



Self Provisioning

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Self-Provisioning Overview

The Cisco Unified Communications Manager Self-Provisioning feature allows an end user or administrator to add an unprovisioned phone to a Cisco Unified Communications Manager system with minimal administrative effort. A phone can be added by plugging it into the network and following a few prompts to identify the user.

The following process is used to self-provision a phone:

- 1 The user or admin connects the phone to the network.
- 2 The phone auto-registers.
- 3 The user or admin dials the IVR application and satisfies the prompts.
- 4 The IVR application deletes the auto-registered phone and adds it back using templates associated with the user via their User Profile.

There are two requirements related to self-provisioning:

- 1 Before a phone can be self-provisioned, the user must exist in Cisco Unified Communications Manager along with their primary extension, self service ID, and user profile.
- 2 After the phone is self-provisioned, in order to do additional subscriber management for the user in Cisco Unified Communications Domain Manager, the user, line, and phone need to be at the site level in the Cisco Unified Communications Domain Manager hierarchy.

Bottom-Up User Management

A **bottom-up** approach to user management means users are configured on Cisco Unified Communications Manager and synced into Cisco Unified Communications Domain Manager. Two possible methods for bottom-up user management are:

- Sync LDAP directory into Cisco Unified Communications Manager. Do not configure the LDAP directory sync in Cisco Unified Communications Manager to use a line mask or DN pool to create the user's primary extension. Instead, the user's primary extension and self-service ID are generated in Cisco Unified Communications Domain Manager, using a line mask, universal line template, and self-provisioning user profile at the site level.



Note During LDAP sync to Cisco Unified Communications Manager, the user is assigned a User Profile via the Feature Group Template associated with the LDAP directory. In order for the line mask configured at the site on Cisco Unified Communications Domain Manager to get applied, the User Profile assigned previously must be empty or it must be named the 'Standard (Factory Default) User Profile'.

- Use Cisco Unified Communications Manager Quick User/Phone Add to create a user and the user's primary extension.

See Cisco Unified Communications Manager documentation for more information.

Top-Down User Management

A **top-down** approach to user management means users and lines are configured on Cisco Unified Communications Domain Manager and pushed into Cisco Unified Communications Manager. Users may be added via LDAP sync, the GUI, or bulk loading. When users are pushed to Cisco Unified Communications Manager the user's primary extension is created, and when a phone is self-provisioned for the user, the phone is automatically moved to the user's Site.

Use either of the following methods to configure the user in Cisco Unified Communications Domain Manager:

- Generate the user's primary line and self-service ID using a line mask, universal line template, and a user profile at the site level.
- Set the self-service ID per user using Quick Add Subscriber.

**Note**

Using a combination of the methods above is possible but is not recommended. For example, you can enable the line mask at the site and use Quick Add Subscriber to set the primary line for some users while not setting it for others. When the line mask is applied, it first checks to see if a primary extension is already assigned to the user (perhaps via Quick Add Subscriber). If a primary extension is already assigned, the line mask is not applied.

Cisco Unified Communications Manager Configuration for Self-Provisioning

To use self-provisioning, regardless of whether top-down or bottom-up user management is used, the following one-time configuration tasks must be done on Cisco Unified Communications Manager:

- Ensure that the Cisco CallManager, Cisco CTIManager, and Self-Provisioning IVR services are activated
- Configure Auto Registration
- Configure an Application User and credentials so the system can connect to the IVR self-provisioning service
- Configure a CTI Route Point (this provides the number that users dial to connect to the IVR)
- Configure Self-Provisioning with the Application User and CTI Route Point

Site Configuration for Self-Provisioning

Regardless of whether top-down or bottom-up user management is used, ensure that the following items have been configured in Cisco Unified Communications Domain Manager:

- Site Dial Plan: **Dial Plan Management > Site > Dial Plan**
- Site Defaults: **Site Management > Defaults**
- Directory Number Inventory: **Dial Plan Management > Customer Management > Add Directory Number Inventory**

Generate User's Primary Line

If top-down user management is used, when the users are pushed to Cisco Unified Communications Manager, the system automatically creates the user's primary line, associates the line as the primary extension, sets the self-service ID, and sets the user profile.

If bottom-up user management is used, the user's primary line is created (if it doesn't already exist) when the user is moved to a site, or updated once at a site.

The line is created by applying the Line Mask to a user attribute (typically the user's telephone number) and using the Universal Line Template (ULT) to determine the route partition name and other line attributes. The

ULT is specified in the Self-Provisioning User Profile which is specified in the Site's Default User Profile. For this approach the admin needs to configure the following at the site level:

Procedure

- Step 1** Configure Universal Device Template(s). See [Add Self-Provisioning Universal Device Template](#), on page 4.
 - Step 2** Configure Universal Line Template(s). See [Add Self-Provisioning Universal Line Template](#), on page 6.
 - Step 3** Configure Self-Provisioning User Profile(s). See [Add Self-Provisioning User Profile](#), on page 7.
 - Step 4** Configure a Site Default User Profile. See [Set Default User Profile for Site](#), on page 7.
 - Step 5** Configure Line Mask. See [Add Self-Provisioning Line Mask](#), on page 8.
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Specify the Primary Line per Subscriber

In the top-down method that uses Quick Add Subscriber, the primary line pattern is specified by the admin. This creates the user's primary line, associates it as the primary extension, sets the self-service ID, and sets the user profile. The line attributes come from Quick Add Group configuration. Therefore, the Universal Line Template does not need to be configured.

Procedure

- Step 1** Configure Universal Device Template(s). See [Add Self-Provisioning Universal Device Template](#), on page 4.
 - Step 2** Configure Self-Provisioning User Profile(s). See [Add Self-Provisioning User Profile](#), on page 7.
 - Step 3** Configure a Site Default User Profile. See [Set Default User Profile for Site](#), on page 7.
 - Step 4** Configure primary line per user.
For Quick Add Subscriber, add at least one line, and check the Self-Service ID checkbox.
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Add Self-Provisioning Universal Device Template

When the administrator or user self provisions a phone, Cisco Unified Communications Manager deletes the auto registered phone and re-adds the phone back into the database. The various phone settings for the user's phone are determined by the Universal Device Template (UDT) associated with the user's User Profile.

Procedure

- Step 1** Log in as provider, reseller, or customer admin.
- Step 2** Set the hierarchy path to the site node where you want to configure self-provisioning.

Step 3 Select **User Management > Self-Provisioning > Universal Device Template**.

Step 4 Click **Add**.

Step 5 Enter the following required Universal Device Template information.

Field	Description
Name	The name of the universal device template
Location	Use locations to implement call admission control (CAC) in a centralized call-processing system. CAC enables you to regulate audio quality and video availability by limiting the amount of bandwidth that is available for audio and video calls over links between locations. The location specifies the total bandwidth that is available for calls to and from this location.
Common Phone Profile	Select a common phone profile from the drop down list.
Phone Personalization	The Phone Personalization setting allows you to enable this UDT so that it works with Phone Designer. Phone Designer is a Cisco Unified Communications widget that allows a user to customize the wallpaper and ring tones on a device.
Busy Trigger	This setting, which works in conjunction with Maximum Number of Calls and Call Forward Busy, determines the maximum number of calls to be presented at the line. If maximum number of calls is set for 50 and the busy trigger is set to 40, incoming call 41 gets rejected with a busy cause (and will get forwarded if Call Forward Busy is set). If this line is shared, all the lines must be busy before incoming calls get rejected.
Max Number Of Calls	You can configure up to 200 calls for a line on a device, with the limiting factor being the total number of calls that are configured on the device. As you configure the number of calls for one line, the calls that are available for another line decrease.
MultiLevel Precedence and Preemption	This setting specifies whether a device that can preempt calls in progress will use the capability when it places an MLPP precedence call.
Do Not Disturb Option	When you enable DND on the phone, this parameter allows you to specify how the DND features handle incoming calls.
Blf Presence Group	Enter the presence group applicable for busy lamp field buttons.
Device Mobility Mode	From the drop-down list box, turn the device mobility feature on or off for this device or choose Default to use the default device mobility mode. Default setting uses the value for the Device Mobility Mode service parameter for the device.

These fields may be pre-populated depending on customer, site, and dial plan configuration:

- Name
- Location
- Common Phone Profile

- BLF Presence Group

Step 6 Enter the following optional, but highly recommended information:

Field	Description
Device Pool	Enter a site-specific device pool.
Owner User ID	The userid of the user associated with the phone. The recommended is Current Device Owner's User ID.

These fields may be pre-populated depending on customer, site, and dial plan configuration:

- Device Pool
- Owner User Id

Step 7 Enter other optional settings, if applicable.

Step 8 Click **Save**.

Add Self-Provisioning Universal Line Template

In terms of self-provisioning a phone, the Universal Line Template (ULT) is used before self-provisioning actually takes place. ULTs are used to create directory numbers on Cisco Unified Communications Manager. A directory number is identified by a pattern (the number portion) and a route partition. A directory number also has a variety of settings that can be configured for the line. When a directory number is created using a ULT, the ULT determines the route partition along with the line settings.

Procedure

Step 1 Log in as provider, reseller, or customer admin.

Step 2 Set the hierarchy path to the site node where you want to configure self-provisioning.

Step 3 Select **User Management > Self-Provisioning > Universal Line Template**.

Step 4 Click **Add**.

Step 5 Enter the following required Universal Line Template information.

Field	Description
Name	The name of the universal line template
Location	Use locations to implement call admission control (CAC) in a centralized call-processing system. CAC enables you to regulate audio quality and video availability by limiting the amount of bandwidth that is available for audio and video calls over links between locations. The location specifies the total bandwidth that is available for calls to and from this location.
Partition	Enter the route partition used to create lines at the site.

Field	Description
Blf Presence Group	Enter the presence group applicable for busy lamp field buttons.

Step 6 Enter other optional settings, if applicable.

Step 7 Click **Save**.

Add Self-Provisioning User Profile

Procedure

Step 1 Log in as provider, reseller, or customer admin.

Step 2 Set the hierarchy path to the site node where you want to configure self-provisioning.

Step 3 Select **User Management > Self-Provisioning > User Profile**.

Step 4 Click **Add**.

Step 5 Enter user profile information.

Field	Description
Name	Enter the name of the user profile. This field is mandatory.
Universal Line Template	Enter a site-specific ULT. This field is highly recommended.

Step 6 Click **Save**.

Step 7 Enter other optional settings, if applicable.

What to Do Next

[Set Default User Profile for Site, on page 7](#)

Set Default User Profile for Site

Set a default User Profile for the site, which will be used when no user profile is specified when adding a subscriber. To set the default User Profile:

Procedure

- Step 1** Select **Site Management > Defaults**.
 - Step 2** Click the Defaults to edit.
 - Step 3** Enter the default User Profile for the site in the **Default User Profile (for User Self Provisioning)** field.
 - Step 4** Click **Save**.
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Add Self-Provisioning Line Mask

Procedure

- Step 1** Log in as provider, reseller, or customer admin.
- Step 2** Set the hierarchy path to the site node where you want to configure self-provisioning.
- Step 3** Select **User Management > Self-Provisioning > Line Mask**.
- Step 4** Click **Add**.
- Step 5** Provide the following information:

Field	Description
Description	A description of the Line Mask.
User Attribute	Select the user attribute used to generate the user's primary extension. The default is telephoneNumber. This field is mandatory.
Mask	Provide a mask which gets applied to the user attribute. The result is used as the user's primary extension. For example, assume user attribute is telephoneNumber and the mask is 4XXXX. Special characters and blanks are stripped from the user attribute before applying the mask. If the mask is applied to '(919) 867-5309', the user's primary extension would be set to 45309. This field is mandatory.

- Step 6** Click **Save**.
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