



## CHAPTER 4

# Managing Countries and Provider Resources

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This chapter describes how to use USM to define and configure customers and other objects and resources used within the Hosted Unified Communications Services platform. This chapter includes the following sections:

- [Adding Countries, page 4-1](#)
- [Creating an Inventory of E.164 Numbers, IP Addresses, and Phones, page 4-2](#)
- [Adding Resellers, page 4-5](#)
- [Managing Customers, page 4-5](#)
- [Adding Divisions, page 4-10](#)
- [Adding Locations, page 4-11](#)
- [Moving Inventory of E.164 Numbers and Phones to Locations, page 4-13](#)
- [Administering Locations, page 4-14](#)

## Adding Countries



### Note

Ensure that all Cisco PGWs and Unified CM clusters are defined at this stage, because it is not possible to add additional Cisco PGWs and Unified CM clusters after a country is added.

This section describes the steps required to add and configure countries. It includes the following topics:

- [Adding a Country, page 4-1](#)
- [Editing the Incoming Cisco PGW Trunk Group, page 4-2](#)

## Adding a Country

To add a country, perform the following steps:

### Procedure

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- Step 1** Choose **Provider Administration > Countries**.
- Step 2** Click **Add**.

**Step 3** Choose the country you want to add; for example, **United Kingdom**.

**Step 4** Click **Add**.

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This procedure updates USM, the Cisco PGW, and Unified CM. Verify on the Cisco PGW and on all Unified CM clusters that all the components have been created and configured.



**Note**

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Verify on the PGW and on all Unified CM clusters that all the components have been created and configured.

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## Editing the Incoming Cisco PGW Trunk Group

As part of Hosted UCS 7.1(a) static configuration, for the interface between the Cisco PGW and PSTN, a per-country route list to PSTN was created: `rtlist2pstn<Country_code>`. For example, `rtlist2pstn44` for the United Kingdom.

This route list is associated to one or more routes, which in turn are associated with a number of trunk groups. For these trunk groups, the `custgrpid` property can now be updated with the correct country specific `P#PADDEDDCC#` dial plan:

```
prov-ed:trnkgrpprop:name="<rttrnkgrp_name>",custgrpid="P#PADDEDDCC#", for example:
prov-ed:trnkgrpprop:name="2001",custgrpid="P044",
```

Following is a sample mml session for a redundant Cisco PGW pair:

```
prov-sta::srcver="active",dstver="P044dp"
prov-ed:trnkgrpprop:name="2001",custgrpid="P044"
prov-dply
```

## Creating an Inventory of E.164 Numbers, IP Addresses, and Phones

This section describes the steps required to create an inventory of E.164 numbers, IP addresses, and phones at the provider level. This inventory is later assigned to resellers, customers, customer divisions, and finally customer locations.

This section includes the following topics:

- [Creating an E.164 Inventory, page 4-2](#)
- [Creating an IP Address Inventory, page 4-3](#)
- [Creating a Phone Inventory, page 4-4](#)

## Creating an E.164 Inventory

To create an inventory of E.164 numbers, you must first define area codes and then add a range of numbers for the specific area code. Together, they give a range of E.164 numbers that are later assigned to customer locations.

## Adding Area Codes

To add an area code, perform the following steps:

### Procedure

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- Step 1** Choose **Resources > E.164 Inventory**.
  - Step 2** Choose a country to which you want to add an area code and click **Next**.
  - Step 3** Click **Area Code Mgt**.
  - Step 4** Click **Add**.
  - Step 5** From the Enter Area Code menu, enter National Area Code—*<areacode>*; for example, **1402**.
  - Step 6** Click **Add**.
- 

Repeat this procedure for all area codes.

## Adding Number Ranges

To add a number range, perform the following steps:

### Procedure

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- Step 1** Choose **Resources > E164 Inventory**.
  - Step 2** Choose a country to which you want to add a number range and click **Next**.
  - Step 3** Enter a National Area Code—*<areacode>*; for example, **1402**, and click **Next**.
  - Step 4** Click **Add Number Range**.
  - Step 5** From the Details menu, enter the following:
    - Start of number range—*<startofnumberrange>*; for example, **111000**
    - End of number range—*<endofnumberrange>*; for example, **111019**
  - Step 6** Click **Add**.
- 

Repeat this procedure for all required number ranges and for all area codes.

## Creating an IP Address Inventory

To create an inventory of IP addresses, you define an IP subnet that is associated with a DHCP server, IP edge device, DNS server, and so on. The IP subnet is later assigned to customer locations.

To add an IP subnet, perform the following steps:

### Procedure

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- Step 1** Choose **Resources > IP Address Inventory**.

**Step 2** Click **Add**.

**Step 3** From the Details menu, enter the following:

- IP Subnet—*<ipsubnet>*; for example, **10.181.2.0**
- Subnet Mask—*<subnetmask>*; for example, **/26**
- DHCP server controlling this subnet—*<dhcpserver>*; for example, **BVSM-ENT2**
- IP edge device to which this subnet is connected—*<ipedge>*; for example, **e2clu1cus1loc1IPEdge**
- Origin IP of DHCP messages encapsulated by router—*<defaultip>*; for example, **10.181.2.1**
- DHCP helper IP address—*<bvsmvirtualIP>*; for example, **10.100.92.21**
- Backup DHCP helper IP address—*<bvsmvirtualIP>*; for example, **10.100.92.21**
- Domain Name—*<domainname>*; for example, **ipcbuemea.cisco.com**
- Primary DNS server IP—*<primaryDNS>*; for example, **10.100.201.10**
- Fallback DNS server IP—*<fallbackDNS>*; for example, **10.100.202.10**
- IP address for default route of phone—*<defaultrouteIP>*; for example, **10.181.2.1**

**Step 4** Click **Add**.

---

Repeat this procedure for all IP subnets.

## Creating a Phone Inventory

Inventory of IP phones is first created at the provider level. The IP phones can later be assigned to resellers, customers, customer divisions, or customer locations.

To add an IP phone, perform the following steps:

### Procedure

---

**Step 1** Choose **Resources > Phone Inventory**.

**Step 2** Click **Add**.

**Step 3** From the Details menu, enter the following:

- Enter the MAC address of the phone—*<macaddress>*; for example, **0018192945EA**
- From the drop-down menu, choose the phone type; for example, **Cisco 7961 SIP**
- Button Template Name—Use the default template for phone type



**Note** By default, a phone type is associated to a default phone button template, which is defined during the initial basic setup.

---

**Step 4** Click **Add Phone**.

---

Repeat this procedure for all phones.

# Adding Resellers

Resources defined at the provider level (line types, phone types, and service types) can be assigned to the reseller at this stage.

To create a reseller, perform the following steps:

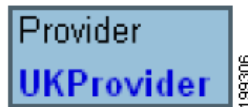
## Procedure

**Step 1** Choose **General Administration > Resellers**.

**Step 2** Click **Add**.

Ensure that you are adding a reseller for the correct provider. The name of the provider is shown on the screen, as shown in [Figure 4-1](#):

**Figure 4-1** Adding Resellers—Provider Level (UKProvider)



**Step 3** From the Details menu, add the following:

- Name—*<ResellerName>*; for example, **UKReseller1**
- Country—*<Country>*; for example, **UK**
- Post/Zip Code—*<Post/Zip Code>*
- Contact Name—*<ContactName>*
- Contact Telephone Number—*<ContactTelephoneNumber>*

**Step 4** From the Line Types menu, add the required number of lines for each line type; for example, **2000**.

**Step 5** From the Phone Types menu, add the required number of phones for each phone type; for example, **2000**.

**Step 6** From the Service Types menu, add the required number of subscribers for each service; for example, **2000**.

**Step 7** From the GUI Branding menu, define the type of branding for the User Interface.

To define default branding, select **Default GUI branding** and click **Default GUI branding**.

**Step 8** Click **Add**.

Repeat this procedure for all required resellers.

# Managing Customers

This section describes the required steps to define customers, customer resources (for example media services), and feature groups. Resources defined at the reseller level (line types, phone types, and service types) can be assigned to the customer at this stage.

The administrator will define the dialing prefix used for calls between customer locations if

this option was enabled when the dial plan was created.

Feature groups define the class of service to be allocated to a user or a phone. Feature groups are created at the customer level and are common across all locations within that customer.

This section includes the following topics:

- [Adding Customers, page 4-6](#)
- [Adding Media Services, page 4-7](#)
- [Adding Feature Groups, page 4-8](#)
- [Configuring USM User Roaming Preferences](#)

## Adding Customers

To create a customer, perform the following steps:

### Procedure

**Step 1** Choose **General Administration > Customers**.

**Step 2** Click **Add**.

Ensure that you are adding a customers for the correct reseller. The name of the reseller is shown on the screen, as shown in [Figure 4-2](#).

**Figure 4-2** Adding Customers—Reseller Level (UKReseller1)

Provider	Reseller
UKProvider	UKReseller1

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**Step 3** From the Details menu, add the following:

- Name—*<CustomerName>*; for example, **UKCustomer1**
- Country—*<Country>*; for example, **UK**
- Post/Zip Code—*<Post/Zip Code>*
- Contact Name—*<ContactName>*
- Contact Telephone Number—*<ContactTelephoneNumber>*

**Step 4** From the Corporate Directory Details menu, add the IP Address—*<BVSMvirtualIP>*; for example, **10.100.92.21**.

**Step 5** From the Enter Number of Lines Required menu, add the required number of lines for each line type; for example, **500**.

**Step 6** From the Enter Number of Phones Required menu, add the required number of phones for each phone type; for example, **500**.

**Step 7** From the Enter Subscriber Numbers for each Service menu, add the required number of subscribers for each service; for example, **500**.

**Step 8** From the Dial Plan Details menu, do the following:

- Add the Default Hardware group—*<cushwgrp>*; for example, **e2pgwcucmhwrpclu1**.

- Add the Inter-Site Prefix—*<intersiteprefix>*; for example, **8**.
- Click **Automatically Generate Site codes**.

**Step 9** From the Please Select Required Themes menu, do the following:

- Add the Default branding of User Interface—**Default GUI branding**.
- Click **Default GUI branding**.

**Step 10** Click **Add**.

---

This procedure updates both USM and Cisco PGW.

To verify the values of the of the variables: #CUSTDIALPLAN#, #EGRESSCUSTDIALPLAN#, #EGRESSCUSTDIALPLAN2# , #COMMONLEGACYPBX#, #INGRESSLEGACYPBX#, #EGRESSLEGACYPBX#, #VOICEMAILDIALPLAN#, perform the following steps:

#### Procedure

---

**Step 1** Choose **General Administration > Customers**.

**Step 2** Choose a customer.

**Step 3** Click **AdvancedMgt**.

**Step 4** Click **View PGW Config**.

**Step 5** Choose the relevant Cisco PGW; for example, **PGW-ENT2**.

---



#### Note

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Verify on the Cisco PGW that the dial plans have been created and configured.

---

Repeat this procedure for all required customers.

## Adding Media Services

USM does not assign media resource group lists directly to a location. USM uses a resource called media services, which can be assigned to a location. To use a media resource group list on a location, a media service must be added that contains the media resource group list.

The media service can contain three components: a conference server, an MOH server, and/or a media resource group list.



#### Note

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The conference server and MOH server fields in the media service are used for non-Unified CM resources. When adding the media service, choose only the media resource group list.

---

To add a media service, perform the following steps:

**Procedure**

**Step 1** Choose **Resources > Media Services**.

**Step 2** Click **Add**.

Ensure that you are adding media services for the correct customer. The name of the customer is shown on the screen, as shown in [Figure 4-3](#).

**Figure 4-3 Adding Media Services—Customer Level (UKCustomer1)**

Provider	Reseller	Customer
UKProvider	UKReseller1	UKCustomer1

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**Step 3** From the Details menu, enter the following:

- Name—`<uniquename>`; for example, **e2msClu1Cus1**
- Description—`<mediaservicedesc>`; for example, **City 2 Media Service (MRGL) Cluster 1 Customer 1**

**Step 4** From the Select Media Groups menu, add the Name—`<mrglname>`; for example, **e3mrglClu1**.

**Step 5** Click **Add**.

Repeat this procedure for all required Unified CM clusters, and for all required customers.

## Adding Feature Groups

Feature groups define the class of service to be allocated to a user or a phone. Feature groups are created at the customer level and are common across all locations within that customer.

To add a feature group, perform the following steps:

**Procedure**

**Step 1** Choose **General Administration > Feature Groups**.

**Step 2** Click **Add**.

Ensure that you are adding a feature group for the correct customer. The name of the customer is shown on the screen, as shown in [Figure 4-4](#).

**Figure 4-4 Adding Feature Groups—Customer Level (UKCustomer1)**

Provider	Reseller	Customer
UKProvider	UKReseller1	UKCustomer1

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**Step 3** From the Details menu, enter the following:

- Name—`<uniquename>`; for example, **COS1International24Hour**
- Description—`<featuregroupdesc>`; for example, **COS1International24Hour**



- Outbound Calls Limitations—*<outbound>*; for example, **COS1International24Hour**
- Call Forward Limitations—*<callforwardlim>*; for example, **COS1CF**
- VoiceMail Profile—*<voicemailprofile>*; for example, **Basic VoiceMail profile**
- Inbound Call options—*<inbound>*; for example, **Allow one DDI line**
- Number of Ext or Lines—*<ExtorLinesNumber>*; for example, **One Number DDI or Extension**
- Tick all fields that are relevant for the Unified CM release on which the Feature Group is to be applied.

**Step 4** Click **Submit**.

---

Repeat this procedure for all required features, and for all customers.

## Configuring USM User Roaming Preferences

If the USM UserRoaming preference setting has been enabled at the provider level, the following two additional preferences can be configured at the Customer level:

- **AllowCrossClusterLogin**—for a user with Extension Mobility, this setting enables users to log into phones away from their home Unified CM Cluster, by using the Cross Cluster Forwarding feature.
- **ForceOldRoamingLogoff**—for a user with Extension Mobility, this setting forces the user to be logged out from the old phone if he logs in to another phone.

To configure these settings, perform the following steps:

- 
- Step 1** Go to **General Administration > Customers**. Select a Customer for which you want to activate the feature
- Step 2** Click **Preferences**.
- Step 3** Click **AllowCrossClusterLogin**.
- Step 4** Check the available checkbox to enable the setting.
- Step 5** Click **Modify**.
- Step 6** Click **Return to Preferences Management**.
- Step 7** Click **ForceOldRoamingLogoff**
- Step 8** Tick the available box to enable the setting.
- Step 9** Click **Modify**.
- 

Repeat this procedure for all required customers.



**Tip**

Ensure that **User Mobility** and **Allow User login to Phone** are selected in the feature group to be used by the user.

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# Adding Divisions

This section describes the steps required to create a customer division. Resources defined at the customer level (line types, phone types, and service types) can be assigned to the customer division at this stage.

To create a customer division, perform the following steps:

## Procedure

**Step 1** Choose **General Administration > Divisions**.

**Step 2** Click **Add**.

Ensure that you are adding a division for the correct customer. The name of the customer is shown on the screen, as shown in [Figure 4-5](#).

**Figure 4-5 Adding Divisions—Customer Level (UKCustomer1)**

Provider	Reseller	Customer
UKProvider	UKReseller1	UKCustomer1

199309

**Step 3** From the Details menu, add the following:

- Name—*<DivisionName>*; for example, **UKDivision1**
- Address—*<Address>*
- City—*<City>*
- Country—*<Country>*; for example, **UK**
- Post/Zip Code—*<Post/ZipCode>*
- Contact Name—*<ContactName>*
- Contact Telephone Number—*<ContactTelephoneNumber>*

**Step 4** From the Line Types menu, add the required number of lines for each line type; for example, **500**.

**Step 5** From the Phone Types menu, add the required number of phones for each phone type; for example, **500**.

**Step 6** From the Service Types menu, add the required number of subscribers for each service; for example, **500**.

**Step 7** From the Please Select Required Themes menu, enter the default branding of User Interface—**Default GUI branding**.

**Step 8** Click **Default GUI branding**.

**Step 9** Click **Add**.

Repeat this procedure for all required divisions.

# Adding Locations

This section describes the required steps to define customer locations. Resources defined at the customer division level (line types, phone types, and service types) can be assigned to the customer locations at this stage. You define which Hosted UCS network components are associated with the location by selecting an appropriate hardware group. The following are also selected:

- Location site code
- Length of the phone extensions (if this option was enabled when the dial plan was created)
- Dialing prefix used to make calls to the PSTN (if this option was enabled when the dial plan was created)
- Default area code
- IP subnet for the location



## Caution

If the location requires Enhanced Emergency Support (Cisco Emergency Responder (Cisco ER) is used to route Emergency Calls), ensure that the relevant Cisco ER Group is connected to the Unified CM cluster where the location will be provisioned.

To create a location, perform the following steps:

## Procedure

**Step 1** Choose **General Administration > Locations**.

**Step 2** Click **Add**.

Ensure that you are adding a location for the correct customer division. The name of the reseller is shown on the screen, as shown in [Figure 4-6](#).

**Figure 4-6** Adding Locations - USM administrator at the Division level - UKDivision1

Provider	Reseller	Customer	Division
<a href="#">UKProvider</a>	<a href="#">UKReseller1</a>	<a href="#">UKCustomer1</a>	<a href="#">UKDivision1</a>

1893110

**Step 3** From the Details menu, add the following:

- Location Name—`<LocationName>`; for example, **1402clu1cus1loc1**
- Address—`<Address>`
- City—`<City>`
- Country—`<Country>`; for example, **UK**
- TimeZone—`<Area/Location>`; for example, **Europe/London**
- Post/Zip Code—`<Post/Zip Code>`
- Contact Name—`<ContactName>`
- Hardware Group—`<lochwgrp>`; for example, **e2pgwcucmhwrpclu1**
- PBX Template—Default.



**Note** For Hosted UCS 7.1(a) the Default value should be used, so that different locations can be configured using different Unified CM models

- Enhanced Emergency Support—*<EnhEmergSupport>*; select this option if Cisco ER is used to route Emergency Calls



**Note** If you select Enhanced Emergency Support, the location gets provisioned with two translation patterns (911 and 9.911) which are used to detect emergency calls and route them to Cisco ER.

- Single Number Reach Support—select this option if SNR feature support is required for this location.

**Step 4** From the Dial Plan menu, add the following:

- Site Code—*<LocSiteCode>*; for example, **111**
- Dial this to get an outside line—*<PSTNacce> ssprefix*; for example, **9**
- Select extension number length—*<ExtLength>*; for example, **3**
- Default Area Code—*<DefAreaCode>*; for example, **1402**
- Local Dialing—You can select seven-digit local dialing, ten-digit local dialing, or no local dialing; for example, **7-digit**



**Note** Local Dialing is only available while adding Locations in the US.

**Step 5** From the Subnets menu, enter the IP subnet assigned to Location *<LocSubnet>*; for example, **10.181.2.0/26**.

**Step 6** From the Please Select Required Themes menu, do the following:

- Add the Default branding of User Interface—Default GUI branding.
- Click **Default GUI branding**.

**Step 7** Click **Next >>**.

**Step 8** From the Line Number menu, enter the required number of lines for each line type; for example, **20**.

**Step 9** From the Services menu, enter the required number of subscribers for each service; for example, **20**.

**Step 10** Click **Next >>**.

**Step 11** From the Phone Types menu, enter the required number of phones for each phone type; for example, **20**.

**Step 12** Click **Add**.

This procedure updates, USM, Cisco PGW, and Unified CM.

To verify the location-specific Unified CM configuration, perform the following steps:

#### Procedure

**Step 1** Choose **Location Administration > Telephony**.

**Step 2** Choose a location.

- Step 3** Click **Telephony**.
- Step 4** Click **Advanced Diagnostics**.
- Step 5** Choose the relevant Unified CM cluster; for example, **e2c1**.

**Note**

Verify on the Cisco PGW that the dial plans have been created and configured, and on the Unified CM cluster that the partitions, CSSs, route patterns, and translation patterns have been added.

Repeat this procedure for all required locations.

## Moving Inventory of E.164 Numbers and Phones to Locations

This section describes the steps required to move the inventory of E.164 numbers and phones created at the provider level to the customer locations.

**Note**

IP addresses (IP subnets) created at the provider level are automatically associated with locations when the locations are created.

Ensure that you are moving the inventory of E.164 numbers and phones to locations at the correct provider level. To get to the provider level, choose **Provider Administration > Providers** and choose a provider.

The name of the provider appears on the screen.

This section includes the following topics:

- [Moving E.164 Number Inventory, page 4-13](#)
- [Moving Phone Inventory, page 4-14](#)

## Moving E.164 Number Inventory

To move a range of E.164 numbers to a location, perform the following steps:

**Procedure**

- Step 1** Choose **Resources > E.164 Inventory**.
- Step 2** Choose a country to which you want to add a number range.
- Step 3** Click **Next**.
- Step 4** Choose a value for National Area Code—*<areacode>*; for example, **1631**.
- Step 5** Click **Next**.
- Step 6** Click **Move Number Range**.
- Step 7** From the Details menu, enter the following:
- Select Location—*<requiredlocation>*; for example,  
**UKReseller1: UKCustomer1: UKDivision1: 1402clu1cus1loc1**

- Start of number range—*<startofnumberrange>*; for example, **14021111000**
- End of number range—*<endofnumberrange>*; for example, **1102111019**

**Step 8** Click **Move**.

---

Repeat this procedure for all required locations.

## Moving Phone Inventory

To move a phone to a location, perform the following steps:

### Procedure

---

- Step 1** Choose **Resources > Phone Inventory**.
- Step 2** Choose the phone you want to move to a location by clicking the MAC address of the phone; for example, **001D452CDA84**.
- Step 3** Click **Next**.
- Step 4** Choose a Move Target—*<requiredlocation>*; for example, **UKReseller1: UKCustomer1: UKDivision1: 1402clu1cus1loc1**
- Step 5** Click **Next**.
- Step 6** Choose a value for Subnet—*<locationsubnet>*; for example, **10.181.2.0**.
- Step 7** Click **Move Phone**.
- 

This procedure updates both USM and Unified CM.



### Note

The phone and a line are added to the Unified CM, and the phone registers with the Unified CM, but the phone has very restrictive settings. In USM, the phone appears as unregistered.

---

Repeat this procedure for all required phones and for all required locations.

## Administering Locations

This section describes the steps required to do the following:

- Configure various location-specific parameters (for example, the PSTN published number, emergency published number, and so on)
- Assign a range of E.164 numbers to internal numbers
- Register and manage phones (for example, reset a phone, modify phone properties, and so on)
- Add and manage end users
- Add extension mobility

Ensure that you are administering the correct location. The name of the location appears on the screen.

This section includes the following topics:

- [Adding PSTN Published Numbers, page 4-15](#)
- [Adding Emergency Published Numbers, page 4-15](#)
- [Assigning Range of E.164 Numbers to Internal Numbers, page 4-16](#)
- [Registering Phones, page 4-17](#)
- [Adding an End User, page 4-18](#)
- [Adding User Extension Mobility, page 4-18](#)
- [Managing Phones, page 4-19](#)
- [Managing Users, page 4-19](#)

## Adding PSTN Published Numbers

If the PSTN published number is configured, when a call from an IP phone is destined to the PSTN (basic or call forwarded), the calling party number (CgPN) and the redirecting number are replaced with the PSTN published number if the phone does not have an associated E.164 number.

To add a PSTN published number, perform the following steps:

### Procedure

- 
- |               |                                                                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | Choose <b>General Administration &gt; Locations</b> .                                                                                                                            |
| <b>Step 2</b> | Choose a location to which you want to add the PSTN published number and click <b>Advanced Mgt.</b>                                                                              |
| <b>Step 3</b> | Click <b>PSTN Published Number</b> .                                                                                                                                             |
| <b>Step 4</b> | From the Details menu, enter the following: <ul style="list-style-type: none"><li>• Published PSTN Number—<i>&lt;PSTNPubNumber&gt;</i>; for example, <b>1402111009</b></li></ul> |
| <b>Step 5</b> | Click <b>Add</b> .                                                                                                                                                               |
- 

This procedure updates both USM and Cisco PGW.

Repeat this procedure for all required locations.

## Adding Emergency Published Numbers

The emergency published number is required to correctly route emergency calls. After the emergency published number is configured, when an emergency call is placed, the CgPN is replaced with the emergency published number.

To add an emergency published number, perform the following steps:

### Procedure

- 
- |               |                                                                            |
|---------------|----------------------------------------------------------------------------|
| <b>Step 1</b> | Choose <b>General Administration &gt; Locations</b> .                      |
| <b>Step 2</b> | Choose a location to which you want to add the emergency published number. |

- Step 3** Click **Advanced Mgt.**
- Step 4** Click **Emergency Number.**
- Step 5** For Emergency Number—*<EmPubNum>*, select an available E.164 number; for example, **1402111008**.
- Step 6** Click **Add.**
- 

This procedure updates both USM and Cisco PGW.

Repeat this procedure for all required locations.

## Assigning Range of E.164 Numbers to Internal Numbers

If the location requires PSTN calls to be routed via Local PSTN breakout, instead of proceeding with the provisioning step in this section ensure that

- Location preference `AssociateFNNinRanges` is enabled;
- Location is connected to the relevant Local Gateway Interface
- Range of E.164 numbers is assigned to a range of Internal numbers in ranges

To enable the flag `FwdRedirectingExternalNumonCallFwd` at provider level, do the following:

- 
- Step 1** Navigate to provider level for example, **UKProvider1**.
- Step 2** Click **Advanced Mgt.**
- Step 3** Click **Advanced Telephony Settings.**
- Step 4** Check the `FwdRedirectingExternalNumonCallFwd` check box.
- Step 5** Click **Apply.**
- 

For a range of internal extensions, the USM administrator can assign a range of E.164 numbers. These can then be assigned to an IP Phone, so that users can receive calls from the PSTN on those extensions

## Assigning Range of E.164 Numbers to Internal Numbers (in-ranges)

To assign a range of E.164 numbers to internal numbers using the in-ranges option, perform the following steps:

### Procedure

---

- Step 1** Choose **Location Administration > External Numbers.**
- Step 2** Click **Associate Range.**
- Step 3** From the Details menu, enter the following for the range:
- PSTN Number range—*<PSTNRange>*; for example, **1402111000-1402111009**
  - Extension Number range—*<ExtRange>*; for example, **000-019**



**Step 4** Click **Submit**.

---

**Note**

Starting from Hosted UCS 6.1(a) USM invokes the PGW TimesTen driver and uses the TimesTen Input in the AssociateFNN transaction (AssociateFNN script) of the PGW\_TimesTen model worksheet to create an import file and transfer it to the PGW, where it invokes the HUCSprovx10 PGW script and inserts the associations into the PGW TimesTen database.

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## Registering Phones

To register a phone, perform the following steps:

### Procedure

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**Step 1** Choose **Location Administration > Phone Registration**.

**Step 2** Choose the phone you want to register by clicking the MAC address of the phone; for example, **001D452CDA84**.

**Step 3** From the Phone Features menu, enter the following:

- Phone Location—*<PhoneLocation>*; for example, **Phone Switch 04 -Port1**
- Softkey Template—*<SoftkeyTemplate>*; for example, **Softkey\_Advanced**
- Button Template Name—*<PhoneButtonTemplate>*; for example, **Standard 7975 SCCP**
- First Expansion Module—*<None>*
- First Expansion Module—*<None>*
- Select Phone Feature Group—*<PhoneFeatureGroup>*, for example **COS1International24Hour**
- Click Next >>

**Step 4** From the Number Details menu, enter the following:

- Line Number—*<ExtOrE164>*; for example, **DDI 1402111001**
- Label—*<PhoneLabel>*; for example, **SCCP 001**
- Line Class of Service—Select **COS1International24Hour**

**Note**

If required and possible, you can add multiple lines.

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**Step 5** Click **Register**.

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This procedure updates both USM and Unified CM.

Repeat this procedure for all required phones, and for all required locations.

## Adding an End User

To add an end user, perform the following steps:

### Procedure

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- Step 1** Choose **Location Administration > Users**.
- Step 2** Click **Add**.
- Step 3** From the Details menu, enter the following:
- Username—*<Username>*; for example, **clu1cus1loc1user1**
-  **Note** From HUCS7.1a onwards, the end user name must not exceed 15 characters. This is the limitation on the USM on the length of end user name.
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- Password—*<Password>*; for example, **cisco123**
  - Role—*<Role>*; for example, **End User for clu1cus1loc1**
  - First Name—*<FirstName>*
  - Last Name—*<LastName>*
- Step 4** Click **Next >>**.
- Step 5** From the Details menu, enter the following:
- Phone PIN—*<PhonePIN>*, minimum 5 digits; for example, **12345**
  - Feature Group—*<UserFeatureGroup>*; for example, **COS1International24Hour**
  - Access Profile—Default
- Step 6** Click **Add**.
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This procedure updates both USM and Unified CM.

Repeat this procedure for all required users and for all required locations.

## Adding User Extension Mobility

Extension mobility can be set up to enable users to login to phones on their home Unified CM cluster.

To add extension mobility for a user, perform the following steps:

### Procedure

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- Step 1** Choose **Location Administration > Users**.
- Step 2** Click **Add** next to the user to which you want to add extension mobility.
- Step 3** From the User Mobility Profile menu, enter the following:
- Phone Type—*<UserPhoneType>*; for example, **Cisco 7961 SCCP**
  - Button Template Name—*<UserButtonTemplate>*; for example, **Standard 7961 SCCP**

- Softkey Template—*<UserSoftkeyTemplate>*; for example, **Softkey\_Advanced**

**Step 4** From the Number Details menu, enter the following:

- Select the Extension from the drop-down menu—*<ExtOrE164>*; for example, **DDI 1402111002**
- Label—*<PhoneLabel>*; for example, **user1**
- Line Class of Service: *<LineCOS>*; for example, **COS1International24Hour**

**Step 5** Click **Add**.



**Note** If required and possible, you can add multiple lines.

This procedure updates both USM and Unified CM.

Repeat this procedure for all required users, and for all required locations.

## Managing Phones

To manage a phone, perform the following steps:

### Procedure

**Step 1** Choose **Location Administration > Phone Management**.

**Step 2** Choose the user you want to manage by clicking the username; for example, **001D452CDA84**.

You can use this page to do the following:

- Reset the phone
- Login a user
- Logout a user
- Modify the phone button template
- Modify the phone locale
- Delete lines
- Modify phone features; for example, enable or disable PC support, enable or disable speaker, and so on
- Modify line settings; for example, enable or disable hot line, enable or disable call forwarding, and so on
- Unregister the phone

This procedure updates both USM and Unified CM.

## Managing Users

To manage a user, perform the following steps:

**Procedure**

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**Step 1** Choose **Location Administration > Users**.

**Step 2** Choose the phone you want to manage by clicking the MAC address of the phone; for example, **cus1loc1user1**.

You can use this page to do the following:

- Change the user password
  - Change the user PIN
  - Modify or delete user extension mobility
  - Associate the user to a phone
  - Delete the user
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This procedure updates both USM and Unified CM.