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Preface

Purpose

This document provides information about using the Cisco Unified Communications Operating System graphical user interface (GUI).

For information about the command line interface (CLI), which can be used to perform many common system- and network-related tasks, see the Command Line Interface Reference Guide for Cisco Unified Communications Solutions.

Audience

This document provides information for network administrators who are responsible for managing and supporting the Cisco Unified Communications Operating System. Network engineers, system administrators, or telecom engineers use this guide to learn about, and administer, the operating system features. This guide requires knowledge of telephony and IP networking technology.

Organization

The following table shows how this guide is organized:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>This chapter provides an overview of the functions that are available through the Cisco Unified Communications Operating System.</td>
</tr>
<tr>
<td>Log in to Cisco Unified Communications Operating System Administration</td>
<td>This chapter provides procedures for logging in to the Cisco Unified Communications Operating System and for recovering a lost Administrator password.</td>
</tr>
<tr>
<td>Status and Configuration</td>
<td>This chapter provides procedures for displaying operating system status and configuration settings.</td>
</tr>
<tr>
<td>Settings</td>
<td>This chapter provides procedures for viewing and changing the Ethernet settings, IP settings, and NTP settings.</td>
</tr>
<tr>
<td>System Restart</td>
<td>This chapter provides procedures for restarting and shutting down the system.</td>
</tr>
</tbody>
</table>
Preface

Related Documentation


Conventions

This document uses the following conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong> font</td>
<td>Commands and keywords are in <strong>boldface</strong>.</td>
</tr>
<tr>
<td><em>italic</em> font</td>
<td>Arguments for which you supply values are in <em>italics</em>.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Elements in square brackets are optional.</td>
</tr>
<tr>
<td>{ x</td>
<td>y</td>
</tr>
<tr>
<td>[ x</td>
<td>y</td>
</tr>
<tr>
<td>string</td>
<td>A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.</td>
</tr>
<tr>
<td><strong>screen</strong> font</td>
<td>Terminal sessions and information the system displays are in <strong>screen</strong> font.</td>
</tr>
<tr>
<td><strong>boldface</strong> <strong>screen</strong> font</td>
<td>Information you must enter is in <strong>boldface</strong> <strong>screen</strong> font.</td>
</tr>
<tr>
<td><em>italic</em> <strong>screen</strong> font</td>
<td>Arguments for which you supply values are in <em>italic</em>* <strong>screen</strong> font.</td>
</tr>
<tr>
<td>^</td>
<td>The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.</td>
</tr>
<tr>
<td>&lt; &gt;</td>
<td>Nonprinting characters, such as passwords, are in angle brackets.</td>
</tr>
</tbody>
</table>

Notes use the following conventions:

**Note**

Means reader take note. Notes contain helpful suggestions or references to material not covered in the publication.
Timesavers use the following conventions:

-timesaver

Timesaver

 Means the described action saves time. You can save time by performing the action described in the paragraph.

Tips use the following conventions:

-tip

Tip

 Means the information contains useful tips.

Cautions use the following conventions:

-caution

Caution

 Means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.

Warnings use the following conventions:

-warning

Warning

 This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What’s New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at


Cisco Product Security Overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

Further information regarding U.S. export regulations may be found at

http://www.access.gpo.gov/bis/ear/ear_data.html
Introduction

For Cisco Unified Communications Manager, you can perform many common system administration functions through the Cisco Unified Communications Operating System.

This chapter comprises the following sections:

- Overview
- Browser Requirements
- Operating System Status and Configuration
- Security Configuration
- Software Upgrades
- Services
- Command Line Interface

Overview

Cisco Unified Communications Operating System Administration allows you to configure and manage the Cisco Unified Communications Operating System. Administration tasks include the following examples:

- Check software and hardware status.
- Check and update IP addresses.
- Ping other network devices.
- Manage NTP servers.
- Upgrade system software and options.
- Manage server security, including IPSec and certificates
- Manage remote support accounts
- Restart the system.

The following sections describe each operating system function in more detail.

Browser Requirements

You can access Cisco Unified Communications Operating System by using the following browsers:
You can access Cisco Unified Communications Operating System with this browser... | ...if you use one of these operating systems
---|---
Microsoft Internet Explorer 8 | • Microsoft XP SP3
| • Microsoft Vista SP2 [or later service pack (SP)]
| • Microsoft Windows 7 with the latest SP
Mozilla Firefox 3.x | • Microsoft XP SP3
| • Microsoft Vista SP2 (or the latest SP)
| • Microsoft Windows 7 with the latest SP
| • Apple MAC OS X with the latest SP
Safari 4.x | Apple MAC OS X

Ensure the URL of the Cisco Unified Communications Operating System server (https://servername) is included in the browser “Trusted Site Zone” or the “Local Intranet Site Zone” for all product features to work correctly.

**Operating System Status and Configuration**

From the **Show** menu, you can check the status of various operating system components, including:
- Cluster and nodes
- Hardware
- Network
- System
- Installed software and options

For more information, see Chapter 3, “Status and Configuration.”

**Settings**

From the **Settings** menu, you can view and update the following operating system settings:
- IP—Updates the IP addresses and Dynamic Host Configuration Protocol (DHCP) client settings that were entered when the application was installed.
- NTP Server settings—Configures the IP addresses of an external NTP server; add or delete an NTP server.
- SMTP settings—Configures the SMTP host that the operating system will use for sending e-mail notifications.

For more information, see Chapter 4, “Settings.”

From the **Settings > Version** window, you can choose from the following options for restarting or shutting down the system:
Switch Versions—Switches the active and inactive disk partitions and restarts the system. You normally choose this option after the inactive partition has been updated and you want to start running a newer software version.

Current Version—Restarts the system without switching partitions.

Shutdown System—Stops all running software and shuts down the server.

**Note**
This command does not power down the server. To power down the server, press the power button.

For more information see Chapter 5, “System Restart.”

### Security Configuration

The operating system security options enable you to manage security certificates and Secure Internet Protocol (IPSec). From the **Security** menu, you can choose the following security options:

- **Certificate Management**—Manages certificates and Certificate Signing Requests (CSR). You can display, upload, download, delete, and regenerate certificates. Through Certificate Management, you can also monitor the expiration dates of the certificates on the server.

- **IPSEC Management**—Displays or updates existing IPSEC policies; sets up new IPSEC policies and associations.

For more information, see Chapter 6, “Security.”

### Software Upgrades

The software upgrade options enable you to upgrade the software version that is running on the operating system or to install specific software options, including Cisco Unified Communications Operating System Locale Installers, dial plans, and TFTP server files.

From the **Install/Upgrade** menu option, you can upgrade system software from either a local disc or a remote server. The upgraded software gets installed on the inactive partition, and you can then restart the system and switch partitions, so the system starts running on the newer software version.

**Note**
You must do all software installations and upgrades by using the software upgrades features that are included in the Cisco Unified Communications Operating System GUI and command line interface. The system can upload and process only software that Cisco Systems approved. You cannot install or use third-party or Windows-based software applications that you may have been using with a previous version of Cisco Unified Communications Manager.

For more information, see Chapter 7, “Software Upgrades.”

### Services

The application provides the following operating system utilities:

- **Ping**—Checks connectivity with other network devices.
• Remote Support—Sets up an account that Cisco support personnel can use to access the system. This account automatically expires after the number of days that you specify.

For more information, see Chapter 8, “Services.”

Command Line Interface

You can access a command line interface from the console or through a secure shell connection to the server. For more information, refer to the Command Line Interface Reference Guide for Cisco Unified Communications Solutions.
Log in to Cisco Unified Communications Operating System Administration

This chapter describes the procedure for accessing the Cisco Unified Communications Operating System Administration and also provides procedures for resetting a lost password.

This chapter comprises the following sections:
- Logging in to Cisco Unified Communications Operating System Administration, page 2-1
- Resetting Administrator and Security Passwords, page 2-2

Logging in to Cisco Unified Communications Operating System Administration

To access Cisco Unified Communications Operating System Administration and log in, follow this procedure.

**Procedure**

**Step 1**
Log in to Cisco Unified Communications Manager Administration.

**Step 2**
From the Navigation menu in the upper, right corner of the Cisco Unified Communications Manager Administration window, choose Cisco Unified OS Administration and click Go.

The Cisco Unified Communications Operating System Administration Logon window displays.

**Note**
You can also access Cisco Unified Communications Operating System Administration directly by entering the following URL:

http://server-name/cmplatform

**Step 3**
Enter your Administrator username and password.
Chapter 2  Log in to Cisco Unified Communications Operating System Administration

Resetting Administrator and Security Passwords

If you lose the administrator password or security password, use the following procedure to reset these passwords.

To perform the password reset process, you must be connected to the system through the system console, that is, you must have a keyboard and monitor connected to the server. You cannot reset a password when connected to the system through a secure shell session.

Caution The security password on all nodes in a cluster must match. Change the security password on all machines, or the cluster nodes will not communicate.

Caution You must reset each server in a cluster after you change its security password. Failure to reboot the servers (nodes) causes system service problems and problems with the Cisco Unified Communications Manager Administration windows on the subscriber servers.

Note During this procedure, you must remove and then insert a valid CD or DVD in the disk drive to prove that you have physical access to the system.

Procedure

Step 1 Log in to the system with the following username and password:
  - Username: pwrecovery
  - Password: pwreset

The Welcome to platform password reset window displays.

Step 2 Press any key to continue.

Step 3 If you have a CD or DVD in the disk drive, remove it now.

Step 4 Press any key to continue.

The system tests to ensure that you have removed the CD or DVD from the disk drive.

Step 5 Insert a valid CD or DVD into the disk drive.

Note For this test, you must use a data CD, not a music CD.
The system tests to ensure that you have inserted the disk.

**Step 6**  
After the system verifies that you have inserted the disk, you get prompted to enter one of the following options to continue:

- Enter `a` to reset the administrator password.
- Enter `s` to reset the security password.
- Enter `q` to quit.

**Step 7**  
Enter a new password of the type that you chose.

**Step 8**  
Reenter the new password.

The password must contain at least 6 characters. The system checks the new password for strength. If the password does not pass the strength check, you get prompted to enter a new password.

**Step 9**  
After the system verifies the strength of the new password, the password gets reset, and you get prompted to press any key to exit the password reset utility.
CHAPTER 3

Status and Configuration

This chapter provides information on administering the system and contains the following topics:

- Cluster Nodes
- Hardware Status
- Network Configuration
- Installed Software
- System Status
- IP Preferences

Cluster Nodes

To view information on the nodes in the cluster, follow this procedure:

Procedure

| Step 1 | From the Cisco Unified Communications Operating System Administration window navigate to Show > Cluster. The Cluster Nodes window displays. |
| Step 2 | For a description of the fields on the Cluster Nodes window, see Table 3-1. |

Table 3-1  Cluster Nodes Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostname</td>
<td>Displays the complete hostname of the server.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Displays the IP address of the server.</td>
</tr>
<tr>
<td>Alias</td>
<td>Displays the alias name of the server, when defined.</td>
</tr>
<tr>
<td>Type of Node</td>
<td>Indicates whether the server is a publisher node or a subscriber node.</td>
</tr>
</tbody>
</table>
Hardware Status

To view the hardware status, follow this procedure:

Procedure

Step 1  From the Cisco Unified Communications Operating System Administration window, navigate to Show > Hardware.

The Hardware status window displays.

Step 2  For descriptions of the fields on the Hardware Status window, see Table 3-2.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform Type</td>
<td>Displays the model identity of the platform server.</td>
</tr>
<tr>
<td>Processor Speed</td>
<td>Displays the processor speed.</td>
</tr>
<tr>
<td>CPU Type</td>
<td>Displays the type of processor in the platform server.</td>
</tr>
<tr>
<td>Memory</td>
<td>Displays the total amount of memory in MBytes.</td>
</tr>
<tr>
<td>Object ID</td>
<td>Displays the object ID.</td>
</tr>
<tr>
<td>OS Version</td>
<td>Displays the operating system version.</td>
</tr>
<tr>
<td>RAID Details</td>
<td>Displays details about the RAID drive, including controller information,</td>
</tr>
<tr>
<td></td>
<td>logical drive information, and physical device information.</td>
</tr>
</tbody>
</table>

Network Configuration

The network status information that displays depends on whether Network Fault Tolerance is enabled. When Network Fault Tolerance is enabled, Ethernet port 1 automatically takes over network communications if Ethernet port 0 fails. If Network Fault Tolerance is enabled, network status information displays for the network ports Ethernet 0, Ethernet 1, and Bond 0. If Network Fault Tolerance is not enabled, status information displays only for Ethernet 0.

To view the network status, follow this procedure:

Procedure

Step 1  From the Cisco Unified Communications Operating System Administration window, navigate to Show > Network.

The Network Settings window displays.

Step 2  See Table 3-3 for descriptions of the fields on the Network Settings window.
Table 3-3  Network Configuration Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet Details</td>
<td></td>
</tr>
<tr>
<td>DHCP</td>
<td>Indicates whether DHCP is enabled for Ethernet port 0.</td>
</tr>
<tr>
<td>Status</td>
<td>Indicates whether the port is Up or Down for Ethernet ports 0 and 1.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Shows the IP address of Ethernet port 0 [and Ethernet port 1 if Network Fault Tolerance (NFT) is enabled].</td>
</tr>
<tr>
<td>IP Mask</td>
<td>Shows the IP mask of Ethernet port 0 (and Ethernet port 1 if NFT is enabled).</td>
</tr>
<tr>
<td>Link Detected</td>
<td>Indicates whether an active link exists.</td>
</tr>
<tr>
<td>Queue Length</td>
<td>Displays the length of the queue.</td>
</tr>
<tr>
<td>MTU</td>
<td>Displays the maximum transmission unit.</td>
</tr>
<tr>
<td>MAC Address</td>
<td>Displays the hardware address of the port.</td>
</tr>
<tr>
<td>Receive Statistics (RX)</td>
<td>Displays information on received bytes, packets, and errors, as well as dropped and overrun statistics.</td>
</tr>
<tr>
<td>Transmit Statistics (TX)</td>
<td>Displays information on transmitted bytes, packets, and errors, as well as dropped, carrier, and collision statistics.</td>
</tr>
<tr>
<td>DNS Details</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>Displays the IP address of the primary domain name server.</td>
</tr>
<tr>
<td>Secondary</td>
<td>Displays the IP address of the secondary domain name server.</td>
</tr>
<tr>
<td>Options</td>
<td>Displays the configured DNS options.</td>
</tr>
<tr>
<td>Domain</td>
<td>Displays the domain of the server.</td>
</tr>
<tr>
<td>Gateway</td>
<td>Displays the IP address of the network gateway on Ethernet port 0.</td>
</tr>
</tbody>
</table>

Installed Software

To view the software versions and installed software options, follow this procedure:

Procedure

Step 1  From the Cisco Unified Communications Operating System Administration window, navigate to Show > Software.

The Software Packages window displays.
Step 2  For a description of the fields on the Software Packages window, see Table 3-4.

### Table 3-4  Software Packages Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition Versions</td>
<td>Displays the software version that is running on the active and inactive partitions.</td>
</tr>
<tr>
<td>Active Version Installed Software Options</td>
<td>Displays the versions of installed software options, including locales and dial plans, that are installed on the active version.</td>
</tr>
<tr>
<td>Inactive Version Installed Software Options</td>
<td>Displays the versions of installed software options, including locales and dial plans, that are installed on the inactive version.</td>
</tr>
</tbody>
</table>

## System Status

To view the system status, follow this procedure:

### Procedure

**Step 1**  From the Cisco Unified Communications Operating System Administration window, navigate to **Show > System**.

The System Status window displays.

**Step 2**  See Table 3-5 for descriptions of the fields on the Platform Status window.

### Table 3-5  System Status Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Name</td>
<td>Displays the name of the Cisco MCS host where Cisco Unified Communications Operating System is installed.</td>
</tr>
<tr>
<td>Date</td>
<td>Displays the date and time based on the continent and region that were specified during operating system installation.</td>
</tr>
<tr>
<td>Time Zone</td>
<td>Displays the time zone that was chosen during installation.</td>
</tr>
<tr>
<td>Locale</td>
<td>Displays the language that was chosen during operating system installation.</td>
</tr>
<tr>
<td>Product Version</td>
<td>Displays the operating system version.</td>
</tr>
<tr>
<td>Platform Version</td>
<td>Displays the platform version.</td>
</tr>
<tr>
<td>Uptime</td>
<td>Displays system uptime information.</td>
</tr>
<tr>
<td>CPU</td>
<td>Displays the percentage of CPU capacity that is idle, the percentage that is running system processes, and the percentage that is running user processes.</td>
</tr>
</tbody>
</table>
You can use the IP Preferences window to display a list of registered ports that the system can use. The IP Preferences window contains the following information:

- Application
- Protocol
- Port Number
- Type
- Translated Port
- Status
- Description

To access the IP Preferences window, follow this procedure.

**Procedure**

**Step 1**
From the Cisco Unified Communications Operating System Administration window, choose **Show > IP Preferences**.

The IP Preferences window displays. Records from an active (prior) query may also display in the window.

**Step 2**
To find all records in the database, ensure the dialog box is empty; go to **Step 3**.

To filter or search records
- From the first drop-down list box, select a search parameter.
- From the second drop-down list box, select a search pattern.
- Specify the appropriate search text, if applicable.

**Note**
To add additional search criteria, click the + button. When you add criteria, the system searches for a record that matches all criteria that you specify. To remove criteria, click the – button to remove the last added criterion or click the **Clear Filter** button to remove all added search criteria.

**Step 3**
Click **Find**.
All matching records display. You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box.

For a description of the IP Preferences fields, see

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Name of the application using (listening on) the port.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Protocol used on this port (TCP, UDP, and so on).</td>
</tr>
<tr>
<td>Port Number</td>
<td>Numeric port number.</td>
</tr>
<tr>
<td>Type</td>
<td>Type of traffic allowed on this port:</td>
</tr>
<tr>
<td></td>
<td>• Public—All traffic allowed</td>
</tr>
<tr>
<td></td>
<td>• Translated—All traffic allowed but forwarded to a different port</td>
</tr>
<tr>
<td></td>
<td>• Private—Traffic only allowed from a defined set of remote servers, for example, other nodes in the cluster</td>
</tr>
<tr>
<td>Translated Port</td>
<td>Traffic destined for this port get forwarded to the port listed in the Port Number column. This field applies to Translated type ports only.</td>
</tr>
<tr>
<td>Status</td>
<td>Status of port usage:</td>
</tr>
<tr>
<td></td>
<td>• Enabled—in use by the application and opened by the firewall</td>
</tr>
<tr>
<td></td>
<td>• Disabled—Blocked by the firewall and not in use</td>
</tr>
<tr>
<td>Description</td>
<td>Brief description of how the port is used.</td>
</tr>
</tbody>
</table>
Settings

Use the Settings options to display and change IP settings, host settings, and Network Time Protocol (NTP) settings.

This chapter contains the following sections:

- IP Settings, page 4-1
- NTP Servers, page 4-4
- SMTP Settings, page 4-5
- Time Settings, page 4-7

IP Settings

The IP Settings options allow you to view and change IP and port setting for the Ethernet connection and, on subsequent nodes, to set the IP address of the publisher.

This section contains the following topics:

- Ethernet Settings, page 4-1
- Ethernet IPv6 Configuration Settings, page 4-2
- Publisher Settings, page 4-3
- Changing IP Address on a Subsequent Cisco Unified Communications Manager Node, page 4-4

Ethernet Settings

The IP Settings window indicates whether Dynamic Host Configuration Protocol (DHCP) is active and also provides the related Ethernet IP addresses, as well as the IP address for the network gateway.

All Ethernet settings apply only to Eth0. You cannot configure any settings for Eth1. The Maximum Transmission Unit (MTU) on Eth0 defaults to 1500.

To view or change the IP settings, follow this procedure:

Procedure

Step 1 From the Cisco Unified Communications Operating System Administration window, navigate to Settings > IP > Ethernet.
The Ethernet Settings window displays.

**Step 2**
To modify the Ethernet settings, enter the new values in the appropriate fields. For a description of the fields on the Ethernet Settings window, see Table 4-1.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHCP</td>
<td>Indicates whether DHCP is Enabled or Disabled.</td>
</tr>
</tbody>
</table>
| Hostname | Displays the host name of the server.  
**Note** If you run Cisco Unified Communications Manager on a virtualized server and you change this value, you must obtain a replacement license file that is registered to the calculated license MAC based on the new value. |
| IP Address | Displays the IP address of the system.  
**Note** If you run Cisco Unified Communications Manager on a virtualized server and you change this value, you must obtain a replacement license file that is registered to the calculated license MAC based on the new value. |
| Subnet Mask | Displays the IP subnet mask address. |
| Default Gateway | Shows the IP address of the network gateway. |

**Ethernet IPv6 Configuration Settings**

Use the following procedure to enable and configure IPv6 on the server.

All Ethernet settings apply only to Eth0. You cannot configure any settings for Eth1. The Maximum Transmission Unit (MTU) on Eth0 defaults to 1500.
The Ethernet IPv6 Configuration window displays.

**Step 2**
To modify the Ethernet settings, enter the new values in the appropriate fields. For a description of the fields on the Ethernet IPv6 Configuration window, see Table 4-2.

**Step 3**
To preserve your changes, click **Save**.

**Note**
If you check the Update with Reboot check box, the system reboots after you click Save. For the IPv6 settings to take effect, you must reboot the system.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable IPv6</td>
<td>Check this check box to enable IPv6 on the server.</td>
</tr>
<tr>
<td>Address Source</td>
<td>Choose one of the following IP address sources:</td>
</tr>
<tr>
<td></td>
<td>• Router Advertisement</td>
</tr>
<tr>
<td></td>
<td>• DHCP</td>
</tr>
<tr>
<td></td>
<td>• Manual Entry/Mask</td>
</tr>
<tr>
<td></td>
<td>Be aware that the three IP address sources are mutually exclusive.</td>
</tr>
<tr>
<td>Note</td>
<td>Unless you specify Manual Entry, the IP Address and Mask fields remain read only.</td>
</tr>
<tr>
<td>IPv6 Address</td>
<td>If you chose Manual Entry, enter the IPv6 address of the server; for example:</td>
</tr>
<tr>
<td>IPv6 Mask</td>
<td>If you chose Manual Entry, enter the IPv6 mask; for example:</td>
</tr>
<tr>
<td></td>
<td>64</td>
</tr>
<tr>
<td>Update with Reboot</td>
<td>If you want the system to reboot immediately after you click Save, check this check box. If you want to reboot later, leave the check box blank.</td>
</tr>
<tr>
<td>Note</td>
<td>For the IPv6 settings to take effect, you must reboot the system.</td>
</tr>
</tbody>
</table>

**Publisher Settings**

On subsequent or subscriber nodes, you can view or change the IP address of the first node or publisher for the node.

**Note**
For detailed instructions about changing the IP address and hostname of servers in a cluster, see Changing the IP Address and Host Name for Cisco Unified Communications Manager Release 8.5(1) at http://cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html.

To view or change the publisher IP settings, follow this procedure:
Chapter 4  Settings

NTP Servers

Procedure

Step 1  From the Cisco Unified Communications Operating System Administration window, navigate to Settings > IP > Publisher.

The Publisher Settings window displays.

Note  You can only view and change the publisher IP address on subsequent nodes of the cluster, not on the publisher itself.

Step 2  Enter the new publisher IP address.

Step 3  Click Save.

Changing IP Address on a Subsequent Cisco Unified Communications Manager Node

If the IP address of the first Cisco Unified Communications Manager node gets changed while a subsequent node is offline, you may not be able to log in to Cisco Unified Communications Manager Administration on the subsequent node. If this occurs, follow this procedure:

Procedure

Step 1  Log in directly to operating system administration on the subsequent node by using the following IP address:

   http://server-name/iptplatform

where server-name specifies the host name or IP address of the subsequent node.

Step 2  Enter your Administrator user name and password and click Submit.

Step 3  Navigate to Settings > IP > Publisher.

Step 4  Enter the new IP address for the publisher and click Save.

Step 5  Restart the subsequent node.

NTP Servers

Ensure that external NTP servers are stratum 9 or higher (1-9). To add, delete, or modify an external NTP server, follow this procedure:

Note  You can only configure the NTP server settings on the first node or publisher.
SMTP Settings

The SMTP Settings window allows you to view or set the SMTP hostname and indicates whether the SMTP host is active.

Tip
If you want the system to send you e-mail, you must configure an SMTP host.

To access the SMTP settings, follow this procedure:
Procedure

Step 1  From the Cisco Unified Communications Operating System Administration window, navigate to Settings > SMTP. The SMTP Settings window displays.

Step 2  Enter or modify the SMTP hostname or IP address.

Step 3  Click Save.
Time Settings

To manually configure the time, follow this procedure:

**Note**
Before you can manually configure the server time, you must delete any NTP servers that you have configured. See the “NTP Servers” section on page 4-4 for more information.

**Caution**
If you enter a time that is before the time when Cisco Unified Communications Manager was installed on the server, the digital certificates that the server uses for security become invalid, causing the web server (Tomcat) to stop working. If this happens, you must regenerate the certificates.

**Procedure**

- **Step 1** From the Cisco Unified Communications Operating System Administration window, navigate to **Settings > Time**.
- **Step 2** Enter the date and time for the system.
- **Step 3** Click **Save**.
- **Step 4** On a Cisco Unity Connection server, if you changed the date or if you changed the time by more than two minutes, use the CLI command **utils system restart** to restart the server.
System Restart

This section provides procedures for using the following restart options:

- Switch Versions and Restart
- Restart Current Version
- Shut Down the System

Switch Versions and Restart

You can use this option both when you are upgrading to a newer software version and when you need to fall back to an earlier software version. To shut down the system that is running on the active disk partition and then automatically restart the system by using the software version on the inactive partition, follow this procedure:

---

**Note**

If you downgrade a cluster to a nonsecure previous release of Cisco Unified Communications Manager (releases prior to Release 8.0), you must prepare the cluster for rollback before you switch versions. If you do not prepare the cluster for rollback before you revert to a previous release, you will have to manually delete the ITL file on each Cisco Unified IP Phone in the system. For more information, see Chapter 2, “Security by Default,” in the *Cisco Unified Communications Manager Security Guide*.

---

**Caution**

This procedure causes the system to restart and become temporarily out of service.

---

**Procedure**

**Step 1**

From the Cisco Unified Communications Operating System Administration window, navigate to Settings > Version.

The Version Settings window, which shows the software version on both the active and inactive partitions, displays.

**Step 2**

To switch versions and restart, click **Switch Versions**. To stop the operation, click **Cancel**.

If you click **Switch Version**, the system restarts, and the partition that is currently inactive becomes active.
Restart Current Version

To restart the system on the current partition without switching versions, follow this procedure:

⚠️ Caution
This procedure causes the system to restart and become temporarily out of service.

Procedure

Step 1
From the Cisco Unified Communications Operating System Administration window, navigate to **Settings > Version**.
The Version Settings window, which shows the software version on both the active and inactive partitions, displays.

Step 2
To restart the system, click **Restart** or, to stop the operation, click **Cancel**.
If you click **Restart**, the system restarts on the current partition without switching versions.

Shut Down the System

⚠️ Caution
Do not press the power button on the server to shut down the server or to reboot the server. If you do, you may accidentally corrupt the file system, which may prevent you from being able to reboot your server.

To shut down the system, follow Procedure 1 or Procedure 2.

⚠️ Caution
This procedure causes the system to shut down.

Procedure 1

Step 1
From the Cisco Unified Communications Operating System Administration window, navigate to **Settings > Version**.
The Version Settings window, which shows the software version on both the active and inactive partitions, displays.

Step 2
To shut down the system, click **Shutdown** or, to stop the operation, click **Cancel**.
If you click **Shutdown**, the system halts all processes and shuts down.

Note
The hardware may require several minutes to power down.
Procedure 2 (Alternative to Procedure 1)

**Step 1** Run the CLI command `utils system shutdown` or the command `utils system restart`. For information on how to run CLI commands, refer to the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions.*
Security

This chapter describes Certificate Management and IPSec Management and provides procedures for performing the following tasks:

- Set Internet Explorer Security Options
- Manage Certificates and Certificate Trust Lists
- IPSEC Management
- Bulk Certificate Management

Set Internet Explorer Security Options

To download certificates from the server, ensure your Internet Explorer security settings are configured as follows:

Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Start Internet Explorer.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Navigate to Tools &gt; Internet Options.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Click the Advanced tab.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Scroll down to the Security section on the Advanced tab.</td>
</tr>
<tr>
<td>Step 5</td>
<td>If necessary, clear the Do not save encrypted pages to disk check box.</td>
</tr>
<tr>
<td>Step 6</td>
<td>Click OK.</td>
</tr>
</tbody>
</table>

Manage Certificates and Certificate Trust Lists

The following topics describe the functions that you can perform from the Certificate Management menu:

- Display Certificates
- Download a Certificate
- Delete and Regenerate a Certificate
Upload a Certificate or Certificate Trust List

Using Third-Party CA Certificates

Note
To access the Security menu items, you must log in to Cisco Unified Communications Operating System Administration again by using your administrator password.

Display Certificates

To display existing certificates, follow this procedure:

Procedure

Step 1 Navigate to Security > Certificate Management.  
The Certificate List window displays.

Step 2 You can use the Find controls to filter the certificate list.

Step 3 To view details of a certificate or trust store, click its file name.  
The Certificate Configuration window displays information about the certificate.

Step 4 To return to the Certificate List window, select Back To Find/List in the Related Links list; then, click Go.

Download a Certificate

To download a certificate from the Cisco Unified Communications Operating System to your PC, follow this procedure:

Procedure

Step 1 Navigate to Security > Certificate Management.  
The Certificate List window displays.

Step 2 You can use the Find controls to filter the certificate list.

Step 3 Click the file name of the certificate.  
The Certificate Configuration window displays.

Step 4 Click Download.

Step 5 In the File Download dialog box, click Save.

Delete and Regenerate a Certificate

These sections describe deleting and regenerating a certificate:
Deleting a Certificate

To delete a trusted certificate, follow this procedure:

⚠️ **Caution**
Deleting a certificate can affect your system operations. Any existing CSR for the certificate that you choose from the Certificate list gets deleted from the system, and you must generate a new CSR. For more information, see the “Generating a Certificate Signing Request” procedure on page 6-7.

**Procedure**

| Step 1 | Navigate to **Security > Certificate Management**.  
The Certificate List window displays. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>You can use the Find controls to filter the certificate list.</td>
</tr>
</tbody>
</table>
| Step 3 | Click the file name of the certificate or CTL.  
The Certificate Configuration window displays. |
| Step 4 | Click **Delete**. |

Regenerating a Certificate

To regenerate a certificate, follow this procedure:

📝 **Note**
For more information about regenerating certificates, see Chapter 3, “Security by Default,” in the *Cisco Unified Communications Manager Security Guide*.

⚠️ **Caution**
Regenerating a certificate can affect your system operations.

**Procedure**

| Step 1 | Navigate to **Security > Certificate Management**.  
The Certificate List window displays. |
|--------|------------------------------------------------------------------------------------------------|
| Step 2 | Click **Generate New**.  
The Generate Certificate dialog box opens. |
| Step 3 | Choose a certificate name from the Certificate Name list. For a description of the certificate names that display, see **Table 6-1**. |
| Step 4 | Click **Generate New**. |
After you regenerate certificates in Cisco Unified Communications Operating System, you must perform a backup so that the latest backup contains the regenerated certificates. If your backup does not contain the regenerated certificates and you must perform restoration tasks for any reason, you must manually unlock each phone in your system so that the phone can register with Cisco Unified Communications Manager. For information on performing a backup, refer to the *Disaster Recovery System Administration Guide*.

Table 6-1  Certificate Names and Descriptions

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tomat</td>
<td>This self-signed root certificate gets generated during installation for the HTTPS server.</td>
</tr>
<tr>
<td>ipsec</td>
<td>This self-signed root certificate gets generated during installation for IPSec connections with MGCP and H.323 gateways.</td>
</tr>
<tr>
<td>CallManager</td>
<td>This self-signed root certificate automatically installs when you install Cisco Unified Communications Manager. This certificate provides server identification, including the server name and the Global Unique Identifier (GUID).</td>
</tr>
<tr>
<td>CAPF</td>
<td>The system copies this root certificate to your server or to all servers in the cluster after you complete the Cisco CTL client configuration.</td>
</tr>
<tr>
<td>TVS</td>
<td>This is a self-signed root certificate.</td>
</tr>
</tbody>
</table>

Upload a Certificate or Certificate Trust List

Caution

Uploading a new certificate or certificate trust list (CTL) file can affect your system operations. After you upload a new certificate or certificate trust list, you must restart the CiscoCallManager service by navigating to *Cisco Unified Serviceability > Tools > Service Activation*. For more information, see the *Cisco Unified Serviceability Administration Guide*.

Note

The system does not distribute trust certificates to other cluster nodes automatically. If you need to have the same certificate on more than one node, you must upload the certificate to each node individually.

These sections describe how to upload a CA root certificate, application certificate, or CTL file to the server:

- Upload a Certificate
- Upload a Certificate Trust List
- Upload a Directory Trust Certificate
Upload a Certificate

Procedure


Step 2 Click Upload Certificate. The Upload Certificate dialog box opens.

Step 3 Select the certificate name from the Certificate Name list.

Step 4 If you are uploading an application certificate that was issued by a third-party CA, enter the name of the CA root certificate in the Root Certificate text box. If you are uploading a CA root certificate, leave this text box empty.

Step 5 Select the file to upload by doing one of the following steps:

- In the Upload File text box, enter the path to the file.
- Click the Browse button and navigate to the file; then, click Open.

Step 6 To upload the file to the server, click the Upload File button.

Upload a Certificate Trust List

Procedure


Step 2 Click Upload Certificate. The Upload Certificate Trust List dialog box opens.

Step 3 Select the certificate name from the Certificate Name list.

Step 4 If you are uploading an application certificate that was issued by a third-party CA, enter the name of the CA root certificate in the Root Certificate text box. If you are uploading a CA root certificate, leave this text box empty.

Step 5 Select the file to upload by doing one of the following steps:

- In the Upload File text box, enter the path to the file.
- Click the Browse button and navigate to the file; then, click Open.

Step 6 To upload the file to the server, click the Upload File button.

Upload a Directory Trust Certificate

Procedure

Step 1 Navigate to Security > Certificate Management.
The Certificate List window displays.

**Step 2** Click **Upload Certificate**.

The Upload Certificate Trust List dialog box opens.

**Step 3** Select **directory-trust** from the **Certificate Name** list.

**Step 4** Enter the file to upload in the **Upload File** field.

**Step 5** To upload the file, click the **Upload File** button.

**Step 6** Log into Cisco Unified Serviceability.

**Step 7** Navigate to **Tools > Control Center - Feature Services**.

**Step 8** Restart the service **Cisco Dirsync**.

**Step 9** Log in to the Cisco Unified Communications Operating System CLI as an administrator.

**Step 10** To restart the Tomcat service, enter the command **utils service restart Cisco Tomcat**.

**Step 11** After the services have been restarted, you can add the directory agreement for SSL.

---

### Using Third-Party CA Certificates

Cisco Unified Communications Operating System supports certificates that a third-party Certificate Authority (CA) issues with PKCS #10 Certificate Signing Request (CSR). The following table provides an overview of this process, with references to additional documentation:

<table>
<thead>
<tr>
<th>Task</th>
<th>For More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> Generate a CSR on the server.</td>
<td>See the “Generating a Certificate Signing Request” section on page 6-7.</td>
</tr>
<tr>
<td><strong>Step 2</strong> Download the CSR to your PC.</td>
<td>See the “Download a Certificate Signing Request” section on page 6-7.</td>
</tr>
<tr>
<td><strong>Step 3</strong> Use the CSR to obtain an application certificate from a CA.</td>
<td>Get information about obtaining application certificates from your CA. See “Obtaining Third-Party CA Certificates” section on page 6-8 for additional notes.</td>
</tr>
<tr>
<td><strong>Step 4</strong> Obtain the CA root certificate.</td>
<td>Get information about obtaining a root certificate from your CA. See “Obtaining Third-Party CA Certificates” section on page 6-8 for additional notes.</td>
</tr>
<tr>
<td><strong>Step 5</strong> Upload the CA root certificate to the server.</td>
<td>See the “Upload a Certificate” section on page 6-5.</td>
</tr>
<tr>
<td><strong>Step 6</strong> Upload the application certificate to the server.</td>
<td>See the “Upload a Certificate” section on page 6-5.</td>
</tr>
</tbody>
</table>
## Chapter 6  Security

### Manage Certificates and Certificate Trust Lists

#### Generating a Certificate Signing Request

To generate a Certificate Signing Request (CSR), follow these steps:

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Task</th>
<th>For More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Navigate to Security &gt; Certificate Management.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Certificate List window displays.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Click Generate CSR.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Generate Certificate Signing Request dialog box opens.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Select the certificate name from the Certificate Name list.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> For the current release of the Cisco Unified Operating System, the Directory option no longer displays in the list of Certificate Names. However, you can still upload a Directory Trust certificate from a previous release, which is required for the DirSync service to work in Secure mode.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Click Generate CSR.</td>
<td></td>
</tr>
</tbody>
</table>

#### Download a Certificate Signing Request

To download a Certificate Signing Request, follow this procedure:

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Task</th>
<th>For More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Navigate to Security &gt; Certificate Management.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Certificate List window displays.</td>
<td></td>
</tr>
</tbody>
</table>
Step 2  Click **Download CSR**.

The Download Certificate Signing Request dialog box opens.

Step 3  Select the certificate name from the **Certificate Name** list.

Step 4  Click **Download CSR**.

Step 5  In the File Download dialog box, click **Save**.

---

**Obtaining Third-Party CA Certificates**

To use an application certificate that a third-party CA issues, you must obtain both the signed application certificate and the CA root certificate from the CA. Get information about obtaining these certificates from your CA. The process varies among CAs.

CAPF and Cisco Unified Communications Manager CSRs include extensions that you must include in your request for an application certificate from the CA. If your CA does not support the ExtensionRequest mechanism, you must enable the X.509 extensions that are listed on the final page of the CSR generation process.

Cisco Unified Communications Operating System generates certificates in DER and PEM encoding formats and generates CSRs in PEM encoding format. It accepts certificates in DER and PEM encoding formats.

For all certificate types except CAPF, obtain and upload a CA root certificate and an application certificate on each node.

For CAPF, obtain and upload a CA root certificate and an application certificate only on the first node.

CAPF and Cisco Unified Communications Manager CSRs include extensions that you must include in your request for an application certificate from the CA. If your CA does not support the ExtensionRequest mechanism, you must enable the X.509 extensions, as follows:

- The CAPF CSR uses the following extensions:
  
  X509v3 extensions:
  X509v3 Key Usage:
  Digital Signature, Certificate Sign
  X509v3 Extended Key Usage:
  TLS Web Server Authentication, IPsec End System

- The CSRs for Cisco Unified Communications Manager, Tomcat, and IPSec use the following extensions:
  
  X509v3 Key Usage:
  Digital Signature, Key Encipherment, Data Encipherment, Key Agreement
  X509v3 Extended Key Usage:
  TLS Web Server Authentication, TLS Web Client Authentication, IPsec End System

Upload the CA root certificate of the CA that signed an application certificate. If a subordinate CA signs an application certificate, you must upload the CA root certificate of the subordinate CA, not the root CA.

You upload CA root certificates and application certificates by using the same Upload Certificate dialog box. When you upload a CA root certificate, choose the certificate name with the format **certificate type-trust**. When you upload an application certificate, choose the certificate name that only includes the certificate type. For example, choose **tomcat-trust** when you upload a Tomcat CA root certificate; choose **tomcat** when you upload a Tomcat application certificate.
When you upload a CAPF CA root certificate, it gets copied to the CallManager-trust store, so you do not need to upload the CA root certificate for CallManager separately.

## Monitor Certificate Expiration Dates

The system can automatically send you an e-mail when a certificate is close to its expiration date. To view and configure the Certificate Expiration Monitor, follow this procedure:

### Procedure

**Step 1**
To view the current Certificate Expiration Monitor configuration, navigate to Security > Certificate Monitor.

The Certificate Monitor window displays.

**Step 2**
Enter the required configuration information. See Table 6-2 for a description of the Certificate Monitor Expiration fields.

**Step 3**
To save your changes, click Save.

### Table 6-2 Certificate Monitor Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification Start Time</td>
<td>Enter the number of days before the certificate expires that you want to be notified.</td>
</tr>
<tr>
<td>Notification Frequency</td>
<td>Enter the frequency for notification, either in hours or days.</td>
</tr>
<tr>
<td>Enable E-mail Notification</td>
<td>Select the check box to enable e-mail notification.</td>
</tr>
<tr>
<td>Email IDs</td>
<td>Enter the e-mail address to which you want notifications sent.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> For the system to send notifications, you must configure an SMTP host.</td>
</tr>
</tbody>
</table>

## IPSEC Management

The following topics describe the functions that you can perform with the IPSec menu:

- Set Up a New IPSec Policy
- Managing Existing IPSec Policies

**Note**
IPSec does not automatically get set up between nodes in the cluster during installation.

## Set Up a New IPSec Policy

To set up a new IPSec policy and association, follow this procedure:
Note  
Because any changes that you make to an IPSec policy during a system upgrade will get lost, do not modify or create IPSec policies during an upgrade.

Caution  
IPSec, especially with encryption, will affect the performance of your system.

Procedure

Step 1  
Navigate to Security > IPSEC Configuration.  
The IPSEC Policy List window displays.

Step 2  
Click Add New.  
The IPSEC Policy Configuration window displays.

Step 3  
Enter the appropriate information on the IPSEC Policy Configuration window. For a description of the fields on this window, see Table 6-3.

Step 4  
To set up the new IPSec policy, click Save.

Table 6-3  IPSEC Policy and Association Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Group Name</td>
<td>Specifies the name of the IPSec policy group. The name can contain only letters, digits, and hyphens.</td>
</tr>
<tr>
<td>Policy Name</td>
<td>Specifies the name of the IPSec policy. The name can contain only letters, digits, and hyphens.</td>
</tr>
<tr>
<td>Authentication Method</td>
<td>Specifies the authentication method.</td>
</tr>
<tr>
<td>Preshared Key</td>
<td>Specifies the preshared key if you selected Pre-shared Key in the Authentication Name field.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong> Pre-shared IPSec keys can contain alphanumeric characters and hyphens only, not white spaces or any other characters. If you are migrating from a Windows-based version of Cisco Unified Communications Manager, you may need to change the name of your pre-shared IPSec keys, so they are compatible with current versions of Cisco Unified Communications Manager.</td>
</tr>
<tr>
<td>Peer Type</td>
<td>Specifies whether the peer is the same type or different.</td>
</tr>
<tr>
<td>Certificate Name</td>
<td>If you choose Different for the Peer Type, enter the new certificate name.</td>
</tr>
<tr>
<td>Destination Address</td>
<td>Specifies the IP address or FQDN of the destination.</td>
</tr>
<tr>
<td>Destination Port</td>
<td>Specifies the port number at the destination.</td>
</tr>
<tr>
<td>Source Address</td>
<td>Specifies the IP address or FQDN of the source.</td>
</tr>
<tr>
<td>Source Port</td>
<td>Specifies the port number at the source.</td>
</tr>
</tbody>
</table>
Managing Existing IPSec Policies

To display, enable or disable, or delete an existing IPSec policy, follow this procedure:

Table 6-3  IPSec Policy and Association Field Descriptions (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Specifies Transport mode.</td>
</tr>
<tr>
<td>Remote Port</td>
<td>Specifies the port number to use at the destination.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Specifies the specific protocol, or Any:</td>
</tr>
<tr>
<td></td>
<td>• TCP</td>
</tr>
<tr>
<td></td>
<td>• UDP</td>
</tr>
<tr>
<td>Encryption Algorithm</td>
<td>From the drop-down list, choose the encryption algorithm. Choices include</td>
</tr>
<tr>
<td></td>
<td>• DES</td>
</tr>
<tr>
<td></td>
<td>• 3DES</td>
</tr>
<tr>
<td>Hash Algorithm</td>
<td>Specifies the hash algorithm</td>
</tr>
<tr>
<td></td>
<td>• SHA1—Hash algorithm that is used in phase 1 IKE negotiation</td>
</tr>
<tr>
<td></td>
<td>• MD5—Hash algorithm that is used in phase 1 IKE negotiation</td>
</tr>
<tr>
<td>ESP Algorithm</td>
<td>From the drop-down list, choose the ESP algorithm. Choices include</td>
</tr>
<tr>
<td></td>
<td>• NULL_ENC</td>
</tr>
<tr>
<td></td>
<td>• DES</td>
</tr>
<tr>
<td></td>
<td>• 3DES</td>
</tr>
<tr>
<td></td>
<td>• BLOWFISH</td>
</tr>
<tr>
<td></td>
<td>• RIJNDAEL</td>
</tr>
<tr>
<td>Phase One Life Time</td>
<td>Specifies the lifetime for phase One, IKE negotiation, in seconds.</td>
</tr>
<tr>
<td>Phase One DH</td>
<td>From the drop-down list, choose the phase One DH value. Choices include: 2,</td>
</tr>
<tr>
<td></td>
<td>1, and 5</td>
</tr>
<tr>
<td>Phase Two Life Time</td>
<td>Specifies the lifetime for phase Two, IKE negotiation, in seconds.</td>
</tr>
<tr>
<td>Phase Two DH</td>
<td>From the drop-down list, choose the phase Two DH value. Choices include: 2,</td>
</tr>
<tr>
<td></td>
<td>1, and 5</td>
</tr>
</tbody>
</table>

Note

Because any changes that you make to an IPSec policy during a system upgrade will get lost, do not modify or create IPSec policies during an upgrade.
Caution
IPSec, especially with encryption, will affect the performance of your system.

Caution
Any changes that you make to the existing IPSec policies can impact your normal system operations.

Procedure

Step 1
Navigate to Security > IPSEC Configuration.

Note
To access the Security menu items, you must log in to Cisco Unified Communications Operating System Administration again by using your Administrator password.

The IPSEC Policy List window displays.

Step 2
To display, enable, or disable a policy, follow these steps:

a. Click the policy name.
   The IPSEC Policy Configuration window displays.

b. To enable or disable the policy, use the Enable Policy check box.

c. Click Save.

Step 3
To delete one or more policies, follow these steps:

a. Check the check box next to the policies that you want to delete.

   You can click Select All to select all policies or Clear All to clear all the check boxes.

b. Click Delete Selected.

Bulk Certificate Management

To support the Extension Mobility Cross Cluster (EMCC) feature, the system allows you to execute a bulk import and export operation to and from a common SFTP server that has been configured by the cluster administrator.

Note
If you have Cisco Unified IP Phone 8961, 9951, or 9971 Firmware Release 9.0(2) and your cluster is running in mixed mode, the CTLs for all clusters must be signed by a common set of security tokens in order for the EMCC feature to operate. You must have a minimum of one token that is the same among all clusters.

Exporting Certificates

To use Bulk Certificate Management to export certificates, use the following procedure:
Procedure

Step 1  Navigate to Security > Bulk Certificate Management.
The Bulk Certificate Management window displays.

Step 2  Enter the appropriate information on the Bulk Certificate Management window. For a description of the fields on this window, see Table 6-4.

Step 3  To save the values you entered, click Save.

Step 4  To export certificates, click Export.
The Bulk Certificate Export popup window displays.

Step 5  From the drop-down menu, choose the type of certificate you want to export:
- Tomcat
- TFTP
- All

Step 6  Click Export.
The system exports and stores the certificates you chose on the central SFTP server.

Importing Certificates

You can also use the Bulk Certificate Management window to import certificates that you have exported from other clusters. However, before the Import button displays, you must complete the following activities:
- Export the certificates from at least two clusters to the SFTP server.
- Consolidate the exported certificates.

Table 6-4  Bulk Certificate Management Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>Enter the IP address of the common server where you want to export the certificates.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter the port number. Default: 22</td>
</tr>
<tr>
<td>User ID</td>
<td>Enter the User ID you want to use to log into the server.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter the appropriate password.</td>
</tr>
<tr>
<td>Directory</td>
<td>Enter a directory on the server where you want to save the certificates.</td>
</tr>
<tr>
<td>Example:</td>
<td>/users/cisco</td>
</tr>
</tbody>
</table>


Software Upgrades

You can use the Software Upgrades options to perform the following types of installations and upgrades:

- **Install/Upgrade**—Use this option to upgrade the application software, install Cisco Unified Communications Manager Locale Installers and dial plans, and upload and install device packs, phone firmware loads, and other COP files.
- **TFTP File Management**—Use this option to upload various device files for use by the phones to the TFTP server. The TFTP server files that you can upload include custom phone rings, callback tones, and phone backgrounds.

This chapter contains the following sections:

- Pre-Upgrade Tasks, page 7-1
- Software Upgrade Considerations, page 7-2
- Software Upgrade Procedures, page 7-11
- Post-Upgrade Tasks, page 7-15
- Stalled Upgrades, page 7-15
- Reverting to a Previous Version, page 7-16
- Installing COP Files, Dial Plans, and Locales, page 7-18
- Managing TFTP Server Files, page 7-21
- Setting Up a Customized Log-on Message, page 7-22

Pre-Upgrade Tasks

Before you begin the upgrade, perform the following tasks:

- Read the release notes for the new release and be sure that you understand the new features and how the upgrade interacts with the other products that are associated with your system, such as JTAPI, IPMA, RTMT, IPCC, firewalls, and so on.

  For Cisco Unified Communications Manager, the release notes are located at http://cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html

- Ensure that you have the necessary license files for the new release.

  For more information on obtaining and installing licenses, see the License File Upload chapter in the Cisco Unified Communications Manager Administration Guide.

- Before you begin the upgrade, back up your system.
• Disable the Cisco Extension Mobility service by navigating to Cisco Unified Serviceability > Tools > Service Activation. For more information, see the Cisco Unified Serviceability Administration Guide.

Note: Be aware that, when you deactivate the Cisco Extension Mobility service, Cisco Extension Mobility users cannot log in and log out of phones that support Cisco Extension Mobility.

• Do not install Cisco Unified Communications Manager in a large Class A or Class B subnet that contains a large number of devices. When you install Cisco Unified Communications Manager in a large subnet with a large number of devices in that subnet, the Address Resolution Protocol (ARP) table can fill up quickly (maximum 1024 entries, by default). When the ARP table gets full, Cisco Unified Communications Manager can have difficulty talking to endpoints and cannot add more phones.

Caution: Failure to deactivate the Cisco Extension Mobility service could cause the upgrade to fail.

• Before you upgrade to a later release, refer to the documentation for your currently installed COP files to identify any special considerations related to upgrading Cisco Unified Communications Manager.

Note: If you have the Nokia s60 COP file installed, you must install any newer version of it before you upgrade Cisco Unified Communications Manager.

• If you plan to use IPv6 with Cisco Unified Communications Manager Release 8.0(2) or later, you can provision your DNS server for IPv6 prior to upgrading to Release 8.0(2) or later. However, do not configure the DNS records for Cisco Unified Communications Manager for IPv6 until after you perform the upgrade.

Caution: Configuring the DNS records for Cisco Unified Communications Manager for IPv6 prior to upgrading to Release 8.0(2) or later causes the upgrade to fail.

• If you upgrade a cluster, execute the utils network ipv6 ping CLI command to verify IPv6 networking on the first node (publisher server) and subsequent nodes (subscriber servers). If IPv6 is configured incorrectly on the subsequent nodes, load detection may take 20 minutes.

• Before you perform the Cisco Unified Communications Manager upgrade, ensure that the device name for the Cisco Unified Mobile Communicator device contains 15 or fewer characters. If the device name contains more than 15 characters for the Cisco Unified Mobile Communicator, the device does not migrate during the upgrade.

• After you complete the pre-upgrade tasks, review with the “Software Upgrade Considerations” section on page 7-2.

Software Upgrade Considerations

This section contains the following topics:

• Overview of the Software Upgrade Process, page 7-3
Overview of the Software Upgrade Process

With this version of Cisco Unified Communications Manager, you can install upgrade software on your server while the system continues to operate. Two partitions exist on your system: an active, bootable partition and an inactive, bootable partition. The system boots up and operates entirely on the partition that is marked as the active partition.

Note
If you have users logging in and logging out of Cisco Extension Mobility, this could cause the upgrade to fail. Before starting the upgrade, you must disable the Cisco Extension Mobility service. For more information, see the “Pre-Upgrade Tasks” section on page 7-1.

When you install upgrade software, you install the software on the inactive partition. The system continues to function normally while you are installing the software. When you are ready, you activate the inactive partition and reboot the system with the new upgrade software. The current active partition will then get identified as the inactive partition when the system restarts. The current software remains in the inactive partition until the next upgrade. Your configuration information migrates automatically to the upgraded version in the active partition.

When you upgrade a cluster, you start by upgrading the first node. You can begin upgrading subsequent nodes in parallel after the first node reaches a specified point in the upgrade, as described in the “Upgrading a Cluster in Parallel” section on page 7-6.

All servers in a cluster must run the same release of Cisco Unified Communications Manager. The only exception is during a cluster software upgrade, during which a temporary mismatch is allowed.

If for any reason you decide to back out of the upgrade, you can restart the system to the inactive partition that contains the older version of the software. However, any configuration changes that you made since you upgraded the software will get lost.

Note
You can only make changes to the database on the active partition. The database on the inactive partition does not get updated. If you make changes to the database after an upgrade, you must repeat those changes after switching the partition.

If the upgrade of a subsequent node fails after you upgrade the first node and switch it to the new version or fail to upgrade one of the subsequent nodes in your cluster during the upgrade cycle, you can do one of the following:

• Correct the errors that caused the upgrade failure on the subsequent node. You may want to check the network connectivity of the nodes in your cluster, reboot the subsequent node, ensure the server memory and CPU usage on the subsequent node is not too high. Upgrade the subsequent node again.
- Make sure that the active partition of the first node runs the newest version of software installed on the server. Perform a fresh installation on the subsequent node using the same software version as that running on the active partition of the first node. If you are reinstalling the subsequent node, you should delete the server from Cisco Unified Communications Manager Administration and add the server again as described in the *Cisco Unified Communications Manager Administration Guide*.

- Revert the first node and all subsequent nodes to the previous version as described in the Reverting to a Previous Version, page 7-16, install a previous version on the subsequent nodes, upgrade the first node again to the new version (not revert), and upgrade the subsequent nodes to the new version. If you attempt to revert the first node to the new version rather than upgrade again to the new version, the databases will not synchronize and synchronization cannot be repaired.

You can install a patch or upgrade version from a DVD (local source) or from a network location (remote source) that the Cisco Unified Communications Manager server can access.

For a short period of time after you install Cisco Unified Communications Manager or switch over after upgrading to a different product version, settings changes made by phone users might get unset. Examples of phone user settings include call forwarding and message waiting indication light settings. This can occur because Cisco Unified Communications Manager synchronizes the database after an installation or upgrade, which can overwrite phone user settings changes.

**Note**

Be sure to back up your system data before starting the software upgrade process. For more information, see the *Disaster Recovery System Administration Guide*.

---

### Making Configuration Changes During an Upgrade

This section describes the restrictions that apply to the configuration and provisioning changes that you can make during an upgrade.

#### Administration Changes

The administrator must not make any configuration changes to Cisco Unified Communications Manager during an upgrade. Configuration changes include any changes that you make in Cisco Unified Communications Manager Administration, Cisco Unified Serviceability, and the User Option windows.

Any configuration changes that you make during an upgrade could get lost after the upgrade completes, and some configuration changes can cause the upgrade to fail.

For Cisco Unified Communications Manager Release 8.5(1), this restriction applies to upgrades from 6.x releases.

For upgrades from Cisco Unified Communications Manager Release 6.x, you must discontinue all configuration activity before you upgrade to the new release by using either Cisco Unified Communications Operating System Administration or the Command Line Interface.

If you are upgrading your system, you must complete the upgrade tasks in this section before you perform any configuration tasks.

**Caution**

If you fail to follow these recommendations, unexpected behavior may occur; for example, ports may not initialize as expected.
Upgrade Tasks

To successfully complete the upgrade, perform the upgrade tasks in the following order before you begin making configuration changes.

Note Cisco strongly recommends that you do not perform configuration tasks until the upgrade completes on all servers in the cluster, until you have switched the servers over to the upgraded partition, and until you have verified that database replication is functioning.

Procedure

**Step 1** Stop all configuration tasks; that is, do not perform configuration tasks in the various Cisco Unified Communications Manager-related GUIs or the CLI (with the exception of performing the upgrade in the Cisco Unified Communications Operating System GUI).

**Step 2** Upgrade the first node in the cluster (the publisher node).

**Step 3** Upgrade the subsequent nodes in the cluster (the subscriber nodes).

**Step 4** Switch over the first node to the upgraded partition.

**Step 5** Switch over subsequent nodes to the upgraded partition.

Note You can switch the subsequent nodes to the upgraded partition either all at once or one at a time, depending on your site requirements.

**Step 6** Ensure that database replication is functioning between the first node and the subsequent nodes. You can check database replication status by using one of the following methods:

- In Cisco Unified Reporting, access the Unified CM Database Status report. Before you proceed, ensure the report indicates that you have a good database replication status with no errors. For more information about using Cisco Unified Reporting, see the *Cisco Unified Reporting Administration Guide*.

- In the Cisco Real Time Monitoring Tool, access the Database Summary service under the CallManager tab to monitor database replication status. The following list indicates the database replication status progress:
  - 0—Initializing.
  - 1—Replication setup script fired from this node.
  - 2—Good replication.
  - 3—Bad replication.
  - 4—Replication setup did not succeed.

  Before you proceed, ensure that you have a good database replication status. For more information about using the Real Time Monitoring Tool, see the *Cisco Unified Cisco Unified Real Time Monitoring Tool Administration Guide*.

**Step 7** When all other upgrade tasks are complete, you can perform any needed configuration tasks as required.
User Provisioning

For upgrades from Cisco Unified Communications Manager Release 6.x, changes that are made to the following user-facing features get preserved after the upgrade completes:

- Call Forward All (CFA)
- Message Waiting Indication (MWI)
- Privacy Enable/Disable
- Do Not Disturb Enable/Disable (DND)
- Extension Mobility Login (EM)
- Hunt Group Logout
- Device Mobility
- CTI CAPF status for end users and application users
- Credential hacking and authentication
- Recording enabling
- Single Number Reach enabling

Upgrading a Cluster in Parallel

When you upgrade a cluster that is running a supported version of Cisco Unified Communications Manager 6.x to Cisco Unified Communications Manager 8.5(1), begin upgrading the first node first. You can begin upgrading subsequent nodes in parallel after the first node reaches a specified point in the upgrade.

During the upgrade of the first node, view the installation log, install_log_<date+time>.log, by using the Software Installation/Upgrade window in Cisco Unified Communications Operating System Administration or the command line interface (CLI). You can begin the upgrade of the subsequent nodes after the following information displays in the log:

PRODUCT_Target is <product target id>
PRODUCT_NAME is <product name>
PRODUCT_VERSION is <product version to which you are upgrading, such as 8.5(1)>

You can also use the CLI to search for the relevant information in the install log by following this procedure:

**Procedure**

**Step 1** List the install logs; for example:
```bash
file list install install_* date
```
```
install_log_2008-10-01.09.41.57.log     install_log_2008-10-08.12.59.29.log
install_log_2008-10-14.09.31.06.log
dir count = 0, file count = 3
```

**Step 2** Search the most recent install log for the string PRODUCT_VERSION; for example:
```bash
file search install install_log_2008-10-14.09.31.06.log PRODUCT_VERSION
```
```
Searching path: /var/log/install/install_log_2008-10-14.09.31.06.log
```
Step 3

When the **file search** command finds the PRODUCT_VERSION string in the install log, you can start the upgrade of the subsequent nodes.

**Caution**

If you want to upgrade the subsequent nodes in parallel with the first node, do not choose the Reboot to upgraded partition on either first node or subsequent nodes while configuring the upgrade options. If selected, the first node may complete its upgrade and reboot while the subsequent nodes are upgrading, which causes the upgrade of the subsequent nodes to fail.

When you are ready to activate the new version, you must activate the new software on the first node before activating it on all other nodes.

### Supported Upgrades

For information about supported upgrades, see the Release Notes for your product release and the Cisco Unified Communications Manager Compatibility Matrix at the following URL:


### Upgrading from Cisco Unified Communications Manager Release 5.1(3e) to 7.1.x Releases

This information applies when you upgrade from any of the following releases to any 7.1.x release:

- 5.1(3e) (5.1.3.6000-2)
- The following 5.1(3e) Engineering Special releases:
  - 5.1(3.6103-1)
  - 5.1(3.6102-1)
  - 5.1(3.6101-1)

Before you upgrade, you must install the COP file ciscocm.513e_upgrade.cop.sgn on the server. This COP file is available from the following URL:

http://tools.cisco.com/support/downloads/go/ImageList.x?relVer=COP-Files&mdfid=280735907&sftType=Unified+Communications+Manager%2FCallManager+Utilities&optPlat=&nodecount=2&edesignator=null&modelName=Cisco+Unified+Communications+Manager+Version+5.1&treeMdfId=278875240&treeName=Voice+and+Unified+Communications&modifmdfid=&imname=&hybrid=Y&inst=N&lr=Y

For information about installing this COP file, follow the installation instructions included with the COP file.
Chapter 7      Software Upgrades

Software Upgrade Considerations

Obtaining the Upgrade File

Before you begin the upgrade process, you must obtain the appropriate upgrade file from Cisco.com. For more information, see the “Installation and Upgrade Information” section of the applicable Cisco Unified Communications Manager release notes at http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html

Upgrading From Cisco Unified Communications Manager 6.x and 7.x

If you are upgrading from Cisco Unified Communications Manager Release 6.x or 7.x, the upgrade file name uses the following format:

UCSInstall_UCOS_X.X.X.X.sgn.iso

Where X.X.X.X represents the release and build number.

You can access the upgrade file during the installation process from either a local DVD or from a remote FTP or SFTP server. Be aware that directory names and filenames that you enter to access the upgrade file are case-sensitive.

Supported SFTP Servers

Cisco allows you to use any SFTP server product but recommends SFTP products that have been certified with Cisco through the Cisco Technology Developer Partner program (CTDP). CTDP partners, such as GlobalSCAPE, certify their products with specified versions of Cisco Unified Communications Manager. For information on which vendors have certified their products with your version of Cisco Unified Communications Manager, refer to the following URL:

http://www.cisco.com/cgi-bin/ctdp/Search.pl

For information on using GlobalSCAPE with supported Cisco Unified Communications versions, refer to the following URL:

http://www.globalscape.com/gsftps/cisco.aspx

Cisco uses the following servers for internal testing. You may use one of the servers, but you must contact the vendor for support:

- Open SSH (refer to http://sshwindows.sourceforge.net/)
- Cygwin (refer to http://www.cygwin.com/)
- Titan (refer to http://www.titanftp.com/)

Cisco does not support using the SFTP product freeFTDP. This is because of the 1GB file size limit on this SFTP product.

Note

For issues with third-party products that have not been certified through the CTDP process, contact the third-party vendor for support.

Effects of I/O Throttling

This section describes how throttling affects the upgrade process, identifies possible causes of slow or stalled upgrades, and provides actions you can take to speed up the upgrade.

This section contains the following information:
Overview

Throttling prevents call processing degradation during the upgrade but may cause the upgrade to take longer. Throttling gets enabled by default and is necessary if you perform the upgrade during normal business hours. Be aware that the higher the call processing load on the system during the upgrade, the longer the upgrade takes.

Server Models

The server model you have impacts the upgrade speed. Upgrades on servers that have SATA hard drives, such as MCS-7816, MCS-7825, MCS-7828, take longer than servers with SAS/SCSI hard drives, such as MCS-7835 and MCS-7845.

Write-Cache

A disabled write-cache on the server causes the upgrade process to run more slowly. Multiple factors can cause the write-cacheto get disabled, including dead batteries on older servers.

Before starting an upgrade, verify the status of the write-cache on the MCS-7828-H4 and MCS-7835/45 disk controllers. You do not need to verify the write-cache status on the MCS-7816, MCS-7825, or other MCS-7828 servers. To verify write-cache status, access the Cisco Unified Communications Operating System Administration, and choose Show > Hardware.

If you determine that your write-cache is disabled because of a dead battery, you need to replace the hard disk controller cache battery. Follow your local support procedures to get this battery replaced.

See the following examples of output from the Show > Hardware menu for details on determining the battery and write-back cache status.

The following example shows write-cache enabled. The example indicates that 50 percent of the cache is reserved for write and 50 percent of the cache is reserved for read. If the write-cache was disabled, 100 percent of the cache would be reserved for read or the Cache Status would not equal “OK”. Also, the battery count equals “1”. If the controller battery was dead or missing, it would indicate “0”.

Example 7-1  7835/45-H1, 7835/45-H2, 7828-H4 Servers with Write-Cache Enabled

RAID Details:

Smart Array 6i in Slot 0
  Bus Interface: PCI
  Slot: 0
  Cache Serial Number: P75B20C9SR642P
  RAID 6 (ADG) Status: Disabled
  Controller Status: OK
  Chassis Slot:
  Hardware Revision: Rev B
  Firmware Version: 2.80
  Rebuild Priority: Low
  Expand Priority: Low
  Surface Scan Delay: 15 sec
Cache Board Present: True
Cache Status: OK
Accelerator Ratio: 50% Read / 50% Write
Total Cache Size: 192 MB
Battery Pack Count: 1
Battery Status: OK
SATA NCQ Supported: False

The following example indicates that the battery status is enabled and that the write-cache mode is enabled in (write-back) mode.

Example 7-2 7835/45-I2 Servers with Write-Cache Enabled

RAID Details
Controllers found: 1

Controller information

Controller Status: Okay
Channel description: SAS/SATA
Controller Model: IBM ServeRAID 8k
Controller Serial Number: 20ee0001
Physical Slot: 0
Copyback: Disabled
Data scrubbing: Enabled
Defunct disk drive count: 0
Logical drives/Offline/Critical: 2/0/0

Controller Version Information

BIOS: 5.2-0 (15421)
Firmware: 5.2-0 (15421)
Driver: 1.1-5 (2412)
Boot Flash: 5.1-0 (15421)

Controller Battery Information

Status: Okay
Over temperature: No
Capacity remaining: 100 percent
Time remaining (at current draw): 4 days, 18 hours, 40 minutes

Controller Vital Product Data

VPD Assigned#: 25R8075
EC Version#: J85096
Controller FRU#: 25R8076
Battery FRU#: 25R8088

Logical drive information

Logical drive number 1
Logical drive name: Logical Drive 1
RAID level: 1
Status of logical drive: Okay
Size: 69900 MB
Read-cache mode: Enabled
Write-cache mode: Enabled (write-back)
Write-cache setting: Enabled (write-back) when protected by battery
Software Upgrade Procedures

This section provides procedures for upgrading from either a local or a remote source and contains the following topics:

- Upgrading from a Local Source, page 7-11
- Upgrading from a Remote Source, page 7-12
- Bridge Upgrade, page 7-13

Upgrading from a Local Source

To upgrade the software from local DVD, follow this procedure:

**Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>If you do not have a Cisco-provided upgrade disk, create an upgrade disk by burning the upgrade file that you downloaded onto a DVD as an ISO image.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Just copying the .iso file to the DVD will not work. Most commercial disk burning applications can create ISO image disks.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Insert the new DVD into the disc drive on the local server that is to be upgraded.</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Log in to Cisco Unified Communications Operating System Administration.</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>Navigate to Software Upgrades &gt; Install/Upgrade. The Software Installation/Upgrade window displays.</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td>From the Source list, choose DVD.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td>Enter a slash (/) in the Directory field.</td>
</tr>
<tr>
<td><strong>Step 7</strong></td>
<td>To continue the upgrade process, click Next.</td>
</tr>
<tr>
<td><strong>Step 8</strong></td>
<td>Choose the upgrade version that you want to install and click Next.</td>
</tr>
<tr>
<td><strong>Step 9</strong></td>
<td>In the next window, monitor the progress of the download.</td>
</tr>
<tr>
<td><strong>Step 10</strong></td>
<td>If you want to install the upgrade and automatically reboot to the upgraded partition, choose Reboot to upgraded partition. The system restarts and is running the upgraded software.</td>
</tr>
</tbody>
</table>
Step 11 If you want to install the upgrade and then manually reboot to the upgraded partition at a later time, do the following steps:

a. Choose Do not reboot after upgrade.

b. Click Next.

The Upgrade Status window displays the Upgrade log.

c. When the installation completes, click Finish.

d. To restart the system and activate the upgrade, choose Settings > Version; then, click Switch Version.

The system restarts running the upgraded software.

Upgrading from a Remote Source

To upgrade the software from a network location or remote server, use the following procedure.

Note Do not use the browser controls, such as Refresh/Reload, while you are accessing Cisco Unified Communications Operating System Administration. Instead, use the navigation controls that are provided by the interface.

Procedure

Step 1 Put the upgrade file on an FTP or SFTP server that the server that you are upgrading can access.

Step 2 Log in to Cisco Unified Communications Operating System Administration.

Step 3 Navigate to Software Upgrades > Install/Upgrade.

The Software Installation/Upgrade window displays.

Step 4 From the Source list, choose Remote Filesystem.

Step 5 In the Directory field, enter the path to the directory that contains the patch file on the remote system.

If the upgrade file is located on a Linux or Unix server, you must enter a forward slash at the beginning of the directory path. For example, if the upgrade file is in the patches directory, you must enter /patches.

If the upgrade file is located on a Windows server, remember that you are connecting to an FTP or SFTP server, so use the appropriate syntax, including:

- Begin the path with a forward slash (/) and use forward slashes throughout the path.
- The path must start from the FTP or SFTP root directory on the server, so you cannot enter a Windows absolute path, which starts with a drive letter (for example, C:).

Step 6 In the Server field, enter the server name or IP address.

Step 7 In the User Name field, enter your user name on the remote server.

Step 8 In the User Password field, enter your password on the remote server.

Step 9 Select the transfer protocol from the Transfer Protocol field.

Step 10 To continue the upgrade process, click Next.

Step 11 Choose the upgrade version that you want to install and click Next.
If you are upgrading from Cisco Unified Communications Manager Release 6.x or 7.x, the upgrade file has the extension sgn.iso.

**Step 12** In the next window, monitor the progress of the download.

**Note** If you lose your connection with the server or close your browser during the upgrade process, you may see the following message when you try to access the Software Upgrades menu again:

Warning: Another session is installing software, click Assume Control to take over the installation.

If you are sure you want to take over the session, click **Assume Control**.

If Assume Control does not display, you can also monitor the upgrade with the Real Time Monitoring Tool.

**Step 13** If you want to install the upgrade and automatically reboot to the upgraded partition, choose **Reboot to upgraded partition**. The system restarts and runs the upgraded software.

**Step 14** If you want to install the upgrade and then manually reboot to the upgraded partition at a later time, do the following steps:

a. Choose **Do not reboot after upgrade**.

b. Click **Next**.

   The Upgrade Status window displays the Upgrade log.

c. When the installation completes, click **Finish**.

d. To restart the system and activate the upgrade, choose **Settings > Version**; then, click **Switch Version**.

The system restarts and is running the upgraded software.

---

**Bridge Upgrade**

The bridge upgrade provides a migration path for customers who want to migrate from discontinued Cisco Unified Communications Manager server to a server that supports the newest release of Cisco Unified Communications Manager.

Servers that are no longer supported, but are permitted to function as bridge upgrade servers, can upgrade and boot but will not allow Cisco Unified Communications Manager to function.

When you attempt to upgrade your Cisco Unified Communications Manager version on a discontinued server model, Cisco Unified Communications Manager inserts a message into the upgrade log. The upgrade log is displayed on the web browser when the upgrade is initiated through the Cisco Unified Communications Operating System Administration window, or you can view it through CLI if you used CLI to perform the upgrade. This message notes that you can only use the new version to obtain a DRS backup. The warning message in the log is followed by a delay that allows you to cancel the upgrade if you do not want to do a bridge upgrade.
When the system boots the new Cisco Unified Communications Manager version, a warning appears on the console that tells you that the only thing you can do with the new Cisco Unified Communications Manager version is to perform a DRS backup (“This hardware has limited functionality. Backup and Restore is the only supported functionality.”). Because of the restricted visibility of the console, the warning displays during both CLI and GUI sessions.

Use the following procedure to perform a bridge upgrade:

**Procedure**

**Step 1** Perform an upgrade to the new Cisco Unified Communications Manager version on your discontinued first node (publisher) server. Refer to the preceding sections in this chapter that describe the kind of upgrade you want to do. Observe the warning on the console that tells you that the only thing you can do with the new Cisco Unified Communications Manager version is to perform a DRS backup (“This hardware has limited functionality. Backup and Restore is the only supported functionality.”).

**Step 2** Perform an upgrade to the new Cisco Unified Communications Manager version on your subsequent node (subscriber) servers. Refer to the preceding sections in this chapter that describe the kind of upgrade you want to do.

**Step 3** Verify database synchronization between all nodes. You can use the CLI commands `utils dbreplication runtimestate` and `utils dbreplication status`. For more information, refer to the Command Line Interface Reference Guide for Cisco Unified Communications Solutions.

**Step 4** Using the new Cisco Unified Communications Manager version on your discontinued first node server, perform a DRS backup. The DRS backups are encrypted using the cluster security password provided at install time. You must remember this security password as the “old” password, because you may be prompted to enter this “old” password at the time of restore. Refer to the Disaster Recovery System Administration Guide.

**Step 5** Disconnect your discontinued server from the network.

**Step 6** Install the new Cisco Unified Communications Manager version on your new supported first node server. You must obtain and install a new license on this server. Refer to the guide Installing Cisco Unified Communications Manager. You will be prompted to enter a “new” security password, a password that is different from the “old” password you noted in Step 4. The guide Installing Cisco Unified Communications Manager describes the requirements of a “new” security password that Cisco Unified Communications Manager will accept. You must remember this “new” security password.

**Step 7** Using the new Cisco Unified Communications Manager version on your new supported first node server, perform the Disaster Recovery System Administration Guide procedure “Restoring the First Node only (Rebuilding the Publisher Alone)”. First, select only select the first node for restore. You can only select the subsequent nodes for restore after the completion of first node restore. Use the discontinued server’s backup file that you created in Step 4. You will be prompted for the “old” security password that you noted in Step 4. For further details, refer to the Disaster Recovery System Administration Guide.

**Step 8** On your new supported first node server, reactivate all services that used to be active on your discontinued first node server before the bridge upgrade. Refer to the Administration Guide for Cisco Unity Connection Serviceability.

**Step 9** Verify database synchronization between all nodes. You can use the CLI commands `utils dbreplication runtimestate` and `utils dbreplication status`. For more information, refer to the Command Line Interface Reference Guide for Cisco Unified Communications Solutions.
Post-Upgrade Tasks

After the upgrade, perform the following tasks:

- Enable the Cisco Extension Mobility service by navigating to **Cisco Unified Serviceability > Tools > Service Activation**. For more information, see the *Cisco Unified Serviceability Administration Guide*.

  **Note** If you do not enable the Cisco Extension Mobility service, Cisco Extension Mobility users cannot log in and log out of phones that support Cisco Extension Mobility.

- Verify phone functions by making the following types of calls:
  - Voice mail
  - Interoffice
  - Mobile phone
  - Local
  - National
  - International
  - Shared line

- Test the following phone features:
  - Conference
  - Barge
  - Transfer
  - C-Barge
  - Ring on shared lines
  - Do Not Disturb
  - Privacy
  - Presence
  - CTI call control
  - Busy Lamp Field

- If necessary, reinstall the Real Time Monitoring Tool.

Stalled Upgrades

During the installation of upgrade software, the upgrade may seem to stall. The upgrade log stops displaying new log messages. When the upgrade stalls, you must cancel the upgrade, disable I/O throttling, and restart the upgrade procedure. For more information, see the “Effects of I/O Throttling” section on page 7-8.
Reverting to a Previous Version

After upgrading, you can revert to the software version that was running before the upgrade, by using the Switch Version option to switch the system to the software version on the inactive partition.

This section contains the following topics:

- Reverting a Cluster to a Previous Version, page 7-16
- Reverting the Publisher Node to a Previous Version, page 7-16
- Reverting a Subscriber Node to a Previous Version, page 7-17
- Resetting Database Replication When Reverting to an Older Product Release, page 7-18

Reverting a Cluster to a Previous Version

Note

If you downgrade a cluster to a nonsecure previous release of Cisco Unified Communications Manager (releases prior to Release 8.0), you must prepare the cluster for rollback before you switch versions. If you do not prepare the cluster for rollback before you revert to a previous release, you will have to manually delete the ITL file on each Cisco Unified IP Phone in the system. For more information, see Chapter 2, “Security by Default,” in the Cisco Unified Communications Manager Security Guide.

To revert a cluster to a previous version, follow these major steps:

<table>
<thead>
<tr>
<th>Task</th>
<th>For Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Revert the publisher node.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Revert all backup subscriber nodes.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Revert all primary subscriber nodes.</td>
</tr>
<tr>
<td>Step 4</td>
<td>If you are reverting to an older product release, reset database replication within the cluster.</td>
</tr>
</tbody>
</table>

Reverting the Publisher Node to a Previous Version

Procedure

Step 1
Open Cisco Unified Communications Operating System Administration directly by entering the following URL:

https://server-name/cmplatform

where server-name specifies the host name or IP address of the Cisco Unified Communications Manager server.

Step 2
Enter your Administrator user name and password.
Step 3  Choose Settings > Version.
The Version Settings window displays.

Step 4  Click the Switch Versions button.
After you verify that you want to restart the system, the system restarts, which might take up to 15 minutes.

Step 5  To verify that the version switch was successful, you can follow these steps:
   a. Log in to Open Cisco Unified Communications Operating System Administration again.
   b. Choose Settings > Version.
The Version Settings window displays.
   c. Verify that the correct product version is now running on the active partition.
   d. Verify that all activated services are running.
   e. Log in to Cisco Unified Communications Manager Administration by entering the following URL
      and entering your user name and password:
      
      https://server-name/ccmadmin
   f. Verify that you can log in and that your configuration data exists.

Reverting a Subscriber Node to a Previous Version

Procedure

Step 1  Open Cisco Unified Communications Operating System Administration directly by entering the following URL:
   https://server-name/cmplatform
   where server-name is the host name or IP address of the Cisco Unified Communications Manager server.

Step 2  Enter your Administrator user name and password.

Step 3  Choose Settings > Version.
The Version Settings window displays.

Step 4  Click the Switch Versions button.
After you verify that you want to restart the system, the system restarts, which might take up to 15 minutes.

Step 5  To verify that the version switch was successful, you can follow these steps:
   a. Log in to Open Cisco Unified Communications Operating System Administration again.
   b. Choose Settings > Version.
The Version Settings window displays.
   c. Verify that the correct product version is now running on the active partition.
   d. Verify that all activated services are running.
Resetting Database Replication When Reverting to an Older Product Release

If you revert the servers in a cluster to run an older product release, you must manually reset database replication within the cluster. To reset database replication after you revert all the cluster servers to the older product release, enter the CLI command `utils dbreplication reset all` on the publisher server.

When you switch versions by using Cisco Unified Communications Operating System Administration or the CLI, you get a message that reminds you about the requirement to reset database replication if you are reverting to an older product release.

Installing COP Files, Dial Plans, and Locales

This section contains the following topics:

- COP File Installation, page 7-18
- Dial Plan Installation, page 7-18
- Locale Installation, page 7-18

COP File Installation

The following guidelines apply to installing COP files. If the documentation for a specific COP file contradicts these general guidelines, follow the COP file documentation:

- Install the COP file on every server in a cluster.
- After you install a COP file, you must restart the server.

Note: You must restart Cisco Unified Communications Manager to ensure that configuration changes that are made during the COP file installation get written into the database. Cisco recommends that you perform this restart during an off-peak period.

Dial Plan Installation

You can install dial plan files from either a local or a remote source by using the same process that is described earlier in this chapter for installing software upgrades. See the “Software Upgrade Procedures” section on page 7-11 for more information about this process.

After you install the dial plan files on the system, log in to Cisco Unified Communications Manager Administration and then navigate to Call Routing > Dial Plan Installer to complete installing the dial plans.

Locale Installation

Cisco provides locale-specific versions of the Cisco Unified Communications Manager Locale Installer on www.cisco.com. Installed by the system administrator, the locale installer allows the user to view/receive the chosen translated text or tones, if applicable, when a user works with supported interfaces.
User Locales

User locale files provide translated text and voice prompts, if available, for phone displays, user applications, and user web pages in the locale that the user chooses. User-only locale installers exist on the web.

Network Locales

Network locale files provide country-specific phone tones and gateway tones, if available. Network-only locale installers exist on the web.

Cisco may combine multiple network locales in a single locale installer.

Note

The Cisco Media Convergence Server (MCS) or Cisco-approved, customer-provided server can support multiple locales. Installing multiple locale installers ensures that the user can choose from a multitude of locales.

Changes do not take effect until you reboot every server in the cluster. Cisco strongly recommends that you do not reboot the servers until you have installed all locales on all servers in the cluster. Minimize call-processing interruptions by rebooting the servers after regular business hours.

Installing Locales

You can install locale files from either a local or a remote source by using the same process that is described earlier in this chapter for installing software upgrades. See the “Software Upgrade Procedures” section on page 7-11 for more information about this process.

Note

To activate the newly installed locales, you must restart the server.

See the “Cisco Unified Communications Manager Locale Files” section on page 7-19 for information on the Cisco Unified Communications Manager locale files that you must install. You can install more than one locale before you restart the server.

Cisco Unified Communications Manager Locale Files

When you are installing Cisco Unified Communications Manager locales, you must install the following files:

- User Locale files—Contain language information for a specific language and country and use the following convention:
  
  cm-locale-language-country-version.cop

- Combined Network Locale file—Contains country-specific files for all countries for various network items, including phone tones, annunciations, and gateway tones. The combined network locale file uses the following naming convention:
  
  cm-locale-combinednetworklocale-version.cop

Error Messages

See Table 7-1 for a description of the messages that can occur during Locale Installer activation. If an error occurs, you can view the messages in the installation log.
### Table 7-1 Locale Installer Error Messages and Descriptions

<table>
<thead>
<tr>
<th>Message</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[LOCALE] File not found: &lt;language&gt;_&lt;country&gt;_user_locale.csv, the user locale has not been added to the database.</td>
<td>This error occurs when the system cannot locate the CSV file, which contains user locale information to add to the database. This indicates an error with the build process.</td>
</tr>
<tr>
<td>[LOCALE] File not found: &lt;country&gt;_network_locale.csv, the network locale has not been added to the database.</td>
<td>This error occurs when the system cannot locate the CSV file, which contains network locale information to add to the database. This indicates an error with the build process.</td>
</tr>
<tr>
<td>[LOCALE] Communications Manager CSV file installer installdb is not present or not executable</td>
<td>This error occurs because a Cisco Unified Communications Manager application called installdb must be present; it reads information that is contained in a CSV file and applies it correctly to the Cisco Unified Communications Manager database. If this application is not found, it either was not installed with Cisco Unified Communications Manager (very unlikely), has been deleted (more likely), or the server does not have Cisco Unified Communications Manager installed (most likely). Installation of the locale will terminate because locales will not work without the correct records that are held in the database.</td>
</tr>
<tr>
<td>[LOCALE] Could not create /usr/local/cm/application_locale/cmservices/ipma/com/cisco/ipma/client/locales/maDialogs_&lt;ll&gt;<em>&lt;CC&gt;</em>.properties.Checksum.</td>
<td>These errors could occur when the system fails to create a checksum file; causes can include an absent Java executable, /usr/local/thirdparty/java/j2sdk/jre/bin/java, an absent or damaged Java archive file, /usr/local/cm/jar/cmutil.jar, or an absent or damaged Java class, com.cisco.ccm.util.Zipper. Even if these errors occur, the locale will continue to work correctly, with the exception of Cisco Unified Communications Manager Assistant, which cannot detect a change in localized Cisco Unified Communications Manager Assistant files.</td>
</tr>
<tr>
<td>[LOCALE] Could not find /usr/local/cm/application_locale/cmservices/ipma/LocaleMasterVersion.txt in order to update Unified CM Assistant locale information.</td>
<td>This error occurs when the file does not get found in the correct location, which is most likely due to an error in the build process.</td>
</tr>
<tr>
<td>[LOCALE] Addition of &lt;RPM-file-name&gt; to the Cisco Unified Communications Manager database has failed!</td>
<td>This error occurs because of the collective result of any failure that occurs when a locale is being installed; it indicates a terminal condition.</td>
</tr>
</tbody>
</table>
Supported Cisco Unified Communications Products

For a list of products that Cisco Unified Communications Manager Locale Installers support, see the Cisco IP Telephony Locale Installer for Cisco Unified Communications Manager, which is available at this URL:

http://www.cisco.com/cgi-bin/tablebuild.pl/callmgr-locale-51

Managing TFTP Server Files

You can upload files for use by the phones to the TFTP server. Files that you can upload include custom phone rings, callback tones, and backgrounds. This option uploads files only to the specific server to which you connected, and other nodes in the cluster do not get upgraded.

Files upload into the tftp directory by default. You can also upload files to a subdirectory of the tftp directory.

If you have two Cisco TFTP servers that are configured in the cluster, you must perform the following procedure on both servers. This process does not distribute files to all servers, nor to both Cisco TFTP servers in a cluster.

To upload and delete TFTP server files, follow this procedure:

Procedure

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>From the Cisco Unified Communications Operating System Administration window, navigate to Software Upgrades &gt; TFTP File Management. The TFTP File Management window displays and shows a listing of the current uploaded files. You can filter the file list by using the Find controls.</td>
</tr>
</tbody>
</table>
| Step 2 | To upload a file, follow this procedure:  
  a. Click Upload File.  
     The Upload File dialog box opens.  
  b. To upload a file, click Browse and then choose the file that you want to upload.  
  c. To upload the file to a subdirectory of the tftp directory, enter the subdirectory in the Directory field.  
  d. To start the upload, click Upload File.  
     The Status area indicates when the file uploads successfully.  
  e. After the file uploads, restart the Cisco TFTP service.  
  
  **Note** If you plan to upload several files, restart the Cisco TFTP service only once, after you have uploaded all the files.  
  For information about restarting services, refer to Cisco Unified Serviceability Administration Guide. |
| Step 3 | To delete files, follow this procedure:  
  a. Check the check boxes next to the files that you want to delete.  
  You can also click Select All to select all of the files, or Clear All to clear all selection. |
Setting Up a Customized Log-on Message

You can upload a text file that contains a customized log-on message that appears in Cisco Unified Communications Operating System Administration, Cisco Unified Communications Manager Administration, Cisco Unified Serviceability, Disaster Recovery System Administration, and the command line interface.

To upload a customized log-on message, follow this procedure:

**Procedure**

**Step 1**
From the Cisco Unified Communications Operating System Administration window, navigate to Software > Upgrades > Customized Logon Message.

The Customized Logon Message window displays.

**Step 2**
To choose the text file that you want to upload, click Browse.

**Step 3**
Click Upload File.

**Note**
You cannot upload a file that is larger than 10kB.

The system displays the customized log-on message.

**Step 4**
To revert to the default log-on message, click Delete.

Your customized log-on message gets deleted, and the system displays the default log-on message.
Services

This chapter describes the utility functions that are available on the operating system, which include pinging another system and setting up remote support.

This chapter contains the following sections:

- Ping, page 8-1
- Remote Support, page 8-2

Ping

The Ping Utility window enables you to ping another server in the network.

To ping another system, follow this procedure:

**Procedure**

1. From the Cisco Unified Communications Operating System Administration window, navigate to Services > Ping.
   The Ping Remote window displays.
2. Enter the IP address or network name for the system that you want to ping.
3. Enter the ping interval in seconds.
4. Enter the packet size.
5. Enter the ping count, the number of times that you want to ping the system.

**Note**
When you specify multiple pings, the ping command does not display the ping date and time in real time. Be aware that the Ping command displays the data after the number of pings that you specified completes.

6. Choose whether you want to validate IPSec.
7. Click Ping.
   The Ping Remote window displays the ping statistics.
Remote Support

From the Remote Account Support window, you can set up a remote account that Cisco support personnel can use to access the system for a specified time.

The remote support process works like this:

1. The customer sets up a remote support account. This account includes a time limit on how long Cisco personnel can access it. This time limit can be configured to various values.
2. When the remote support account is set up, a pass phrase gets generated.
3. The customer calls Cisco support and provides the remote support account name and pass phrase.
4. Cisco support enters the pass phrase into a decoder program that generates a password from the pass phrase.
5. Cisco support logs into the remote support account on the customer system by using the decoded password.
6. When the account time limit expires, Cisco support can no longer access the remote support account.

To set up remote support, follow this procedure:

Procedure

**Step 1** From the Cisco Unified Communications Operating System Administration window, navigate to Services > Remote Support.

The Remote Access Configuration window displays.

**Step 2** Enter an account name for the remote account in the **Account Name** field.

The account name must comprise at least six-characters that are all lowercase, alphabetic characters.

**Step 3** Enter the account duration, in days, in the **Account Duration** field.

The default account duration specifies 30 days.

**Step 4** Click **Save**.

The Remote Support Status window displays. For descriptions of fields on the Remote Support Status window, see **Table 8-1**.

**Step 5** To access the system by using the generated pass phrase, contact your Cisco personnel.

**Step 6** To delete the remote access support account, click the **Delete** button.

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<tr>
<th><strong>Table 8-1</strong> Remote Support Status Fields and Descriptions</th>
</tr>
</thead>
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</tr>
<tr>
<td>Decode version</td>
</tr>
<tr>
<td>Account name</td>
</tr>
<tr>
<td>Expiration</td>
</tr>
<tr>
<td>Pass phrase</td>
</tr>
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