



CHAPTER 8

Cisco Extension Mobility

Cisco Extension Mobility allows users to temporarily access their Cisco Unified IP Phone configuration such as line appearances, services, and speed dials from other Cisco Unified IP Phones.

Extension mobility functionality extends to most Cisco Unified IP Phones. You can configure each Cisco Unified IP Phone to support Cisco Extension Mobility by using the Default Device Profile window in Cisco Unified Communications Manager Administration (formerly Cisco Unified CallManager Administration). This allows users who do not have a user device profile for a particular Cisco Unified IP Phone to use Cisco Extension Mobility with that phone.



Note

Check the Cisco Unified IP Phone documentation to verify that Cisco Extension Mobility is supported.

This chapter provides the following information about Cisco Extension Mobility:

- [Introducing Cisco Extension Mobility, page 8-1](#)
- [System Requirements for Cisco Extension Mobility, page 8-8](#)
- [Interactions and Restrictions, page 8-9](#)
- [Installing Cisco Extension Mobility for the First Time, page 8-12](#)
- [Configuring Cisco Extension Mobility, page 8-12](#)
- [Providing Information to Cisco Extension Mobility Users, page 8-30](#)
- [Related Topics, page 8-30](#)

Introducing Cisco Extension Mobility

The following sections will help you to understand Cisco Extension Mobility, so you can configure and troubleshoot the feature:

- [Understanding Device Profiles, page 8-2](#)
- [Overview of Cisco Extension Mobility, page 8-2](#)
- [Login and Logout Behavior, page 8-4](#)
- [Login Call Flow, page 8-5](#)
- [Logout Call Flow, page 8-6](#)

Understanding Device Profiles

A device profile defines the attributes of a particular device. A device profile includes information such as the phone template, user locale, subscribed services, and speed dials.

The device profile does not get associated with a physical phone. It includes all the properties of a device except those that are explicitly tied to a device, such as MAC address or directory URL.

When a device profile has been loaded onto a device, the device adopts the attributes of that device profile.

User Device Profile

As system administrator, you configure a user device profile for each individual user. Using the Cisco Unified CM User Options window, a user can access this profile and make changes, such as adding a service. You can add, modify or delete a user device profile in Cisco Unified Communications Manager Administration.

When a user logs in to a phone that is configured for Cisco Extension Mobility and the user has a user device profile that is configured for that phone, the user device profile replaces the existing configuration of the device.

When a user logs out, the logout profile replaces the user device profile.

Default Device Profile

With Cisco Unified CallManager 4.0 or later and Cisco Unified Communications Manager 5.0 and later, you can configure a default device profile for each Cisco Unified IP Phone that you want to support Cisco Extension Mobility. The phone takes on the default device profile whenever a user logs in to a phone for which that user does not have a user device profile.

A default device profile includes device type (phone), user locale, phone button template, softkey template, and multilevel precedence and preemption (MLPP) information.

You create a default device profile by using the Default Device Profile Configuration window. A phone can have zero or one default device profile. The maximum number of default device profiles cannot exceed the number of phones that support Cisco Extension Mobility.

Overview of Cisco Extension Mobility

Cisco Extension Mobility (an XML-based authentication feature) comprises the Cisco Extension Mobility application service and the Cisco Extension Mobility service. You need to activate the Cisco Extension Mobility service from Cisco Unified Serviceability to enable EM.

The Cisco Extension Mobility service runs as an application on the Cisco Tomcat Web Service.

You can activate/deactivate services from **Cisco Unified Serviceability > Service Activation**. Refer to the *Cisco Unified Serviceability Administration Guide* for more information.

**Note**

Cisco Extension Mobility works on phones within a single Cisco Unified Communications Manager cluster only.

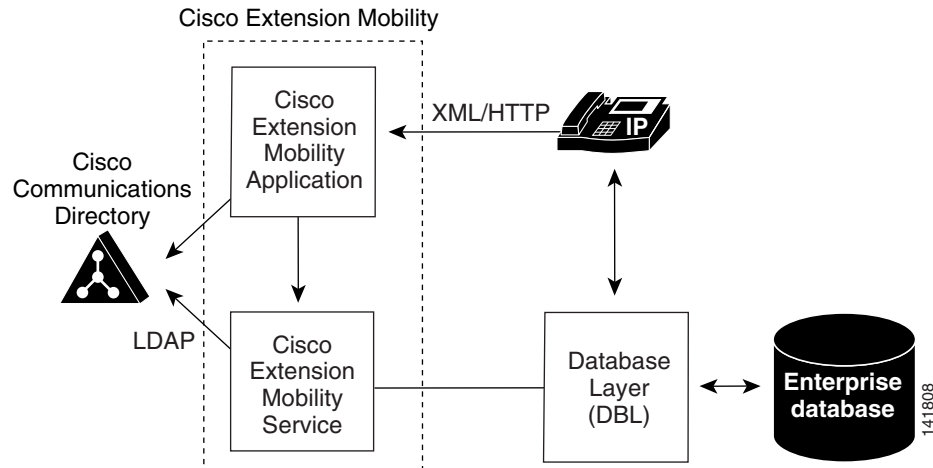
You can use Cisco Unified Communications Manager Administration to start the Cisco Extension Mobility services (in Cisco Unified Serviceability administration), define how the features will work in your system (using the System Parameters window), and define the phones that will support the feature (using the Default Device Profile window).

As system administrator, you configure a user device profile for each individual user. Using the Cisco Unified CM User Options window, a user can access this profile and make changes, such as adding a service like Cisco Extension Mobility.

Users access Cisco Extension Mobility by pressing the Services button on a Cisco Unified IP Phone and then entering login information in the form of a Cisco Unified Communications Manager UserID and a Personal Identification Number (PIN). If a user has more than one user device profile, a prompt displays on the phone and asks the user to choose a device profile for use with Cisco Extension Mobility.

When a user logs in, the Cisco Extension Mobility application receives the XML-over-HTTP request for user authentication and verifies the information against the Cisco Unified Communications Manager Directory. (See [Figure 8-1](#).)

Figure 8-1 Cisco Extension Mobility



On authentication, if the login profile matches the login device (that is, the user has a user device profile that is configured for a Cisco Unified IP Phone 7960 and logs into a Cisco Unified IP Phone 7960), Cisco Extension Mobility behaves as follows:

- The phone automatically reconfigures with the individual user device profile information.
 - If the user has one user device profile, the system uses this profile. If the user has more than one user device profile, the user can choose the user device profile that will be used from a list.
- The user can access all the services that the user configured on the device profile.

If that same user logs into a Cisco Unified IP Phone where the user does not have a configured user device profile, the login profile will not match the login device on authentication. In this scenario, the system loads the default device profile for that phone model onto the phone, and Cisco Extension Mobility works as described here:

- The system copies all device-independent configuration (that is, user hold audio source, user locale, userid, speed dials, and directory number configuration except for the setting “line setting for this device”) from the user device profile to the login device.
- The system uses the default device profile for that phone for phone template and softkey template configuration and, if the phone can support add-on modules, for the add-on module.

- If the login device supports feature safe on the phone button template and if the phone template that is configured in the login profile matches the number of buttons, the system uses the phone template from the login profile. Otherwise, the system uses the default device profile for the phone to configure the phone template.
- If the phone supports Cisco Unified IP Phone Services and they are configured, the system copies the services from the user device profile.

If the user device profile does not have Cisco Unified IP Phone Services configured, the system uses the Cisco Unified IP Phone Services that are configured in the default device profile for the login device that is accessed during login. If parameters exist for the subscriber service, the system copies the parameters from the default device profile, and the parameters may not reflect the correct information.

For example, the following scenarios occur when a user who has a user device profile that is configured for Cisco Unified IP Phone 7960 logs in to a Cisco Unified IP Phone 7905, and the default device profile is loaded on the phone.

- The user can access the user hold audio source, user locale, userid, speed dials and directory number configuration. The user cannot access phone line setting; the system configured the phone line setting from the default device profile that is configured for the Cisco Unified IP Phone 7905.
- The user can access the phone template and the softkey template of the Cisco Unified IP Phone 7905.
- The user cannot access an add-on module because Cisco Unified IP Phone 7905 does not support it.
- The user can access Cisco Unified IP Phone Services if they are configured for the Cisco Unified IP Phone 7905, but the parameters from the subscriber services will reflect the default device profile, not the parameters that the user chose on the Cisco Unified CM User Options window.

Users log out of Cisco Extension Mobility by pressing the Services button and choosing logout. If users do not log out themselves, the system will automatically log them out if you configured the Service Parameters to do so, or the next user of the phone can log out the previous user. After logout, Cisco Unified Communications Manager sends the logout profile to the phone and restarts the phone.

SIP Support for Cisco Extension Mobility

Cisco Extension Mobility supports the following Cisco Unified IP Phones that are running SIP:

- 7970G/7971G
- 7961G/7941G and 7961GE/7941GE (G = Non Gig; GE = Gig)
- 7942G, 7962G, 7945G, 7965G, and 7975G
- 7911G

Additional Information

See the [Related Topics](#), page 8-30.

Login and Logout Behavior

This section describes how login and logout works from the user perspective. Use this information to respond to questions or problems that users may encounter.

- Cisco recommends that you direct your users to log in to their phones at the beginning of the work day. This practice ensures that the user device profile gets loaded on the phone.

- If users make changes to their profiles on the Cisco Unified CM User Options window, the changes will apply the next time that they log in.
- The system does not apply the change if the user is already logged in.
- If the User Locale that is associated with the login user or profile does not match the locale or device, after a successful login, the phone will perform a restart followed by a reset. This occurs because the phone configuration file gets rebuilt. Addon module mismatches between profile and device may generate the same behavior.
- Cisco Extension Mobility supports a maximum of 250 login or logout operations per minute (or 15,000 operations per hour). Remember that these operations are sequential, not concurrent. (Some devices may support more login or logout operations per hour.)
- You can establish a time limit, so Cisco Extension Mobility automatically logs out users, after a certain time, throughout the cluster. At the Enforce Maximum Login Time, choose **True** to specify a maximum time for logins and then set the maximum login time.

See the [“Setting the Service Parameters” section on page 8-18](#).

- You can set the service parameter to allow for multiple logins. If you set multiple login not allowed, Cisco Extension Mobility supports only one login at a time for a user. Subsequent logins on other devices will fail until the user logs out on the first device.
- If Auto Logout is not enabled and if users forget to log out of a phone, as system administrator, you can log them out. Another user also can log them out when the second user tries to log in to that phone.
- If users are logged out of a Cisco Unified IP Phone that has the Cisco Extension Mobility feature configured for it, depending on the logout profile, they may not be able to check voice-messaging systems from that phone until they log in. If they receive a busy signal after pressing the Messages button or any key on the touchtone key pad, they must log in before using the phone.
- Users can log in to a phone that is off hook; however, their Cisco Unified IP Phone will not assume their settings until they go on hook. When they go on hook after logging in, their phone will display a “Resetting...” message, and their phone settings will be available from that phone.
- The Cisco Extension Mobility profile of a user does not maintain ring type, contrast settings, and volume settings; users configure these settings directly on the Cisco Unified IP Phone.
- When a Cisco Extension Mobility user logs out of a device, all Call Back services that are active on the Cisco Extension Mobility user automatically cancel.

Additional Information

See the [Related Topics, page 8-30](#).

Login Call Flow

This section describes the flow of events for the Cisco Extension Mobility login from a system perspective. Understanding the call flow will help you troubleshoot problems that you may have with the feature.

1. A user presses the Services button on the Cisco Unified IP Phone and requests to log in. This action invokes a URL for the Cisco Extension Mobility application.
2. The application determines the URL of the service.
3. The Cisco Extension Mobility application sends a formatted XML/HTTP query to the Cisco Extension Mobility service to determine the state of the phone.

4. The application prompts the user for UserID and PIN. The user enters the UserID and PIN and presses the Submit softkey.
5. The phone performs an HTTP request, and the application tries to authenticate the UserID and PIN.
6. If the UserID and PIN cannot be authenticated, the phone displays “Authentication Error.”
If the UserID and PIN are authenticated, the application queries the Cisco Unified Communications Manager Database to get the list of device profiles that are associated with the user.
7. The directory responds with the list of the user device profile(s). If the list has more than one entry, the phone displays the device profiles from which the user can choose.
8. When the user chooses an entry from this list (or if the list has only one entry), the application generates the XML for the service.
9. The application posts, via HTTP, the generated XML login request to the service URL. (The application determined the service URL in Step 2.)
10. The service responds in a defined XML format to the request with a restart to load the user device profile (that indicates success) or with a failure message.
11. The application returns the correct notification to the device. The phone restarts with the user device profile.
12. In the Phone Configuration window of Cisco Unified Communications Manager Administration, the Current End User Profile and the Current Device Profile, along with links to the applicable End User Profile and Device Profile configuration windows display.



Note In the Phone Configuration window, the line number of the device does not change when a user logs in to the phone. It continues to display the line number that is assigned to the phone when no user is logged in.

Additional Information

See the [Related Topics, page 8-30](#).

Logout Call Flow

This section describes the flow of events for the Cisco Extension Mobility logout from a system perspective. Understanding the call flow will help you troubleshoot any problems that you may have with the Cisco Extension Mobility feature.

1. A user presses the Services button on the Cisco Unified IP Phone and requests to log out. This action invokes a URL for the Cisco Extension Mobility application.
2. The application determines the URL of the service.



Note Cisco Extension Mobility looks up the URL in the Cisco Unified Communications Manager Directory on the first instance only; the system then stores the URL as a static variable.

3. The application generates the XML to query the Cisco Extension Mobility service for the current state of the device.
4. The service responds to the application with the current state of device; for example, <userID> is logged in.
5. The application prompts the user to confirm that the user wants to log out.

6. When the user presses the Yes softkey to confirm that the user wants to log out, the application generates XML for the logout operation.
7. The application posts, via HTTP, the generated XML login request to the service URL. (The application determined the service URL in Step 2.)
8. In the case of a successful operation, the phone will restart and load the appropriate device profile. If a failure occurs, a message gets sent to the phone.
9. The application parses the received XML and creates an XML response message.
10. The XML gets returned as a suitable notification to the device, and the phone restarts to load the original user profile or logout profile.
11. In the Phone Configuration window of Cisco Unified Communications Manager Administration, you (the administrator) will no longer see a Current End User Profile and Current Device Profile.

**Note**

In the Phone Configuration window, the line number of the device does not change when a user logs out from the phone. It continues to display the line number that is assigned to the phone when no user is logged in.

Extension Mobility Equivalency

Cisco Extension Mobility (EM) equivalency eliminates the phone-model dependency of phone button templates. The following factors determine the model equivalency among the various phones:

- Various features that the phone models support
- Number of buttons that the phone models support

EM equivalency introduces the following support feature for the Cisco Unified IP Phones:

- Feature Safe on Phone Button Template—Phones can use any phone button template that has the same number of line buttons that the phone model supports.

Release 7.0(1) of Cisco Unified Communications Manager enhances the existing Extension Mobility (EM) equivalency mechanism. The equivalency enhancement works across phone types as follows:

- 7940 SCCP, 7941 SCCP, 7942 SCCP, and 7945 SCCP models are equivalent and can share an EM profile.
- 7940 SIP, 7941 SIP, 7942 SIP, and 7945 SIP models are equivalent and can share an EM profile.
- 7960 SCCP and 7961 SCCP models are equivalent and can share an EM profile.
- 7962 SCCP and 7965 SCCP models are equivalent and can share an EM profile.
- 7960 SIP, 7961 SIP, 7962 SIP, and 7965 SIP models are equivalent and can share an EM profile.
- 7970 SCCP and 7971 SCCP models are equivalent and can share an EM profile.
- 7970 SIP, 7971 SIP, and 7975 SIP models are equivalent and can share an EM profile.

The enhancement works for all phone models that are equivalent and requires no administration tasks to activate.

**Note**

Be aware that this feature does not support using an EM profile that is configured for a newer model on the Cisco Unified IP Phone 7960 or 7940.

Configuration Scenario

1. Use the User Device Profile Configuration window to create a 7970 user device profile. Name the 7970 user device profile *User Profile Test* and configure the profile to use the 7970 phone button template and to include the following lines:
 - DN: 1050, 1051, and 1052
 - Speed Dial: 5051, 5052, 5053, 5054, and 5055
2. Use the User Configuration window to create a user. Name the user *cisco* and associate the User Profile Test user device profile with this user.
3. Use the Phone Configuration window to configure a Cisco Unified IP Phone 7970 and a Cisco Unified IP Phone 7971 with extension mobility. Configure each phone to use the Standard phone button template.
4. When the user logs in to a Cisco Unified IP Phone 7970 with the User Profile Test user device profile, all the lines (DNs) and speed dials display on the phone screen.
5. When the user logs in to a Cisco Unified IP Phone 7971 with the User Profile Test user device profile, because the phone supports feature safe on the phone button template, all the lines (DNs) and speed dials display on the phone screen.

Additional Information

See the [Related Topics, page 8-30](#).

System Requirements for Cisco Extension Mobility

Software Components

This version of Cisco Extension Mobility requires the following software components to operate:

- Cisco Unified Communications Manager 4.0 or later

**Note**

Cisco Extension Mobility installs automatically on the same server with Cisco Unified Communications Manager. You do not require an additional server. Cisco Extension Mobility can run on any server in a Cisco Unified Communications Manager cluster.

- Netscape 7.1, Internet Explorer 6, or Internet Explorer 7 for Cisco Unified Communications Manager Administration
- Ensure the TFTP server is reachable. You can optionally install TFTP and Cisco Unified Communications Manager on the same server.

Extension mobility functionality extends to most Cisco Unified IP Phones. Check the Cisco Unified IP Phone documentation to verify that Cisco Extension Mobility is supported.

**Note**

Cisco Unified IP Phone 7960 and Cisco Unified IP Phone 7960G that are running Cisco Extension Mobility may be equipped with Cisco 7914 Expansion Modules.

Backward Compatibility for Call Forward All Calling Search Space

An enhancement to the Call Forward All calling search space (CSS) allows Cisco Unified CallManager Release 4.x customers who are using Cisco Extension Mobility to upgrade to Cisco Unified Communications Manager Release 5.(x) and later releases without loss of functionality.

The CFA CSS Activation Policy service parameter supports this enhancement. In the Service Parameter Configuration window, this parameter displays in the Clusterwide Parameters (Feature - Forward) section with two options.

- With Configured CSS (default)
- With Activating Device/Line CSS

For more information about configuration options for Call Forward All, refer to the “[Directory Number Configuration](#)” chapter in the *Cisco Unified Communications Manager Administration Guide* and the “[Understanding Directory Numbers](#)” chapter in the *Cisco Unified Communications Manager System Guide*.

Additional Information

See the [Related Topics, page 8-30](#)

Interactions and Restrictions

Use the following sections to understand how Cisco Extension Mobility interacts with other Cisco Unified Communications Manager services and to understand restrictions that apply to Cisco Extension Mobility:

- [Interactions, page 8-9](#)
- [Restrictions, page 8-11](#)

Interactions

The following sections describe how Cisco Extension Mobility interacts with Cisco Unified Communications Manager applications:

- [Cisco Unified Communications Manager Services That Are Running on the Same Server, page 8-9](#)
- [Bulk Administration Tool, page 8-9](#)
- [Cisco Unified Communications Manager Assistant, page 8-10](#)
- [Cisco Unified Communications Manager Attendant Console, page 8-10](#)
- [Call Display Restrictions, page 8-10](#)
- [Intercom, page 8-10](#)

Cisco Unified Communications Manager Services That Are Running on the Same Server

Cisco Extension Mobility can run on the same Cisco Unified Communications Manager server with Cisco Unified Communications Manager Assistant and CDR Analysis and Reporting (CAR).

Bulk Administration Tool

You can use the Bulk Administration Tool (BAT) to add and delete several user device profiles for Cisco Extension Mobility at one time. Refer to the *Cisco Unified Communications Manager Bulk Administration Guide* for more information.

Additional Information

See the [Related Topics, page 8-30](#)

Cisco Unified Communications Manager Assistant

A manager who uses Cisco Extension Mobility can simultaneously use Cisco Unified Communications Manager Assistant. The manager logs into the Cisco Unified IP Phone by using Cisco Extension Mobility and then chooses the Cisco IP Manager Assistant service. When the Cisco IP Manager Assistant service starts, the manager can access assistants and all Cisco Unified Communications Manager Assistant features (such as call filtering and Do Not Disturb). For more information about Cisco Unified Communications Manager Assistant, see the [“Cisco Unified Communications Manager Assistant With Proxy Line Support”](#) chapter.

Cisco Unified Communications Manager Attendant Console

If a user logs in to or logs out of the Cisco Unified IP Phone by using Cisco Extension Mobility while the user is logged in to Cisco Unified Communications Manager Attendant Console, the Cisco Unified IP Phone resets, and the call-control status of the attendant console goes down. Cisco Unified Communications Manager Attendant Console displays a message that indicates that the attendant needs to log out and log back in if the directory numbers of the phone have changed. The user must log out of the Cisco Unified Communications Manager Attendant Console. When logging back into the Cisco Unified Communications Manager Attendant Console, the attendant must specify the current directory number of the phone in the Directory Number of Your Phone field of the Settings dialog box.

For more information on entering a directory number in the Cisco Unified Communications Manager Attendant Console, refer to the [“Configuring Cisco Unified Communications Manager Attendant Console Settings”](#) section.

Call Display Restrictions

When you enable Call Display Restrictions with Cisco Extension Mobility, Cisco Extension Mobility functions as usual: when a user is logged in to the device, the presentation or restriction of the call information depends on the user device profile that is associated with that user. When the user logs out, the presentation or restriction of the call information depends on the configuration that is defined for that phone type in the Phone Configuration window.

To use Call Display restrictions with Cisco Extension Mobility, you enable the Ignore Presentation Indicators in both the User Device Profile Configuration window (see the [“Creating the Device Profile for a User”](#) section on page 8-25) and the Phone Configuration window (see the [“Subscribing Cisco Unified IP Phones to Cisco Extension Mobility”](#) on page 28).

For more information about the Call Display Restrictions features, refer to the [“Call Display Restrictions”](#) chapter.

Intercom

Beginning with Release 6.1(1) of Cisco Unified Communications Manager, Cisco Extension Mobility supports the Intercom feature. To do so, Cisco Extension Mobility uses a default device that is configured for an intercom line. An intercom line gets presented only on the default device.

You can assign an intercom line to a device profile. When a user logs on to a device that is not the default device, the intercom line does not get presented.

The following additional considerations apply to intercom for Cisco Extension Mobility:

- For an existing intercom line that is assigned to a device, migration from a Release 6.0(1) of Cisco Unified Communications Manager to Release 6.1(1) or later automatically designates the intercom default device for that intercom line.
- When Cisco Unified Communications Manager assigns an intercom line to a device and the default device value is empty, the current device gets selected as the default device.
- When assignment of an intercom DN takes place programatically through AXL, ensure the intercom DN is updated separately by using Cisco Unified Communications Manager Administration to set the default device.
- When deletion of a device that is set as the intercom default device for an intercom line occurs, the deletion completes, and the intercom default device will no longer be set to the deleted device.

Restrictions

The following restrictions apply to Cisco Extension Mobility:

- Cisco Extension Mobility works on phones within a single Cisco Unified Communications Manager cluster only.
- The characters that display when a user logs in depend on the current locale of the phone. For example, if the phone is currently in the English locale (based on the Logout profile of the phone), the user can only enter English characters in the UserID.
- Cisco Extension Mobility supports a limited number of special characters that can be entered on the phone for the login user ID. These characters include . (period), @, ~, *, &, %, #, +, \$, \, the Euro sign, and the pound sterling sign.
- If the User Locale that is associated with the login user or profile is not the same as the locale or device, after a successful login, the phone will perform a restart followed by a reset. This occurs because the phone configuration file gets rebuilt. Addon module mismatches between profile and device may cause the same behavior.
- Cisco Extension Mobility requires a physical Cisco Unified IP Phone for login. Users of office phones that are configured with Cisco Extension Mobility cannot log in to their phones remotely.
- When a Cisco Extension Mobility user logs out of a device, all Call Back services that are active for the Cisco Extension Mobility user automatically cancel.
- When a migration from Cisco Unified CallManager Release 4.x to Cisco Unified Communications Manager Release 6.0 (or later) is done, the phones will not display the last login user IDs until users log in for the first time after the migration. When the service parameter “Remember Last Login” gets set to **True**, Cisco Extension Mobility displays the previous login user ID whenever the user logs in to the phone. This occurs based on a file on the hard disk. For the migration from Release 4.x to Release 6.0 (or later), this file does not get migrated to the database; therefore, the user ID of the previous login user will not display.
- If Cisco Extension Mobility gets stopped or restarted, the system does not auto log out users who are already logged in after the expiration of logout interval. For those phones, auto-logout happens only once in a day. You can manually log out these users from either the phones or from Cisco Unified Communications Manager Administration.

- Standard Extension Mobility (EM) Authentication Proxy Rights specifies both a standard role and a standard user group that are intended for use by applications that interact with Cisco Extension Mobility. Authentication by proxy does not support end-user authentication by proxy. Although you can add an end user to the Standard EM Authentication Proxy Rights user group, that end user does not get authorized to authenticate by proxy.
- Cisco Extension Mobility maintains a cache of all logged on user information for 2 minutes. If a request comes to extension mobility regarding a user who is represented in the cache, the user gets validated with information from the cache. This means that, if a user changes the password, logs out, and then logs back in within 2 minutes, both the old and new passwords get recognized.

Installing Cisco Extension Mobility for the First Time

When you install Cisco Unified CallManager 4.0 or later or Cisco Unified Communications Manager 5.0 or later, make sure that you also install the Cisco Unified Communications Manager Locale Installer on every server in the cluster. Installing the Locale Installer ensures that you have the latest translated text that is available for user windows and phone displays. For more information, refer to the *Cisco Unified Communications Operating System Administration Guide*.

Now, perform the procedures in the [“Configuring Cisco Extension Mobility”](#) section on page 8-12.

Additional Information

See the [Related Topics](#), page 8-30

Configuring Cisco Extension Mobility

Review the Configuration Guidelines before you configure the feature. If you are unsure how device profiles work, refer to the [“Understanding Device Profiles”](#) section on page 8-2. Then, perform the configuration procedures in the sequence that shows in the [“Configuration Checklist for Cisco Extension Mobility”](#) section on page 8-14:

- [Configuration Guidelines](#), page 8-12
- [Configuration Example 1](#), page 8-13
- [Configuration Example 2](#), page 8-13
- [Configuration Checklist for Cisco Extension Mobility](#), page 8-14

Configuration Guidelines

To avoid problems with deploying Cisco Extension Mobility, be sure to follow these configuration guidelines:

- Configure a Default Device Profile for each Cisco Unified IP Phone in a cluster that you want to support Cisco Extension Mobility.
- If you want to enable all phones within a Cisco Unified Communications Manager cluster for Cisco Extension Mobility, do not allow the users to control these phones.

- In this scenario, when users go to their Cisco Unified CM User Options window to change their services, they must choose the Device Profiles option from the Select a device to configure drop-down list box. They cannot control an individual phone nor modify the settings for an individual phone.
- As administrator, you can change the services for a phone by using Cisco Unified Communications Manager Administration. After making the changes, if you update on the main window (not the popup menu), you must reset the phone for the changes to take effect. This action ensures that the new snapshot gets stored as the logout profile.

**Note**

If the Enterprise Parameter “Synchronization between Auto Device Profile and Phone Configuration” is set to True, the auto device profile automatically updates, and you do not need to update on the main window.

- If a particular user controls a device, for example, the user office phone, do not allow anyone else to log in to that device.

**Caution**

The Cisco Extension Mobility feature does not operate properly if you allow users to access the assigned phone of another user.

- For information on Cisco Extension Mobility redundancy, refer to the *Cisco Unified Communications Solution Reference Network Design (SRND)* that is located at <http://www.cisco.com/go/srnd>.

Additional Information

See the [Related Topics](#), page 8-30.

Configuration Example 1

In a typical Cisco Extension Mobility scenario,

- All employees represent users of Cisco Extension Mobility.
- All users have a user device profile.
- Users do not control individual phones, and they cannot modify settings for an individual phone.
- Before a user can use a phone, the user needs to log in.
- Users can access common devices, such as lobby phones, conference room phones, and cubicle phones that are meant to be shared.
- When users go to their Cisco Unified Communications Manager window to change services or speed dials, they can choose only their device profiles from the “Select a device to configure” drop-down menu. This method ensures that changes that users make to their services will follow them to any Cisco Unified IP Phone after they log in.

Configuration Example 2

In another typical Cisco Extension Mobility scenario,

- Each user has an assigned phone.

- Each user has a device profile that follows the user to every device to which the user logs in.
- Each user can access common devices, such as lobby phones, conference room phones, and cubicle phones that are configured to be shared.
- In this scenario, no one can use the assigned phone of anyone else.

Additional Information

See the [Related Topics, page 8-30](#).

Configuration Checklist for Cisco Extension Mobility

Perform the procedures in the order shown in [Table 8-1](#) to configure Cisco Extension Mobility.

Summary steps in [Table 8-1](#) point out the major tasks that are required to configure Cisco Extension Mobility in Cisco Unified Communications Manager Administration. For a complete set of instructions, be sure to follow the procedure that is listed in the Related Procedures and Topics.

Table 8-1 Configuration Checklist for Cisco Extension Mobility

	Configuration Steps	Related Procedures and Topics
Step 1	<p>Using Cisco Unified Serviceability, choose Tools > Service Activation to activate the Cisco Extension Mobility service.</p> <p>Note To disable the extension mobility service on any node, you must first deactivate the service for that node in Service Activation.</p> <p>Note When a change in activation or deactivation of the Cisco Extension Mobility service occurs, on any node, the database tables get updated with information that is required to build the service URLs. The database tables also get updated when the extension mobility service parameters get modified. The EMApp service handles the change notification.</p>	<p>For information on service activation, refer to the <i>Cisco Unified Serviceability Administration Guide</i>.</p>

Table 8-1 Configuration Checklist for Cisco Extension Mobility (continued)

	Configuration Steps	Related Procedures and Topics
Step 2	<p>Create the Cisco Extension Mobility Service.</p> <p>Summary steps include</p> <ul style="list-style-type: none"> • Choose Device > Device Settings > Phone Services. • Enter the service name (such as, Extension Mobility Service or EM). • Enter the following URL: http://<IP Address of Extension Mobility server>:8080/emapp/EMAppServlet?device=#DEVICENAME# <p>Note If you should enter the URL incorrectly and subscribe the wrong service to the phones, you can correct the URL, save it, and press Update Subscriptions or correct the URL and resubscribe each phone to which the wrong service was subscribed.</p> <ul style="list-style-type: none"> • Select values for Service Category and Service Type. • Enter a value for Service Vendor (Java MIDlet services only). • Click Save. <p>Note For Java MIDlet services, the service name and service vendor must exactly match the values that are defined in the Java Application Descriptor (JAD) file.</p>	<p>Adding the Cisco Extension Mobility Service, page 8-17.</p>
Step 3	<p>Configure administration parameters.</p>	<p>Setting the Service Parameters, page 8-18</p>
Step 4	<p>Create a default device profile for each phone type that you want to support Cisco Extension Mobility.</p>	<p>Creating a Default Device Profile for Each Cisco Unified IP Phone Type, page 8-22</p>

Table 8-1 Configuration Checklist for Cisco Extension Mobility (continued)

	Configuration Steps	Related Procedures and Topics
Step 5	<p>Create the user device profile for a user.</p> <p>Summary steps include</p> <ul style="list-style-type: none"> • Choose Device > Device Settings > Device Profile and click Add New. • Enter the Device Type. • Enter the Device Profile Name, choose the phone button template, and click Save. • Enter the directory numbers (DNs) and required information and click Save. Repeat for all DN. • To enable intercom lines for this device profile, configure intercom directory numbers (DNs) for this device profile. You configure an intercom DN in the Intercom Directory Number Configuration window, which you can also access by choosing Call Routing > Intercom > Intercom Directory Number. You must designate a Default Activated Device in the Intercom Directory Number Settings pane for an intercom DN to be active. 	<p>Creating the Device Profile for a User, page 8-25</p> <p>Intercom Directory Number Configuration, Cisco Unified Communications Manager Administration Guide</p>
Step 6	<p>Associate a user device profile to a user.</p> <p>Summary steps include</p> <ul style="list-style-type: none"> • Choose User Management > End User and click Add New; enter user information. • In Available Profiles, choose the service that you created in Step 2 and click the down arrow; this places the service that you chose in the Controlled Profiles box. • Click Save. 	<p>Associating a User Device Profile to a User, page 8-27</p>

Table 8-1 Configuration Checklist for Cisco Extension Mobility (continued)

	Configuration Steps	Related Procedures and Topics
Step 7	<p>Configure and subscribe Cisco Unified IP Phone and user device profile to Cisco Extension Mobility.</p> <p>Summary steps include</p> <ul style="list-style-type: none"> • Subscribe the phone and the user device profile to Cisco Extension Mobility. • Choose Device > Phone and click Add New. • On the Phone Configuration window, in Extension Information, check Enable Extension Mobility. • In the Log Out Profile drop-down list box, choose Use Current Device Settings or a specific configured profile and click Save. • To subscribe Cisco Extension Mobility to the Cisco Unified IP Phone, go to the Related Links drop-down list box in the upper, right corner of the window and choose Subscribe/Unsubscribe Services; then, click Go. 	<p>Cisco Unified IP Phone Configuration, <i>Cisco Unified Communications Manager Administration Guide</i></p> <p>Subscribing Cisco Unified IP Phones to Cisco Extension Mobility, page 8-28</p> <p>Finding an Actively Logged-In Device, <i>Cisco Unified Communications Manager Administration Guide</i></p>

Adding the Cisco Extension Mobility Service

Add the Cisco Extension Mobility service as a new Cisco Unified IP Phone Service. Configure a name, description, and the URL for the Cisco Extension Mobility service.



Tip

When you subscribe devices to the Cisco Extension Mobility service, an error results if you click Update Subscriptions more than once. When you update many phones, it can take some time for the changes to propagate to all devices. You must click Update Subscriptions only once and wait for this propagation to complete.

To add the Cisco Extension Mobility service, perform the following steps:

Procedure

- Step 1** From Cisco Unified Communications Manager Administration, choose **Device > Device Settings > Phone Services**.
- Step 2** Click **Add New**.
- Step 3** At the Service Name field, enter a name for the service.

The user receives this name on the phone when the user presses the Services button. Use a meaningful name; for example, Extension Mobility or EM. For Java MIDlet services, the service name must exactly match the name that is defined in the Java Application Descriptor (JAD) file.
- Step 4** At the ASCII Service Name field, enter the name of the service to display if the phone cannot display Unicode.
- Step 5** Enter the Service URL field as it displays in the following example:
`http://<IP Address>:8080/emapp/EMAppServlet?device=#DEVICENAME#`

where IP Address of Extension Mobility server specifies the IP Address of the Cisco Unified Communications Manager where Cisco Extension Mobility Application is activated and running.

For example:

`http://123.45.67.89:8080/emapp/EMAppServlet?device=#DEVICENAME#`



Tip To provide redundancy for the Cisco Unified IP Phone Service, create a Cisco Unified IP Phone Service that uses the host name rather than the IP address. The phone functionality for softkeys and filtering, as well as the phone service, will fail over automatically in the case of a failover.

- Step 6** At the Service Category field, select whether the service is based on XML or Java MIDlet.
- Step 7** At the Service Type field, select whether the service will be provisioned to the Services, Directories, or Messages button.
- Step 8** For Java MIDlet services only, at the Service Vendor field, enter the service vendor that exactly matches the vendor that is defined in the JAD file. You can leave this field blank for XML services.



Note Be aware that entering a value for Service Version is not required. If you enter a value for a Java MIDlet service, the value must exactly match the version that is defined in the JAD file.

- Step 9** Click **Save**.

Additional Information

See the [Related Topics, page 8-30](#).

Setting the Service Parameters

Set the service parameters to define how the Cisco Extension Mobility service will work across a Cisco Unified Communications Manager cluster.

Be sure that you activate the Cisco Extension Mobility service before you configure the service parameters. Refer to the *Cisco Unified Serviceability Administration Guide* for information about using Cisco Unified Serviceability.

To set the Service Parameters for Cisco Extension Mobility, choose **System > Service Parameters** in Cisco Unified Communications Manager Administration; choose the server that is running the Cisco Extension Mobility service, and then **Cisco Extension Mobility**. After you configure the service parameters, click **Save**.

[Table 8-2](#) describes the Cisco Extension Mobility service parameters.

Table 8-2 Service Parameters for Cisco Extension Mobility Service

Setting	Description
Enforce Maximum Login Time	<p>Choose True to specify a maximum time for logins. After this time, the system automatically logs out the device. Choosing False, which is the default setting, means that no maximum time for logins exists.</p> <p>To set an automatic logout, you must choose True for the Enforce Maximum Login Time service parameter and also specify a system maximum login time for the True Maximum Login Time service parameter. Cisco Unified Communications Manager then uses the automatic logout service for all logins.</p>
Maximum Concurrent Requests	Specify the maximum number of login or logout operations that can occur simultaneously. This number prevents the Cisco Extension Mobility service from consuming excessive system resources. The default value, which specifies 5, addresses most scenarios adequately.
Multiple Login Behavior	<p>Choose one of the following options:</p> <ul style="list-style-type: none"> • Multiple Logins Allowed—A user can log in to more than one device at a time. • Multiple Logins Not Allowed—The second and subsequent login attempts after a user successfully logs in once will fail. • Auto Logout—After a user logs in to a second device, the Cisco Unified Communications Manager automatically logs the user out of the first device.
At the Alphanumeric User ID field	<p>Choose True to allow the user ID to contain alphanumeric characters. Choosing False allows the user ID to contain only numeric characters.</p> <p>Note The Alphanumeric User ID parameter applies systemwide. You can have a mix of alphanumeric and numeric user IDs. The system supports only user IDs that can be entered by using the alphanumeric keypad. The case-sensitive userid field requires the characters to be lower case.</p>

Table 8-2 Service Parameters for Cisco Extension Mobility Service (continued)

Setting	Description
Remember the Last User Logged In	<p>Choose the default value, False.</p> <p>In a typical hoteling scenario, where users can come into any office and use any phone on a temporary basis, you should set this parameter to False.</p> <p>A True setting specifies that the extension mobility application remembers the user ID of the last user that logged in to the phone. Use this setting in situations where individuals use their own phone on a regular basis, and no one else uses that phone.</p> <p>For example, Cisco Extension Mobility could be used to enable the types of calls that are allowed from a phone. Individuals who are not logged in and who are using their office phone can make only internal or emergency calls. But after logging in using Cisco Extension Mobility, the user can make local, long-distance, and international calls. In this scenario, only this user regularly logs in to the phone. It makes sense to set the Cisco Extension Mobility to remember the last user ID that logged in, and you would set the field to True. When the field is set to True, all future logins will cause the user ID of the last successful logged-in user to automatically get filled in and remembered by Cisco Extension Mobility.</p>
At the Clear Call Log	<p>Choose True to specify that the call logs are cleared during the Cisco Extension Mobility manual login/logout process.</p> <p>While a user is using the Cisco Extension Mobility service on an IP phone, all calls (placed, received, or missed) appear in a call log and can be retrieved and seen on the IP phone display. To ensure user privacy by preventing other users of the same phone from seeing the call logs of the previous user, set the Clear Call Log service parameter to True. This ensures that the call logs get cleared when a successful login/logout occurs.</p> <p>Note Call logs get cleared only during manual Cisco Extension Mobility login/logout. If a Cisco Extension Mobility logout occurs due to an automatic logout or any occurrence other than a manual logout, the call logs do not get cleared.</p>

Table 8-2 Service Parameters for Cisco Extension Mobility Service (continued)

Setting	Description
Validate IP Address	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>This parameter specifies whether validation of the IP address of the source that is requesting login or logout occurs.</p> <p>If the parameter specifies true, the IP address from which an Cisco Extension Mobility log in or log out request is made gets validated to ensure that it is a trusted IP address.</p> <p>Validation gets first performed against the cache for the device to be logged in or logged out.</p> <p>If the requesting source IP address is not found in cache, the IP address gets checked against the list of trusted IP addresses and host names specified in the Trusted List of IPs service parameter.</p> <p>If the requesting source IP address is not present in the Trusted List of IPs service parameter, it is checked against the list of devices registered to Cisco Unified CallManager.</p> <p>If the IP address of the requesting source is found in the cache or in the list of trusted IP addresses or is a registered device, the device is allowed to perform login or logout.</p> <p>If the IP address is not found, the log in or log out attempt is blocked. If the parameter specifies false, the Cisco Extension Mobility log in or log out request does not get validated.</p> <p>Validation of IP addresses may increase the time required to log in or log out a device, but it offers an additional layer of security in the effort to prevent unauthorized log in or log out attempts, especially when used in conjunction with log ins from separate trusted proxy servers for remote devices.</p> <p>Note When PSIRT (Validate IP Address) is set to true, autologout does not go through the PSIRT validation path. The EM logs show that the phone signs out without PSIRT information. This scenario explains why the user signed out automatically instead of manually signing out.</p>
Trusted List of IPs	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>This parameter displays as a text box (maximum length - 1024 characters). You can enter strings of trusted IP addresses or host names, separated by semi-colons, in the text box. IP address ranges and regular expressions do not get supported.</p>

Table 8-2 Service Parameters for Cisco Extension Mobility Service (continued)

Setting	Description
Allow Proxy	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>If the parameter specifies true, the Cisco Extension Mobility log in and log out operations using a web proxy are allowed.</p> <p>If the parameter specifies false, the Cisco Extension Mobility log in and log out requests coming from behind a proxy get rejected.</p> <p>The setting you select takes effect only if the Validate IP Address parameter specifies true.</p>
Extension Mobility Cache Size	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>In this field, configure the size of the device cache that is maintained by Cisco Extension Mobility. The minimum value for this field is 1000 and the maximum is 20000. The default specifies 10000.</p> <p>The value you enter takes effect only if the Validate IP Address parameter specifies true.</p>

Additional Information

See the [Related Topics, page 8-30](#).

Creating a Default Device Profile for Each Cisco Unified IP Phone Type

Configure a clusterwide default device profile for each type of Cisco Unified IP Phone that you want to support Cisco Extension Mobility. The phone takes on the default device profile whenever a user logs in to a phone type for which the user has no user device profile.

For more information on how Default Device Profiles work, see the [“Overview of Cisco Extension Mobility” section on page 8-2](#).

To add a default device profile for a phone type, perform the following procedure.

Procedure

-
- Step 1** From Cisco Unified Communications Manager Administration, choose **Device > Device Settings > Default Device Profile**.
- The Default Device Profile Configuration window displays.
- Step 2** From the Device Profile Type drop-down list box, choose the device (such as a Cisco 7970) to which a profile gets created.
 - Step 3** Click **Next**.
 - Step 4** If applicable, from the Select the device protocol drop-down list box, choose a protocol.
 - Step 5** Click **Next**.

Step 6 From the User Hold Audio Source field, choose from the drop-down list box to specify the audio source that plays when a user initiates a hold action.

If you do not choose an audio source, Cisco Unified Communications Manager uses the audio source that is defined in the device pool or, if the device pool does not specify an audio source ID, the system default.



Tip You define audio sources in the Music On Hold Audio Source Configuration window. For access, choose **Media Resources > Music On Hold Audio Source**.

Step 7 At the User Locale drop-down list box, choose the locale that is associated with the phone user interface. The user locale identifies a set of detailed information, including language and font, to support users. Cisco Unified Communications Manager makes this field available only for phone types that support localization.



Note If no user locale is specified, Cisco Unified Communications Manager uses the user locale that is associated with the device pool.



Note If the users require information to display (on the phone) in any language other than English, verify that the locale installer is installed **before** configuring user locale. Refer to the Cisco Unified Communications Manager Locale Installer documentation.

Step 8 At the Phone Button Template field, choose the appropriate phone button template. The phone button template determines the configuration of the phone buttons on Cisco Unified IP Phones.

Step 9 At the Softkey Template field, choose the appropriate softkey template. The softkey template determines the configuration of the softkeys on Cisco Unified IP Phones. Choose None if you want to use the softkey profile that is configured in Common Device Configuration.

Step 10 From the Privacy drop-down list box, choose **On** for each phone that wants Privacy. For more configuration information, refer to the [“Barge and Privacy” section on page 1-1](#).

Step 11 From the Single Button Barge/cBarge drop-down list, choose one of the following options:

- **Off**—This device does not allow users to use the Single Button Barge/cBarge feature.
- **Barge**—Choosing this option allows users to press the Single Button Barge shared-line button on the phone to barge in to a call by using Barge.
- **cBarge**—Choosing this option allows users to press the Single Button cBarge shared-line button on the phone to barge in to a call by using cBarge.
- **Default**—This device inherits the Single Button Barge/cBarge setting from the service parameter.

For more configuration information, refer to the [“Barge and Privacy” section on page 1-1](#).

Step 12 From the Join Across Lines drop-down list, choose one of the following options:

- **Off**—This device does not allow users to use the Join Across Lines feature.
- **On**—This device allows users to join calls across multiple lines.
- **Default**—This device inherits the Join Across Lines setting from the service parameter.

For more information, refer to [“Understanding Directory Numbers”](#) in the *Cisco Unified Communications Manager System Guide*.

- Step 13** To configure call display restrictions and ignore any presentation restriction that is received for internal calls, check the “Ignore Presentation Indicators (internal calls only)” check box.



Note Use this configuration in combination with the calling line ID presentation and connected line ID presentation configuration at the translation pattern-level. Together, these settings allow you to configure call display restrictions to selectively present or block calling and/or connected line display information for each call. For more information about call display restrictions, refer to the [Call Display Restrictions](#) chapter.

- Step 14** If the phone type supports a Cisco Unified IP Phone Expansion Module, Cisco Unified Communications Manager displays the expansion module field.

- a. At the Module 1 drop-down list box, choose the appropriate expansion module.
- b. At the Module 2 drop-down list box, choose the appropriate expansion module or choose **None**.

- Step 15** To configure Multilevel Precedence and Preemption (MLPP) information, perform the following tasks:



Note Refer to the [“Multilevel Precedence and Preemption”](#) section on page 26-1 for more information.

- a. At the MLPP Domain, use the drop-down list box to choose the MLPP domain that is associated with this device profile.
- b. If available, the MLPP Indication setting specifies whether a device will use the capability when it places the MLPP precedence call.

From the drop-down list box, choose a setting from the following options to assign to devices that use this default device profile:

- **Default**—This device inherits its MLPP indication setting from its device pool.
- **Off**—This device does not send indication of an MLPP precedence call.
- **On**—This device does send indication of an MLPP precedence call.



Note Do not configure a default device profile with the following combination of settings: MLPP Indication is set to *Off* while MLPP Preemption is set to *Forceful*.

- c. If available, the MLPP Preemption setting specifies whether a device that is capable of preempting calls in progress will use the capability when it places an MLPP precedence call.

From the drop-down list box, choose a setting from the following options to assign to devices that use this default device profile:

- **Default**—This device inherits its MLPP preemption setting from its device pool.
- **Disabled**—This device does not preempt calls in progress when it places an MLPP precedence call.
- **Forceful**—This device preempts calls in progress when it places an MLPP precedence call.



Note Do not configure a default device profile with the following combination of settings: MLPP Indication is set to *Off* while MLPP Preemption is set to *Forceful*.

Step 16 Click **Save**.

Additional Information

See the [Related Topics](#), page 8-30.

Creating the Device Profile for a User

The User Device Profile contains attributes such as name, description, phone template, add-on modules, directory numbers, subscribed services, and speed-dial information.



Note

Before proceeding, you must ensure that a device profile name and phone button template(s) are configured.

To add a default device profile for a new user of Cisco Extension Mobility, perform the following procedure.



Note

If you configure BLF speed-dial buttons in the Device Profile Configuration window, a device that supports Cisco Extension Mobility can display the real-time status of the BLF speed-dial buttons after you log in to the device; that is, if the Presence Group that is applied to the device profile allows you to view the status of the presence entity. Refer to [“Presence”](#) for more details.

Procedure

Step 1 From Cisco Unified Communications Manager Administration, choose **Device > Device Settings > Device Profile**.

The Find and List Device Profiles window displays.

Step 2 Click **Add New**.

The Device Profile Configuration window displays.

From the Device Profile Type drop-down list box, choose the device type and click **Next**.

If applicable, from the Select the device protocol field, choose a protocol.

Click **Next**.

Step 3 At the Device Profile Name field, enter a name of your choice for the device profile. You can make this text anything that describes this particular user device profile, such as “Extension Mobility.”

Step 4 At the User Locale drop-down list box, choose the locale that is associated with the phone user interface.

The user locale identifies a set of detailed information, including language and font, to support users. Cisco Unified Communications Manager makes this field available only for phone models that support localization.



Note

If no user locale is specified, Cisco Unified Communications Manager uses the user locale that is associated with the device pool.



Note If the users require information to display (on the phone) in any language other than English, verify that the locale installer is installed before configuring user locale. Refer to the Cisco IP Telephony Locale Installer documentation.

- Step 5** At the Phone Button Template field, choose the appropriate phone button template. The phone button template determines the configuration of the phone buttons on Cisco Unified IP Phones.
- Step 6** From the Softkey Template drop-down list box, choose a softkey template. If you want to use the softkey template that is configured in the Common Device Configuration, choose None.
- Step 7** From the Privacy drop-down list box, choose **On** for each phone that wants Privacy. For more configuration information, refer to the [“Barge and Privacy” section on page 1-1](#).
- Step 8** To enable the Call Display Restrictions feature, check the Ignore Presentation Indicators check box.



Note To enable the Call Display Restrictions feature, check the Ignore Presentation Indicators check box on the User Device Profile window and also on the Phone Configuration window (see the [“Subscribing Cisco Unified IP Phones to Cisco Extension Mobility” section on page 8-28](#)).

- Step 9** If the phone type supports Cisco Unified IP Phone Expansion Modules, Cisco Unified Communications Manager displays expansion module field. At the Module 1 drop-down list box and at the Module 2 drop-down list box, choose the appropriate expansion module.



Note You may view a phone button list at any time by choosing the View button list link next to the phone button template fields. A separate window pops up and displays the phone buttons for that particular expansion module.

- Step 10** To configure Multilevel Precedence and Preemption (MLPP) information, perform the following tasks:



Note Refer to the [“Multilevel Precedence and Preemption” section on page 26-1](#) for more information.

- a. From the MLPP Domain drop-down list box, choose a hexadecimal value for the MLPP domain that is associated with this device profile.
- b. If available, the MLPP Indication setting specifies whether a device will use the capability when it places the MLPP precedence call.

From the drop-down list box, choose a setting from the following options to assign to devices that use this default device profile:

- **Default**—This device inherits its MLPP indication setting from its device pool.
- **Off**—This device does not send indication of an MLPP precedence call.
- **On**—This device does send indication of an MLPP precedence call.



Note Do not configure a default device profile with the following combination of settings: MLPP Indication is set to *Off* while MLPP Preemption is set to *Forceful*.

- c. If available, the MLPP Preemption setting specifies whether a device that is capable of preempting calls in progress will use the capability when it places an MLPP precedence call.

From the drop-down list box, choose a setting from the following options to assign to devices that use this default device profile:

- **Default**—This device inherits its MLPP preemption setting from its device pool.
- **Disabled**—This device does not preempt calls in progress when it places an MLPP precedence call.
- **Forceful**—This device preempts calls in progress when it places an MLPP precedence call.



Note Do not configure a default device profile with the following combination of settings: MLPP Indication is set to *Off* while MLPP Preemption is set to *Forceful*.

Step 11 From the Login User Id drop-down list box, choose a user ID.

Click **Save**.

The page refreshes.

Step 12 From the Association Information section, click the Add a new DN link.

Step 13 At the Directory Number field, enter the directory number and click **Save**.

Refer to “[Directory Number Configuration Settings](#)” in the *Cisco Unified Communications Manager Administration Guide* for field descriptions.

Step 14 Refer to the “[Device Profile Configuration](#)” chapter in the *Cisco Unified Communications Manager Administration Guide* for more details of configuring a device profile.

Step 15 The following prompt displays: Changes to Line or Directory Number settings require restart.

Click **Reset** and follow the prompts.

Additional Information

See the [Related Topics, page 8-30](#).

Associating a User Device Profile to a User

You associate a User Device Profile to a user in the same way that you associate a physical device. For more details, refer to the “Adding a New User” in the *Cisco Unified Communications Manager Administration Guide*.



Tip

You can use the Bulk Administration Tool (BAT) to add and delete several user device profiles for Cisco Extension Mobility at one time. Refer to the *Cisco Unified Communications Manager Bulk Administration Guide* for more information.

To associate a user device profile to a user for Cisco Extension Mobility, follow these steps:

Procedure

Step 1 From Cisco Unified Communications Manager Administration, choose **User Management > End User**.

Step 2 Click **Add New**.

- Step 3** Enter the appropriate settings as described in “[End User Configuration Settings](#)” in the *Cisco Unified Communications Manager Administration Guide*.
- Step 4** To save your changes and add the user, click **Save**.



Note To choose an existing end user, click **Find** and then choose the end user to whom you want to associate a user device profile. Refer to “[Finding an End User](#)” in the *Cisco Unified Communications Manager Administration Guide*.

Additional Information

See the [Related Topics, page 8-30](#).

Subscribing Cisco Unified IP Phones to Cisco Extension Mobility

Prerequisite

You must configure the Cisco Unified IP Phones in Cisco Unified Communications Manager before you subscribe the phones to Cisco Extension Mobility. To configure the phones, refer to the “[Cisco Unified IP Phone Configuration](#)” chapter in the *Cisco Unified Communications Manager Administration Guide*.

For a review of device profiles, refer to the “[Understanding Device Profiles](#)” section on page 8-2.

To subscribe to the Cisco Extension Mobility service, perform the following procedure.

Procedure

- Step 1** From Cisco Unified Communications Manager Administration, choose **Device > Phone**.
- Step 2** Click **Add New**.



Note You can also search and update a configured phone as described in “[Finding a Phone](#)” in the *Cisco Unified Communications Manager Administration Guide*.

The Add a New Phone window displays.

- Step 3** From the Phone Type drop-down list box, choose the phone type to which you want to subscribe extension mobility and click **Next**.
- Step 4** From the Select the device protocol drop-down list box, choose the protocol of the phone and click **Next**.
- Step 5** In Extension Information, check the Enable Extension Mobility check box.



Note For descriptions of all fields, refer to “[Phone Configuration Settings](#)” in the *Cisco Unified Communications Manager Administration Guide*.

- Step 6** From the Log Out Profile drop-down list box, choose the profile that you want the phone to use when no extension mobility user is logged in. You can choose either Use Current Device Settings or one of the specific configured profiles that are listed.



Note If you select a specific configured profile, a mapping between the login device and the login profile gets retained after the user logs out. If you select Use Current Device Settings, no mapping gets retained.

The remaining fields show the current device information with regard to the login status of the device: Log in Time, Log out Time.

Step 7 On the Cisco Unified Communications Manager Phone Configuration window, to enable the Call Party Restrictions feature, check the Ignore Presentation Indicators check box.



Note To enable the Call Display Restrictions feature, check the Ignore Presentation Indicators check box on the Phone Configuration window and also on the User Device Profile window (see the [“Creating the Device Profile for a User”](#) section on page 8-25). For information about this feature, refer to the [“Call Display Restrictions”](#) chapter.

Step 8 Click **Save**.

You must now subscribe the extension mobility IP phone service to both the device profile that you created in the [“Creating a Default Device Profile for Each Cisco Unified IP Phone Type”](#) section on page 8-22 and the IP phone target device.

Step 9 To subscribe extension mobility to the IP phone, go to the Related Links drop-down list box in the upper, right corner of the window and choose Subscribe/Unsubscribe Services; then, click **Go**.

A separate Subscribed Cisco IP Phone Services window displays.

Step 10 From the Select a Service drop-down list box, choose the service to which you want this IP phone to subscribe.

Step 11 Click **Next**.

Step 12 Click **Subscribe**.

Step 13 The new service(s) displays under Subscribed Services.

Step 14 Click **Save**.

Step 15 Repeat the procedure for each service to which you want this IP phone to subscribe.

Step 16 To unsubscribe a service, click **Unsubscribe** and **Save**.



Note To subscribe/unsubscribe services to a device profile, see the [“Creating a Default Device Profile for Each Cisco Unified IP Phone Type”](#) section on page 8-22

You have now configured Cisco Extension Mobility.

Additional Information

See the [Related Topics](#), page 8-30.

Providing Information to Cisco Extension Mobility Users

After you have configured the system for Cisco Extension Mobility, provide your phone users with the following information:

- Notification of feature availability and the phone types that support Cisco Extension Mobility. Include the name that you gave the Cisco Extension Mobility feature (for example, extension mobility). In addition, notification of changes with respect to activation and deactivation of extension mobility service on any node in the Cisco Unified Communications Manager cluster.
- User password, UserID, and PIN
- URL for the Cisco Unified CM User Options window for the user to change user password and PIN



Note Be aware that user passwords and PINs can only contain characters that the IP phones support: the digits 0 - 9 and their corresponding letters, the asterisk (*), and the octothorpe or pound sign (#).

- Their phone user guide that contains a Cisco Extension Mobility overview and instructions on logging in, logging out, and troubleshooting the feature.
- The *Customizing Your Cisco Unified IP Phone on the Web* document that contains information on using their Cisco Unified CM User Options window.
- Description of the feature login and logout behavior that you defined in the “[Setting the Service Parameters](#)” section on page 8-18.



Note

When a user logs in from a phone and the phone displays a “Change PIN” message, the end user must change the end user PIN. When a user logs in from a phone and the phone displays a “Change Password” message, the Cisco Unified Communications Manager administrator must change the CCMSysUser password.

Additional Information

See the [Related Topics](#), page 8-30.

Related Topics

- [Introducing Cisco Extension Mobility](#), page 8-1
- [Overview of Cisco Extension Mobility](#), page 8-2
- [Understanding Device Profiles](#), page 8-2
- [Login and Logout Behavior](#), page 8-4
- [Login Call Flow](#), page 8-5
- [Logout Call Flow](#), page 8-6
- [System Requirements for Cisco Extension Mobility](#), page 8-8
- [Interactions and Restrictions](#), page 8-9
- [Installing Cisco Extension Mobility for the First Time](#), page 8-12
- [Configuring Cisco Extension Mobility](#), page 8-12

- [Configuration Example 1](#), page 8-13
- [Configuration Example 2](#), page 8-13
- [Configuration Checklist for Cisco Extension Mobility](#), page 8-14
- [Adding the Cisco Extension Mobility Service](#), page 8-17
- [Setting the Service Parameters](#), page 8-18
- [Creating the Device Profile for a User](#), page 8-25
- [Associating a User Device Profile to a User](#), page 8-27
- [Subscribing Cisco Unified IP Phones to Cisco Extension Mobility](#), page 8-28
- [Providing Information to Cisco Extension Mobility Users](#), page 8-30

Other Configuration

- [Device Profile Configuration](#), *Cisco Unified Communications Manager Administration Guide*
- [End User Configuration](#), *Cisco Unified Communications Manager Administration Guide*
- [Cisco Unified IP Phone Configuration](#), *Cisco Unified Communications Manager Administration Guide*
- [Finding an Actively Logged-In Device](#), *Cisco Unified Communications Manager Administration Guide*
- [Intercom Directory Number Configuration](#), *Cisco Unified Communications Manager Administration Guide*

Additional Documentation

- *Cisco Unified Communications Solution Reference Network Design (SRND)* (for redundancy), <http://www.cisco.com/go/srnd>.

