td>Displays messages on the console.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>`log console { errors</td>
<td>info</td>
<td>warning}`</td>
<td>Displays messages on the console.</td>
</tr>
<tr>
<td>`log server address { ip-address</td>
<td>hostname }`</td>
<td>Configures an external server for storing log files.</td>
<td>—</td>
</tr>
<tr>
<td><code>show arp</code></td>
<td>Displays the Cisco Unity Express ARP table entries.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td><code>show crash buffer</code></td>
<td>Displays the most recent crash log.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td><code>show errors</code></td>
<td>Displays any errors reported in the messages log.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>Command</td>
<td>Purpose</td>
<td>Cisco Unity Express EXEC Mode</td>
<td>Cisco Unity Express Configuration Mode</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------</td>
<td>------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>show exception</td>
<td>Displays any exceptions that are thrown out.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show interfaces</td>
<td>Displays all available interfaces.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show log name filename</td>
<td>Displays a specific log.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show logging</td>
<td>Displays the current active logging level.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show logs</td>
<td>Displays a list of log files.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show memory</td>
<td>Displays current Cisco Unity Express memory statistics.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show processes</td>
<td>Displays CPU or memory processes.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show software directory</td>
<td>Displays configured software information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show software download server</td>
<td>Displays configured software information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show software licenses</td>
<td>Displays configured software information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show software packages</td>
<td>Displays configured software information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show software versions</td>
<td>Displays configured software information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show tech-support</td>
<td>Displays complete system information.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show trace</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>show version</td>
<td>Displays the version of all hardware components.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace caff-sip all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace ccn all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace config-ccn all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>Command</td>
<td>Purpose</td>
<td>Cisco Unity Express EXEC Mode</td>
<td>Cisco Unity Express Configuration Mode</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>trace configapi all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace dbclient all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace dns all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace dns_cache all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace entityType all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace imap all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace management all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace networking all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace ntp all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace smtpclient all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace snmp all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace superthread all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace sysdb all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace udppacer all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>Command</td>
<td>Purpose</td>
<td>Cisco Unity Express EXEC Mode</td>
<td>Cisco Unity Express Configuration Mode</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------------------</td>
<td>------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>trace vmclient all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace voicemail all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace voiceview all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace voiceview-ccn all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
<tr>
<td>trace webInterface all</td>
<td>Do not use except by permission from Cisco Technical Support.</td>
<td>Yes</td>
<td>—</td>
</tr>
</tbody>
</table>
active calls
  restore 263
addressing remote messages 218
administration
  CLI 13
  GU and CLI 21
  GUI 13
Administration via Telephone 108
Administration via Telephone system
  configuring 55
AIM module
  usage 256
  wear 256
application command 201
applications
  deleting 73
atrace.log file 274
attended transfer mode 37
auto attendant
  AvT 61
  configuring 55
  deleting a greeting 62, 64
maximum retries 57
maximum sessions 58
operator extension 57
recording a greeting 57, 61, 63
television number 57
uploading greeting file 61, 63
AvT 55, 108
  recording a greeting 61
backup
  command 258
  FTP server 257
  numbering scheme 260
  offline mode 257
  parameters 258
  restrictions 257, 258
  revision number 257
backup category command 260
backup history report 270
blind addressing 218
blind bye-also transfer mode 37
blind refer transfer mode 37
broadcast expiration time parameter 77
broadcast message MWI status parameter 78
broadcast message recording time, configuring 77
broadcast privilege 108
bulk provisioning 8
bye-also transfer mode 37

call
  displaying by application 245
  displaying by route 247
  implementation ID 249
caller ID information parameter 77
caller recording prompt parameter 78
capacity
  configuring 77
ccn application command 45, 53, 58, 196
Index

ccn call terminate command 249
ccn copy url command 61, 63
ccn delete command 62, 64
ccn rename prompt command 62
ccn subsystem sip command 34
ccn trigger command 64, 67, 200
Cisco Unity Express prompt 204
CLI administration 13, 21
clock timezone command 214
command 79
  application 201
  backup 258
  backup category 260
  ccn application 45, 53, 58, 196
  ccn call terminate 249
  ccn copy url 61, 63
  ccn delete 62, 64
  ccn rename prompt 62
  ccn subsystem sip 34
  ccn trigger 64, 67, 200
  clock timezone 214
  continue 260
  copy ftp 266
  copy running-config 98, 105, 266
  copy startup-config 265
  copy tftp 267
default 196, 201
description 58, 114, 196
enable 225
expiration 115
gateway address 34
gateway port 34
greeting 115
groupname
  config mode 105
  EXEC mode 105
hostname 204
idletimeout 201
ip domain-name 206
ip name-server 206
locale 201
mailbox size 115
maxsessions 53, 58, 64, 67, 196, 201
message size 115
mwri refresh 120
no ccn application 73
no ccn trigger 69, 71, 73
no parameter 201
ntp server 208, 210
offline 260, 263
parameter 45, 58, 196
parameters
  voicemail 53
reload 263
restore id 263
script 196
service-module 20
session 20
show backup 258
show backup history 260, 263
show backup server 263
  show backup server command 260
  show ccn applicable 53
  show ccn application 58, 73, 196
  show ccn call application 245
  show ccn call route 247
  show ccn scripts 196
  show ccn subsystem sip 35
  show ccn trigger 64, 67, 69, 71, 73, 201
  show clock detail 214
  show group detail groupname 105
  show groups 105
  show hosts 204
  show interface ide 0 256
  show ip route 206
  show logs 274
  show ntp configuration 208, 210
  show ntp status 208, 210
show user detail username 98
show users 98
show voicemail 115
telnet 20
troubleshooting
log 274
show 274
trace 274
username
 config mode 98
 EXEC mode 98
voice mailbox unlock 119
voicemail callerid 79
voicemail capacity time 78
voicemail conversation caller recording-prompt 79
voicemail default 79
voicemail mailbox 114
voicemail mailbox-selection 79
voicemail message expiry 78
voicemail operator telephone 79
voicemail recording time 79
command environment 19
commands 14, 271
configuration 272
caller recording prompt 78
running 266
startup 265
TFTP 267
configuration mode
 backup commands 257
definition 19
configurations, copying 265
configuring
 Administration via Telephone 55
 auto attendant 55
 broadcast message MWI status 78
 broadcast message recording time 77
 capacity 77
 DNS server 206
expiration time 77
host name 204
language 77
mailbox selection 78
mailbox size 77
message length 77
multiple triggers 200
MWI lights 44
NTP server 208
operator extension
 parameters
 operator extension 77
recording time 77
voice mail 52
configuring time zone 214
console display, system messages 256
continue command 260
copy ftp command 266
copy running-config command 98, 105, 266
copy startup-config command 265
copy tftp command 267
copying
 configurations 265
copying log files, troubleshooting 272

databases, synchronizing 98
daylight savings time 271
default command 196, 201
default mailbox size 10, 11, 12
default values
 system-wide 77
delete a network location 221
deleting
 triggers 71
deleting applications 73
deleting messages 114
deleting triggers 73
description command 58, 114, 196

differences
   passwords 98, 100, 102
   user IDs 98, 100, 102
disable vCard information 237
distribution list
   everyone 122
distribution lists
   recursive 122
DNS server
   resolving host name to IP address 208

DNS server, configuring 206

E

enable command 225
everyone distribution list 122
EXEC mode, definition 19
expiration command 115
expiration time
   configuring 77
expired messages 114
expiry timer 114
expiry, message 77
extension
   group 104
extension for message storage 81
external syslog server 256

F

factory-set system limits 10
file
   atrace.log 274
   messages.log 256, 274
file size
   messages.log 274

prompt 61

script 63
Flash memory 266
   log and trace 274
flash memory 19
Flash memory module
   wear 256
From field address 163, 167
FTP configuration 266
FTP server 8
   backup and restore 257

G

G711 ulaw 61
gateway address command 34
gateway port command 34
GDM 113
general delivery mailboxes 113
GMS
   telephone numbers 55
greeting command 115
greetings
   deleting a file 62, 64
   uploading 61, 63

group
   definition 104
   mailbox 104
   owner 104

groupname command
   config mode 105
EXEC mode 105

groups
   extension 104
GUI administration 13, 21

H

host name 34
Index

host name configuration 204
hostname command 204

I
idletimeout 24, 67, 200
idletimeout command 201
IMAP
  mandatory message expiry 155
implementation ID 249
initialization wizard 21
IP
  addressing 271
  default-gateway 271
  unnumbered 271
ip domain-name command 206
ip name-server command 206
IP network access 8
locale command 201
location spoken name, uploading and downloading 226, 234
log files
  system 8
  troubleshooting 270, 272
loop, voice mail 77
lost data, troubleshooting 272
LRD 78
LRU
  maximum capacity 239

M
mailbox
  zerooutnumber 115
mailbox mask 78
mailbox selection 81
mailbox selection, configuring 78
mailbox size
  configuring 77
  default 10, 11, 12
mailbox size command 115
mailboxxes 114
  expiration time 114
  general delivery 113
  group 104
  limitations 113, 114
  message size 114
  number of 10, 11, 12
  number supported 98
  personal 113
  storage size 114
telephones supported 114
types 113
unlocking 119
ManagePrompts privilege 108
ManagePublicList privilege 108
mandatory message expiry 77

J
JTAPI
  deleting triggers 71
  triggers 66
JTAPI route point 200

L
language
  configuring 77
last redirected number 78
last-redirect parameter 81
license
  SKUs 8
Linux software 7
list
  everyone 122
lists
recursive 122

Cisco Unity Express 2.3 CLI Administrator Guide 283
IMAP messages 155
mask, mailbox 78
maximum
  sessions
    trigger 24, 67
maximum callers 64, 200
maximum number of triggers 10, 200
maximum retries
  auto attendant 57
maximum sessions 64, 200
  auto attendant 58
maximum users
  voice mail 52
maxsessions command 53, 58, 64, 67, 196, 201
members of a group
  definition 104
message
  tutorial 115
message length
  configuring 77
message recording time, configuring 77
message size command 115
message storage extension 81
message, mandatory expiry 77
messages
  expired 114
messages.log file 256, 274
messages.log, file size 274
mode
  offline 260
modes, EXEC and configuration 19
MWI lights
  configuring 44
  off extension 45
  on extension 45
  refresh 44
  refreshing 120
  troubleshooting 273
  mwi refresh command 120
MWI status, broadcast message 78
N
NDR 218
network location
  delete 221
network module
  spare 8
network module card
  processor 7
  software 7
networked configurations 217
networking 13
no ccn application command 73
no ccn trigger command 69, 71, 73
no parameter command 201
Non Deliver Record 218
NTP server
  removing 210
ntp server command 208, 210
NTP server, configuring 208
number of
  mailboxes 10, 11, 12
  ports 10, 11, 12
numbering scheme, backup files 260
O
OCN 78
offline command 260, 263
offline mode 260, 263
  backup commands 257
OIR
  troubleshooting 272
operator extension
  auto attendant 57
  configuring 77
original called number 78
original-called parameter 81
owner of a group 104

P

parameter
  broadcast expiration time 77
caller ID 77
caller recording prompt 78
parameter command 45, 58, 196
parameters
  backup 258
capacity 77
expiration time 77
language 77
last-redirect 81
mailbox selection 78
mailbox size 77
message length 77
original-called 81
recording time 77
system-wide
  configuring 77
parameters command
  voicemail 53
passwords
  characters allowed 98, 100, 102
personal mailboxes 113
pinging internal address 271
port, implementation ID 249
ports
  number of 10, 11, 12
privilege
  broadcast 108
ManagePrompts 108
ManagePublicList 108
superuser 108
ViewPrivateList 108
prompt
  file size 61
  record your message 78
prompt, formation 204
provisioning
  bulk 8
proxy server 34

R

rebooting network module 270, 271
rebooting router 270, 271
record your message prompt 78
recording
  AvT 61
  recording a greeting 57
    auto attendant 61, 63
recording prompt parameter 78
recording time
  configuring 77
recording time, configuring 77
recursive distribution list 122
refreshing MWI lights 44, 120
reload command 263
removing an NTP server 210
reports
  backup 270
call history 270
CPU usage 270
mailbox 270
mailbox size 270
memory 270
message status 270
restore 270
system 8
  system hardware 270
resolving host name to IP address 208
restore
  active calls 263
FTP server 257
procedure 263
restrictions 257, 258
restore history report 270
restore id command 263
restrictions
backup and restore 257, 258

S
saving data, troubleshooting 272
script
file size 63
script command 196
semi-attended transfer mode 37
server
syslog 256
service-module command 20
service-module, troubleshooting 271
session command 20
sessions 64, 200
setting daylight savings time 271
severity level, system messages 256
show backup command 258
show backup history command 260, 263
show backup server command 263
show ccn applicable 53
show ccn application command 58, 73, 196
show ccn call application command 245
show ccn call route command 247
show ccn scripts command 196
show ccn subsystem sip command 35
show ccn trigger command 64, 67, 69, 71, 73, 201
show clock detail command 214
show group detail groupname command 105
show groups command 105
show hosts command 204
show interface ide 0 command 256
show ip route command 206
show logs command 274
show ntp configuration command 208, 210
show ntp status command 208, 210
show user detail username command 98
show users command 98
show voicemail command 115
SIP proxy server 34
hostname 34
ports 34
SIP triggers 64
deleting 69
SKUs 10, 11, 12
spare network modules 8
speed of internal line 272
spoken name
distribution list 122
enabling 220, 222
LRU cache 239
network location 226, 234
recording 228
remote user 228
vCard 236
Startup configuration 265
storage extension 81
storage hours 10, 11, 12
superuser privilege 108
synchronizing databases 98
syslog server 256
system access using IP network 8
system capacities 10, 11, 12
system limits
factory set 10
system log files 8
system messages
console display 256
severity 256
system reports 8, 270
system-wide
default values 77
system-wide parameters
  configuring 77

Table
  Table 4 Configuration Task Sequence 22
TCP port 34
telephone number
  auto attendant 57
  triggers 24, 64, 67, 200
telephone numbers
  auto attendant 57
  GMS 55
  voice mail 52
telephones supported for voice mail 114
telnet command 20
telnet session 20
terminating a call 249
terminating VoiceView session 190, 194
TFTP configuration 267
time zone
  configuring 214
timeout 24, 67, 200
total storage hours 10, 11, 12
transfer mode
  attended 37
  blind bye-also 37
  blind refer 37
  semi-attended 37
trigger
  maximum sessions 24, 67
triggers
  auto attendant 64, 66
  configuring multiple 200
deleting 69, 71, 73
  maximum number 10, 200
  sessions 64, 200
  telephone number 24, 64, 67, 200
timeout 24, 67, 200
voice mail 64, 66
troubleshooting
  access to GUI 270
  copying log files 272
  IP address 271
  IP, default-gateway 271
  log files 270
  lost data 272
  MWI lights 273
  OIR 272
  opening a session 271
  pinging internal address 271
  rebooting network module 270, 271
  rebooting router 270, 271
  saving data 272
  service-module status 271
  speed of terminal line 272
  unknown caller 273
  user password 270
  user PIN 270
  users and groups 270
  voice mail 273
TUI
  recording a greeting 61
tutorial command 115

U
UDP port 34
unknown caller
  troubleshooting 273
unlocking a mailbox 119
usage
  Flash memory 256
user IDs
  characters allowed 98, 100, 102
user password, troubleshooting 270
user PIN, troubleshooting 270
username command
  config mode 98
  EXEC mode 98
users
  adding 98
  modifying 98
  number supported 98

V
vCard
  disable 237
  spoken name 236
ViewPrivateList privilege 108
voice mail
  configuring 52
  conflicting extensions 77
  networking 13
  telephone numbers 52
  telephones supported 114
  troubleshooting 273
voice mail loop 77
voice mailbox unlock command 119
Voice Profile for Internet Mail protocol 217
voicemail
  maximum users 52
  voicemail callerid command 79
  voicemail capacity time command 78
  voicemail conversation caller recording-prompt 79
  voicemail default command 79
  voicemail mailbox command 114
  voicemail mailbox mask 78
  voicemail mailbox-selection command 79
  voicemail message expiry command 78
  voicemail operator telephone command 79
  voicemail recording time command 79
VoiceView
  terminating a session 190, 194

VPIM 217

W
wav file 61
wear
  Flash memory 256

Z
zerooutnumber command 115