



Extension Mobility

This chapter provides information about Cisco Extension Mobility which 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 supports Cisco Unified IP Phones that run SCCP and SIP.

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. 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.

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Configure 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. 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.

Perform the procedures in the order shown in the following steps to configure Cisco Extension Mobility. For more information on Cisco Extension Mobility, see the [Cisco Extension Mobility Feature, on page 3](#) and the **Extension Mobility**.

Procedure

- Step 1** Using Cisco Unified Serviceability, choose **Tools > Service Activation** to activate the Cisco Extension Mobility service.
- Note** To disable the extension mobility service on any node, you must first deactivate the service for that node in Service Activation.
- 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 EApp service handles the change notification.
- Step 2** Create the Cisco Extension Mobility Service. Summary steps include
- Choose **Device > Device Settings > Phone Services**.
 - Enter the service name (such as, Extension Mobility Service or EM).
 - Enter the following URL:
`http://10.89.80.19:8080/emapp/EAppServlet?device=#DEVICENAME#`
- 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.
- Select values for Service Category and Service Type.
 - For Service Category select “XML Service”.
 - For Service Type, select “Standard IP Phone Service.”
 - Enter a value for Service Vendor (Java MIDlet services only).
 - Click **Save**.
- 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.
- Step 3** Configure administration parameters.
- Step 4** Create a default device profile for each phone type that you want to support Cisco Extension Mobility.
- Step 5** Create the user device profile for a user. Summary steps include
- 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.
- To subscribe the device profile to Cisco Extension Mobility, on the Device Profile Configuration Window, from the related links drop-down list (in the upper right corner of the window), choose “Subscribe/Unsubscribe Services” and click **Go**.

Note Subscribe the directory number and the device profile the same Extension Mobility service.

- Step 6** Associate a user device profile to a user. Summary steps include
- Choose **User Management** > **End User** and click **Add New**; enter user information.
 - In Extension Mobility Available Profiles, choose the user device profile that you created in **Configure Cisco Extension Mobility** and click the down arrow; this places the service that you chose in the Controlled Profiles box.
 - Click **Save**.
- Step 7** Configure and subscribe Cisco Unified IP Phone and user device profile to Cisco Extension Mobility. Summary steps include
- 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**.
- Step 8** To allow a Cisco Extension Mobility end user to change the user PIN on the phone, configure the Change Credential Cisco Unified IP Phone service and associate the user, the user device profile, or the Cisco Unified IP Phone with the Change Credential phone service.
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Cisco Extension Mobility Feature

This section provides information to configure and troubleshoot Cisco Extension Mobility, and includes information about the following:

- Cisco Extension Mobility and Extension Mobility equivalency
- Device profiles

- Login and logout behavior and call flow

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 Communications Self Care Portal 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

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 (**Device > Device Settings > Default Device Profile**). 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 and deactivate services from **Cisco Unified Serviceability > Service Activation**. See the *Cisco Unified Serviceability Administration Guide* for more information.



Note

Cisco Extension Mobility works only between phones that are configured in Cisco Unified Communications Manager Administration.



Note Cisco Extension Mobility Cross Cluster works on phones that are located in different Cisco Unified Communications Manager clusters. For details about the Cisco Extension Mobility Cross Cluster feature, see the [Extension Mobility Cross Cluster](#) chapter.

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 Service Parameters window [**System** > **Service Parameters**]), and define the phones that will support the feature (using the Default Device Profile window [**Device** > **Device Settings** > **Default Device Profile**]).

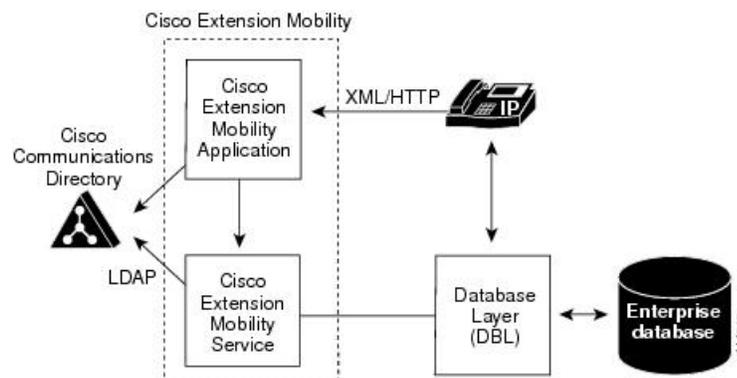
As a system administrator, you can configure a user device profile for each individual user. Using the Cisco Unified Communications Self Care Portal, a user can access this profile and make changes, such as adding a service like Cisco Extension Mobility.

Users access Cisco Extension Mobility by pressing the Services or Applications 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.

If the user phone is subscribed to the Change Credential IP Phone service, the user can use the Change Credential IP Phone service to change the user PIN.

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 the following figure.)

Figure 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 7975 and logs into a Cisco Unified IP Phone 7975), 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 7975 logs in to a Cisco Unified IP Phone 7906, 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 7906.
- The user can access the phone template and the softkey template of the Cisco Unified IP Phone 7906.
- The user cannot access an add-on module because Cisco Unified IP Phone 7906 does not support it.
- The user can access Cisco Unified IP Phone Services if they are configured for the Cisco Unified IP Phone 7906, but the parameters from the subscriber services will reflect the default device profile, not the parameters that the user chose on the Cisco Unified Communications Self Care Portal.

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.

Secure Extension Mobility

The Extension Mobility HTTPS Support feature ensures that when communications are exchanged between a Cisco Unified IP Phone service and other applications, that the communications use the HTTPS protocol to ensure that the communications are secure. Users must log into the Cisco Unified CM applications by providing their authentication information. Their credentials are encrypted after the communication protocol changes to HTTPS.

When a visiting Extension Mobility (EM) application fails to locate a user's identification in the local database, the following event occurs:

1. Cisco Extension Mobility Cross Cluster (EMCC) sends a request to the local EM service to determine the home cluster of that user (the cluster which owns the user's identification, and which can handle the EM login).
2. The visiting EM service sends a user identification message over HTTPS to all the remote clusters added in the local database.
3. The visiting EM service then parses the response received from the home cluster to get the list of device profiles associated with that user.

All further communication between the visiting EM service and home EM service takes place over HTTPS.

Similarly, visiting logout requests are also sent from the home EM service to the visiting EM service over HTTPS.

The Extension Mobility HTTPS Support feature is supported on the following IP phones (SIP):

- Cisco Unified IP Phone 8961
- Cisco Unified IP Phone 9951
- Cisco Unified IP Phone 9971



Note Configure Cisco Extension Mobility on Cisco Unified IP Phones before configuring EMCC.

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 Communications Self Care Portal 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. At the Enforce Maximum Login Time, choose True to specify a maximum time for logins and then set the maximum login time.

See the [Set the Service Parameters, on page 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.

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 or Applications 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 (**Device > Phone**) 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.

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 or Applications 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 (**Device > Phone**) 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 allows the user to use any phone button template that is configured on the system.

Cisco Unified Communications Manager enhances the existing Extension Mobility (EM) equivalency mechanism to work across both SCCP and SIP protocols on the following models:

- Cisco 7906
- Cisco 7941
- Cisco 7941G-GE
- Cisco 7942
- Cisco 7945
- Cisco 7961
- Cisco 7961G-GE
- Cisco 7962
- Cisco 7965
- Cisco 7970
- Cisco 7971
- Cisco 7975
- Cisco IP Communicator

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



Note The list of supported phone models varies per version and device pack. Log in to Cisco Unified Reporting to obtain the complete list of phone models that support these features in your installation. Within Cisco Unified Reporting, choose the Unified CM Phone Feature List system report. When generating this system report, specify All in the Product drop-down list box. In the Feature drop-down list box, specify Size Safe on Phone Template.

Size Safe Feature

If a phone model supports Size Safe on Phone Button Template, any phone button template can associate with that phone model. The actual phone button layout that displays on the phone shows the same order as the defined phone button template. If the phone model has more buttons than the phone button template, all defined buttons display. If the phone model has fewer buttons than the defined phone button template, only the buttons that are available on the phone display.

For example, a Cisco Unified IP Phone 7961 phone button template defines the following buttons:

- Line1
- Line2
- SD1
- SD2
- Line3
- Line4

When this phone button template gets assigned to a Cisco Unified IP Phone 7942, the actual phone button layout shows the following:

- Line1
- Line2

The rest of the template does not display because the buttons are not available.

When this phone button template gets assigned to a Cisco Unified IP Phone 7975, that actual phone button layout shows the following:

- Line1
- Line2
- SD1
- SD2
- Line3
- Line4
- Undefined
- Undefined

Thus, if a phone model supports the Size Safe on Phone Button Template feature, regardless of the login profile model, the user always sees the same order of the phone button template layout as that which gets defined with the login profile.

EM Equivalency During Login

Size safe phones use the template from the login profile and the template is applied as described in the preceding section.

Non-size safe phones must use the template that is associated with the default device profile for the model and protocol that matches the phone that the user logs into.



Note The device that the user logs into must support Size Safe on Phone Template for EM Equivalency. The capability of the EM Profile does not effect EM Equivalency during login.

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 8.0 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.

Backward Compatibility for Call Forward All Calling Search Space

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

The CFA CSS Activation Policy service parameter supports this enhancement. In the Service Parameter Configuration window (**System > Service Parameters**), 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, see topics related to directory number configuration in the *Cisco Unified Communications Manager Administration Guide* and in the *Cisco Unified Communications Manager System Guide*.

Interactions and Restrictions

This section provides information about how Cisco Extension Mobility interacts with other Cisco Unified Communications Manager services and the restrictions that apply to Cisco Extension Mobility.

Interactions

This section describes how Cisco Extension Mobility reacts when running on more than one server, as well as the interaction with Cisco Unified Communications Manager application features such as the Bulk Administration Tool, CUCM Assistant, Call Display, Intercom, and IPv6.

CUCM Services 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. See the Cisco Unified Communications Manager Bulk Administration Guide for more information.

CUCM 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.

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 (**Device > Phone**).

To use Call Display restrictions with Cisco Extension Mobility, enable the Ignore Presentation Indicators (internal calls only) in both the Device Profile Configuration window (see the [Create the Device Profile for a User, on page 26](#)) and the Phone Configuration window (see the [Subscribe Cisco Unified IP Phones to Cisco Extension Mobility, on page 29](#)).

For more information about the Call Display Restrictions features, see the [Call Display Restrictions](#) chapter.

Intercom

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.

Internet Protocol Version 6 (IPv6)

Cisco Extension Mobility supports IPv4, so you cannot use phones with an IP Addressing Mode of IPv6 Only for Cisco Extension Mobility. If you want to use Cisco Extension Mobility with the phone, make sure that you configure the phone with an IP Addressing Mode of IPv4 Only or IPv4 and IPv6. For more information on IPv6, see the [Internet Protocol Version 6 \(IPv6\)](#).

Restrictions

The following restrictions apply to Cisco Extension Mobility:

- Cisco Extension Mobility works only between phones that are configured in Cisco Unified Communications Manager Administration.
- 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 do not display the last login user IDs until users log in for the first time after the migration. When the service parameter “Remember the Last User Logged In” 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 does 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.

Install Cisco Extension Mobility

When you install Cisco Unified Communications Manager, make sure that you also install the Cisco Unified Communications Manager Locale Installer on every server. Installing the Locale Installer ensures that you have the latest translated text that is available for user windows and phone displays. For more information, see the Cisco Unified Communications Operating System Administration Guide.

Now, perform the procedures in the [Cisco Extension Mobility Configuration](#), on page 15.

Cisco Extension Mobility Configuration

This section contains information to configure Cisco Extension Mobility and includes guidelines, examples, and procedures.



Tip Before you configure Cisco Extension Mobility, review the Cisco Extension Mobility configuration task summary.

Related Topics

[Configure Cisco Extension Mobility](#), on page 1

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 type that you want to support Cisco Extension Mobility.
- If you want to enable all phones for Cisco Extension Mobility, do not allow the users to control these phones.

- In this scenario, when users go to their Cisco Unified Communications Self Care Portal 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.
- 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, see the Cisco Unified Communications Solution Reference Network Design (SRND).

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 Self Care Portal 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.

Add 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**.
-

Set the Service Parameters

Set the service parameters to define how the Cisco Extension Mobility service will work.

Be sure that you activate the Cisco Extension Mobility service before you configure the service parameters. See 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. To display all service parameters, click **Advanced**. After you configure the service parameters, click -

The following table describes the Cisco Extension Mobility service parameters.



Note

Service parameters with “intra-cluster” in the name apply to the Cisco Extension Mobility feature. Service parameters with “inter-cluster” in the name apply only to the Cisco Extension Mobility Cross Cluster feature.

Table 1: Service Parameters for Cisco Extension Mobility Service

Setting	Description
Enforce Intra-cluster Maximum Login Time	<p>Choose True to specify a maximum time for local 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 Intra-cluster Maximum Login Time service parameter and also specify a system maximum login time for the Intra-cluster Maximum Login Time service parameter. Cisco Unified Communications Manager then uses the automatic logout service for all logins.</p>
Intra-cluster Maximum Login Time	<p>This parameter specifies the maximum time that a user is allowed to be locally logged in to a device, such as 8:00 (8 hours) or :30 (30 minutes).</p> <p>The system ignores this parameter if the Enforce Intra-cluster Maximum Login Time parameter is set to False.</p> <p>Valid values specify between 0:01 and 168:00 in the format HHH:MM where HHH represents the number of hours and MM represents the number of minutes.</p>

Setting	Description
Inter-cluster Maximum Login Time	<p>This field applies only to Extension Mobility Cross Cluster (EMCC) configuration.</p> <p>This parameter specifies the maximum time that a user is allowed to be remotely logged in to a device, such as 8:00 (8 hours) or :30 (30 minutes). EMCC always enforces auto logout based on this value, regardless of the value of Enforce Intra-cluster Maximum Login Time service parameter.</p> <p>Valid values specify between 0:00 and 168:00 in the format HHH:MM where HHH represents the number of hours and MM represents the number of minutes. (0:00 means indefinite logon: you will remain logged on without a maximum login time.)</p>
Maximum Concurrent Requests	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>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.</p>
Intra-cluster Multiple Login Behavior	<p>Choose one of the following options:</p> <ol style="list-style-type: none"> 1. Multiple Logins Allowed - A user can log in to more than one device at a time. 2. Multiple Logins Not Allowed - The second and subsequent login attempts after a user successfully logs in once will fail. 3. 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. <p>For EMCC, multiple logins are always allowed.</p>
Alphanumeric User ID	<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>

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>
Clear Call Logs on Intra-cluster EM	<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>For Extension Mobility Cross-Cluster (EMCC), the call log is always cleared when the user logs in or out of a phone.</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>

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 a 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>

Setting	Description
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>
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>
EMCC Allow Proxy	<p>Tip In the Service Parameter Configuration window, click Advanced to display this service parameter.</p> <p>This field applies only to Extension Mobility Cross Cluster configuration.</p> <p>This parameter determines whether the use of web proxy for Extension Mobility Cross Cluster (EMCC) login/logout is allowed. The service parameter, Validate IP Address, must be set to True for this parameter to take effect. Valid values specify True (allow EMCC login or logout using a web proxy that is identified in the service parameter Trusted List of IPs) or False (do not allow EMCC login or logout operation using a web proxy).</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>

Cisco Extension Mobility Service Parameters

The following table provides a comparison of the Cisco Extension Mobility service parameters and how each service parameter behaves when used to configure the Extension Mobility feature or the Extension Mobility Cross Cluster feature.

Table 2: Comparison of Cisco Extension Mobility Service Parameter Behavior

Service Parameter Name	Behavior in Extension Mobility Feature	Behavior in Extension Mobility Cross Cluster Feature
Enforce Intra-cluster Maximum Login Time	Supported (True or False)	Does not apply. EMCC always enforces auto logout based on the inter-cluster maximum login time.
Intra-cluster Maximum Login Time	Value gets used if maximum login time is enforced.	Does not apply.
Inter-cluster Maximum Login Time	Does not apply.	This service parameter shares the same range for Intra-cluster Maximum Login Time, except that it can be set to zero.
Maximum Concurrent Requests	Supported. This service parameter combines both EM and EMCC login requests.	Supported. This service parameter combines both EM and EMCC login requests. This service parameter applies only to the home cluster.
Intra-cluster Multiple Login Behavior	Supported. Values specify the following: <ul style="list-style-type: none"> • Multiple Logins Allowed • Multiple Logins Not Allowed • Auto Logout 	Always allows multiple EMCC logins (Multiple Login Allowed).
Alphanumeric User ID	Supported	Supported. Value of visiting cluster gets used.
Remember the Last User Logged In	Supported	Supported
Clear Call Logs on Intra-Cluster EM	Supported. Values specify the following: <ul style="list-style-type: none"> • True = Clear the call history. • False = Do not clear call history after login and logout. 	Always get cleared once the phone runs the full cycle reset after login.
Validate IP Address	Supported. Validates the IP address of the device during login and logout.	Supported. Validates the IP address in the visiting cluster (vEMApp) during login. Validates the IP address in the home cluster (hEMApp) during logout.

Service Parameter Name	Behavior in Extension Mobility Feature	Behavior in Extension Mobility Cross Cluster Feature
Trusted List of IPs	Supported	Supported. Works in conjunction with Validate IP Address parameter. The parameter of home cluster or visiting cluster gets applied, depending on login or logout.
Allow Proxy	Supported	Does not apply.
EMCC Allow Proxy	Does not apply.	Supported
Extension Mobility Cache Size	Supported. Values specify the following: <ul style="list-style-type: none"> • Multiple Logins Allowed • Multiple Logins Not Allowed • Auto Logout 	Supported. Uses the Max Cache Size value in the home cluster.

Create a Default Device Profile

Configure a 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, on page 4](#).

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 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. See the Cisco Unified Communications Operating System Administration Guide.
- 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, see the [Barge and Privacy](#).
- Step 11** From the Single Button Barge 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, see the [Barge and Privacy](#).
- 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, see [Barge and Privacy](#) 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, see the [Call Display Restrictions](#) chapter.
- Step 14** To configure Multilevel Precedence and Preemption (MLPP) information, perform the following tasks:
- Note** See the [Multilevel Precedence and Preemption](#) 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 15 Click **Save**.

Create 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.

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. See the [BLF Presence](#) chapter for more details.

Before you begin

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

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 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. See the Cisco Unified Communications Operating System Administration Guide.
- 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, see the [Barge and Privacy](#).
- Step 8** To enable the Call Display Restrictions feature, check the Ignore Presentation Indicators (internal calls only) check box.
- Note** To enable the Call Display Restrictions feature, check the Ignore Presentation Indicators (internal calls only) check box on the Device Profile Configuration window and also on the Phone Configuration window (see the [Subscribe Cisco Unified IP Phones to Cisco Extension Mobility, on page 29](#)).
- 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.
- Skip this step for Cisco IP Phone models 8961, 9951, and 9971. The expansion module field does not display for these phone models. The lines from the Phone Button Template are applied to the physical device no matter which expansion modules these phones use.

Tip 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:

See the [Multilevel Precedence and Preemption](#) 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**.

See [Multilevel Precedence and Preemption](#) in the Cisco Unified Communications Manager Administration Guide for field descriptions.

Step 14 The following prompt displays: Changes to Line or Directory Number settings require restart.

Click **Reset** and follow the prompts.

Step 15 To subscribe the Extension Mobility service to this device profile, 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 for window displays.

- Step 16** From the Select a Service drop-down list box, choose the Extension Mobility service.
- Step 17** Click **Next**.
- Step 18** Click **Subscribe**.
- The new service displays under Subscribed Services.
- Step 19** Click **Save**.
- Step 20** To unsubscribe a service, click **Unsubscribe and Save**.
- See the [Multilevel Precedence and Preemption](#) chapter in the Cisco Unified Communications Manager Administration Guide for more details of configuring a device profile.
-

Associate 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, see the [Multilevel Precedence and Preemption](#) section 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. See 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 [Multilevel Precedence and Preemption](#) 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. See the Cisco Unified Communications Manager Administration Guide.
-

Subscribe Cisco Unified IP Phones to Cisco Extension Mobility

Before you begin

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, see topics related to Cisco Unified IP Phone configuration in the *Cisco Unified Communications Manager Administration Guide*.

For a review of device profiles, see the [Device Profiles, on page 4](#).

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 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, see topics related to configuring Speed-Dial buttons or Abbreviated Dialing 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 (internal calls only) check box on the Phone Configuration window and also on the Device Profile Configuration window (see the [Create the Device Profile for a User, on page 26](#)). For information about this feature, see 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 [Create the Device Profile for a User, on page 26](#) and to 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 for window displays.

Step 10 From the Select a Service drop-down list box, choose the Extension Mobility service.

Step 11 Click **Next**.

Step 12 Click **Subscribe**.

The new service displays under Subscribed Services.

Step 13 Click **Save**.

Step 14 To unsubscribe a service, click **Unsubscribe** and **Save**.

Note To subscribe/unsubscribe services to a device profile, see the [Create the Device Profile for a User, on page 26](#)

You have now configured Cisco Extension Mobility.

Configure the Change Credential IP Phone Service

Configure the Change Credential IP Phone service and associate this phone service with a user, a user device profile, or a Cisco Unified IP Phone, so that a Cisco Extension Mobility user can change the user PIN on the Cisco Unified IP Phone to which they have logged in.

The Change Credential IP phone service allows an end user to change the user PIN on the Cisco Unified IP Phone with both Cisco Extension Mobility and Cisco Extension Mobility Cross Cluster.

Before you begin

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, see the Cisco Unified Communications Manager Administration Guide.

For a review of device profiles, see the [Device Profiles, on page 4](#).

To add the Change Credential IP Phone service, perform the following procedure.

Procedure

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

Step 2 Click **Add New**.

The IP Phone Services Configuration window displays.

Step 3 In the Service Name field, enter Change Credential.

Note For descriptions of all fields, see the [Device Profiles, on page 4](#) section in the Cisco Unified Communications Manager Administration Guide.

Step 4 In the Service URL field, enter the following value, where server designates the server where the Change Credential IP phone service runs:

`http://server:8080/changecredential/ChangeCredentialServlet?device=#DEVICENAME#`

Step 5 In the Secure-Service URL field, enter the following value, where server designates the server where the Change Credential IP phone service runs:

<https://server:8443/changecredential/ChangeCredentialServlet?device=#DEVICENAME#>

- Step 6** Configure the remaining fields in the IP Phone Services Configuration window, and click **Save**.
You must now subscribe the Change Credential IP phone service to both the IP phone target device and to the user device profile that you created in the [Create the Device Profile for a User, on page 26](#).
- Step 7** To subscribe the Cisco Unified IP Phone to the Change Credential IP phone service, display the Phone Configuration window for the phone (**Device > Phone**).
- Step 8** In the Phone Configuration window, 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 for window displays.
- Step 9** From the Select a Service drop-down list box, choose the Change Credential IP phone service.
- Step 10** Click **Next**.
- Step 11** Click **Subscribe**.
- Step 12** The Change Credential IP phone service displays under Subscribed Services.
- Step 13** Click **Save**.
- Note** To subscribe/unsubscribe services to a user device profile, see the [Create the Device Profile for a User, on page 26](#).
- Note** To subscribe/unsubscribe services to an end user, see the Cisco Unified Communications Manager Administration Guide.

Provide 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.
- User password, UserID, and PIN
- URL for the Cisco Unified Communications Self Care Portal 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 phone user guide also contains information on using Cisco Unified Communications Self Care Portal window.

- Description of the feature login and logout behavior that you defined in the [Set the Service Parameters, on page 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.
