



User Guide for Cisco Unified Provisioning Manager

Software Release 1.1

Cisco Unified Communications Management Suite

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-13116-01

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Preface

This manual describes Cisco Unified Provisioning Manager (Provisioning Manager) and provides instructions for using and administering it.

Audience

The audience for this document is for network administrators and operators who monitor, maintain, and configure the status of the IP telephony systems and applications.

Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	boldface font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Information you enter	boldface screen font
Variables you enter	<i>italic screen</i> font
Menu items and button names	boldface font
Selecting a menu item in paragraphs	Option>Network Preferences
Selecting a menu item in tables	Option>Network Preferences



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.



Tip

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

**Caution**

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

Product Documentation

**Note**

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 1 describes the product documentation that is available.

Table 1 **Product Documentation**

Document Title	Available Formats
<i>Supported Devices Table for Cisco Unified Provisioning Manager 1.1</i>	On Cisco.com at the following URL: http://www.cisco.com/en/US/products/ps7125/products_device_support_tables_list.html
<i>Release Notes for Cisco Unified Provisioning Manager 1.1</i>	<ul style="list-style-type: none"> • In PDF on the product CD-ROM • On Cisco.com at the following URL: http://www.cisco.com/en/US/products/ps7125/prod_release_notes_list.html
<i>Installation Guide for Cisco Unified Provisioning Manager 1.1</i>	<ul style="list-style-type: none"> • In PDF on the product CD-ROM • On Cisco.com at the following URL: http://www.cisco.com/en/US/products/ps7125/prod_installation_guides_list.html
<i>User Guide for Cisco Unified Provisioning Manager 1.1</i>	<ul style="list-style-type: none"> • In PDF on the product CD-ROM • On Cisco.com at the following URL: http://www.cisco.com/en/US/products/ps7125/products_user_guide_list.html

Obtaining Documentation, Obtaining Support, and Security Guidelines

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

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>



CHAPTER 1

Introduction

What Is Provisioning Manager?

Cisco Unified Provisioning Manager (Provisioning Manager) provides a scalable web-based solution to manage a company's next-generation communication services. Provisioning Manager manages IP communication services in an integrated IP telephony, voicemail, and unified messaging environment that includes Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Express, and Cisco Unity Connection systems.



Note

Starting with versions 4.3, 5.1, and 6.0, the product we formerly referred to as Cisco Unified CallManager will be called Cisco Unified Communications Manager. Versions earlier than 4.3 and 5.1 retain the Cisco Unified CallManager name. Throughout this document/online help, any reference to Cisco Unified Communications Manager can also be understood to refer to Cisco Unified CallManager, unless explicitly noted.

Provisioning Manager is a product from the Cisco Unified Communications Management Suite. It provides provisioning for Cisco Unified Communications initial deployments and implementations, and then remains deployed to provide ongoing operational provisioning and activation services for individual subscriber changes. Provisioning Manager provides a single, consolidated view of subscribers across the organization. It provides a set of business-level management abstractions, which are policy-driven through the use of automation, for managing subscriber services across the Cisco Unified Communications infrastructure.

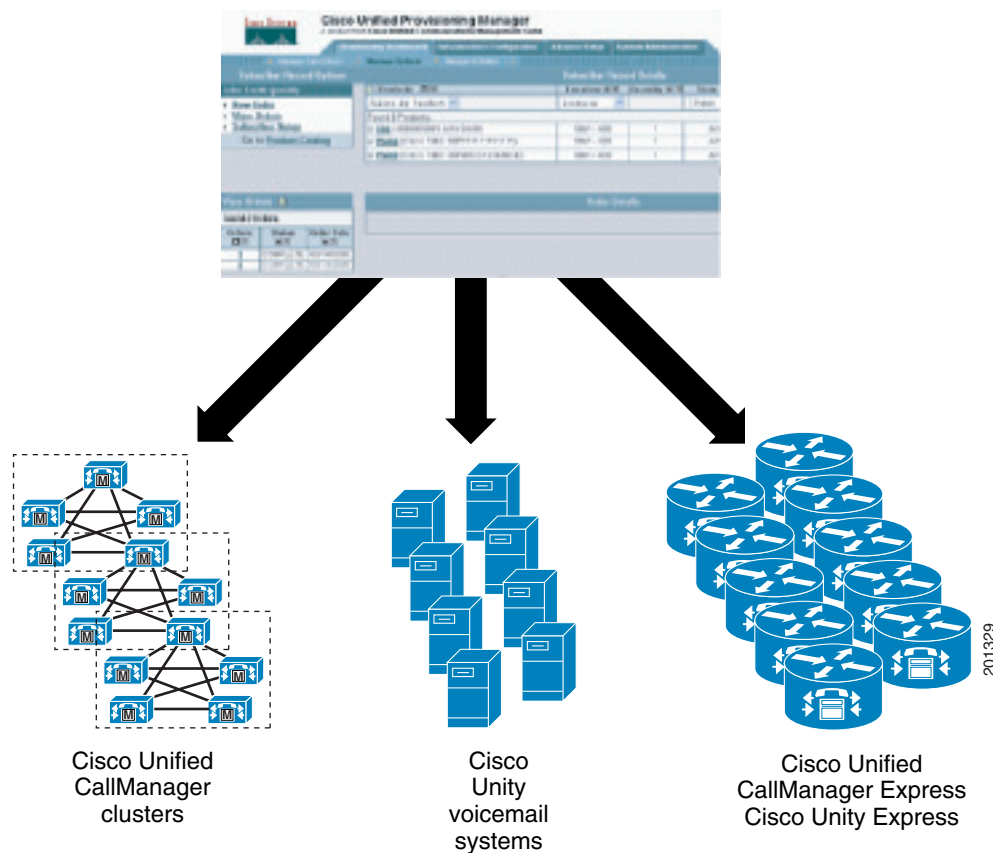
A template capability permits defining standard configurations that can be reused for new sites or location deployments. Batch provisioning permits the rollout of large numbers of subscribers at the same time.

Administrators can configure policy at various levels to determine who can do delegated management, for whom that delegation applies, how business-level services apply to Cisco Unified Communications voice and messaging applications, and which types of end users (subscribers) are permitted to order which standard services. Through the use of this policy and standard configuration approach, provisioning and activating subscriber services is greatly simplified, while retaining the overall ability to manage and provide services that make use of the underlying Cisco Unified Communications applications.

Provisioning Manager Architecture

Provisioning Manager is a web-based application based on the J2EE architecture. It resides on a separate Windows-based computer and uses various interfaces to connect with Cisco Unified Communications applications (see Figure 1-1). It does not need to deploy any agent software onto those applications' platforms. Provisioning Manager uses open interfaces such as HTTP, HTTPS, AVVID XML Layer (AXL)–Simple Object Access Protocol (SOAP), SSH, and Telnet to remotely configure or query the applications being managed. Different levels of user access can be configured by the administrator.

Figure 1-1 Cisco Unified Provisioning Manager Interoperability



Provisioning Manager Features and Functions

Provisioning Manager permits standard services (for example a phone, line, or voicemail) to be ordered for a subscriber (the owner of the individual phone, line, or voicemail). Provisioning Manager processes all changes to the underlying Cisco Unified Communications applications as a service requests or orders. An order may be created to make a subscriber-level change (to a phone, a line and so on), or an IP communications-level infrastructure change (such as provisioning a new calling search space or route pattern). All orders in the system are tracked and viewable, both across orders and by subscriber name or ID. The order records show who initiated the order, the times of various process steps, and what the order contained. Provisioning Manager allows delegation of the order management capability so that requests for service additions, changes, or cancellations can be done without requiring an underlying

knowledge of the voice applications that are delivering those services. Provisioning Manager provides the same ordering experience regardless of the technology delivering the Cisco Unified Communication services.

These topics briefly describe Provisioning Manager functions that will be used frequently:

- [What Are Processors?, page 1-3](#)
- [What Are Domains?, page 1-3](#)
- [What Are Service Areas?, page 1-3](#)
- [What Are Provisioning Attributes?, page 1-4](#)
- [What Are Infrastructure Configuration Templates?, page 1-4](#)
- [What Is Batch Provisioning?, page 1-4](#)
- [What Is Role-Based Access?, page 1-4](#)
- [What Is Inventory Tracking?, page 1-5](#)

What Are Processors?

In Provisioning Manager, you create Call Processors and Unified Message Processors. Call Processors are proxies for each instance of Cisco Unified Communications Manager or Cisco Unified Communications Manager Express. Unified Message Processors are proxies for each instance of Cisco Unity, Cisco Unity Express, or Cisco Unity Connection.

You synchronize the data in the Cisco Unified Communications Manager and Cisco Unity systems with the Call Processors and Unified Message Processors, and then synchronizing with the Domains, which populates Provisioning Manager with the existing active users and services, and provides a consolidated view of all of the infrastructure and subscriber information.

For more information about Service Areas, see [Configuring Processors, page 5-1](#).

What Are Domains?

Domains are groupings of subscribers. For each grouping, one or more system users can be authorized to manage services for subscribers within that Domain. In addition, rules or policies may be set on a Domain. Those rules and policies will apply to services for subscribers in that Domain. Common policies can also be applied on operations within a Domain.

For more information about Domains, see [Working with Provisioning Manager Domains, page 5-10](#).

What Are Service Areas?

Service areas are groupings within a Domain that are used to structure and manage IP telephony and messaging services. The Service Area typically acts as a service offering location and provides a template mechanism that determines provisioning attribute values used during order processing. Administrative users may configure Service Areas. This helps ensure that service orders follow company policies and best practices for configuring subscribers. A Service Area also handles Cisco Unified Communications Manager partitioning and class of service by directing which location, device pool, calling search space, and route partition assignments to use for any user provisioned into that Service Area.

For more information about Service Areas, see [Working with Service Areas, page 5-16](#).

What Are Provisioning Attributes?

Provisioning attributes are configuration settings that are applied to services on an order during activation. The system administrator can assign and configure provisioning attributes throughout different levels within the system (at the Domain, Service Area, or Subscriber type levels, or on an individual order basis). At order time the system takes into account the configured provisioning attribute assignments in addition to the Service Area settings to determine the final product configuration to be provisioned. The combination of Service Area settings and provisioning attributes gives administrators the flexibility to customize the provisioning policies for subscriber services.

For more information about provisioning attributes, see [Configuring Provisioning Attributes, page 6-13](#).

What Are Infrastructure Configuration Templates?

Configuration Templates enable you to consistently auto-configure the Cisco Unified Communications voice infrastructure. In Provisioning Manager, you can create templates to initially configure or reconfigure Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, and Cisco Unity Express. Templates can contain an unlimited number of objects. This is limited only by the time required to execute (push to a device) the template.

Provisioning Manager templates can contain up to twenty different types of objects, such as device pools, route partitions, calling search spaces, route lists, route groups, or route patterns. Objects placed in a template may have embedded keywords within their attributes. When pushing a template to a device, you may specify an optional keyword, which defines the values of the keywords to be used (replaced) during the provisioning operation. Templates may contain subtemplates as well, permitting reuse of common types of configuration information across higher level templates. Cisco Unified Communications Manager Express and Cisco Unity Express templates contain Cisco IOS software text or CLI text with keywords. Configuration Templates enable you to define a standard set of configurations that you can use in multiple situations, such as rolling out new offices, locations, remote sites, or organizational overlays.

For more information about provisioning attributes, see [Using Templates—Infrastructure Configuration, page 5-23](#).

What Is Batch Provisioning?

You may order subscriber services on an individual basis for a single subscriber. But when deploying a large number of services, you should combine them into a single batch. Batch provisioning enables you to create a single batch that contains multiple types of orders (Add, Change, or Cancel orders). You can also combine multiple types of services into a single batch operation. For example, a batch can contain a combination of phone and voicemail additions or changes.

Batches can be run immediately upon uploading to Provisioning Manager, or they can be scheduled to run at a later time.

For more information about provisioning attributes, see [Using Batch Provisioning, page 5-42](#).

What Is Role-Based Access?

Provisioning Manager provides two dimensions to roles, depending on whether you are a system user or a service subscriber. User roles define access to certain functions available to Provisioning Manager users. The subscriber role refers to the role that a subscriber will have within an organization. This role dictates the services for which the subscriber is entitled. User roles are pre-defined in the system. Subscriber roles are configured by the administrator.

For more information about provisioning attributes, see the following:

- [Managing Subscribers, page 2-1](#)
- [Managing Users, page 2-9](#)

What Is Inventory Tracking?

Provisioning Manager tracks the information about all services and subscribers in an internal asset management inventory system. This information can be viewed by an administrator, who can create and save advanced searches that permit producing report templates in HTML or Microsoft Excel format. Sample reports for configuration and phone information are provided.

For more information about provisioning attributes, see [Searching Inventory, page 7-13](#).

How Will I Use Provisioning Manager?

This topic describes some common scenarios for using Cisco Unified Provisioning Manager. This is not an all-inclusive list.

You can use Provisioning Manager for the following:

- [Managing Existing Voice Services, page 1-5](#)
- [Deploying a New Voice Infrastructure, page 1-6](#)
- [Managing Subscriber Services, page 1-6](#)
- [Deploying a New Site on an Existing Voice Infrastructure, page 1-6](#)

Also, you may want to perform several advanced activities to meet the needs of your Cisco Unified Communications deployment.

Some of these activities are described in the following:

- [Customizing Provisioning Manager to Meet Your Needs, page 1-6](#)
- [Performing Large Provisioning Activities, page 1-7](#)
- [Working with Provisioning Manager Resources, page 1-7](#)
- [Administering Provisioning Manager, page 1-7](#)

Managing Existing Voice Services

If you have existing Cisco Unified Communications devices (Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Connection, or Cisco Unity Express) that you are managing through their respective interfaces, but want to delegate management of a subset of these voice services to other users, see the following:

- [Creating Call Processors, page 5-2](#)
- [Synchronizing Call Processors, page 5-4](#)
- [Creating Unified Message Processors, page 5-6](#)
- [Synchronizing Unified Message Processors, page 5-8](#)
- [Creating a Domain, page 5-11](#)
- [Creating Service Areas, page 5-17](#)

- [Synchronizing Domains, page 5-13](#)
- [Managing Orders, page 3-1](#)

Deploying a New Voice Infrastructure

If you are adding a new Cisco Unified Communications Manager or Cisco Unified Communications Manager Express and related voicemail systems, and you want to use a standardized approach that can be applied to every deployment, see the following:

- [Using Templates—Infrastructure Configuration, page 5-23](#)
- [Configuring a Domain, page 5-12](#)
- [Configuring Service Areas, page 5-18](#)
- [Synchronizing Domains, page 5-13](#)
- [Managing Orders, page 3-1](#)
- [Using Batch Provisioning, page 5-42](#)

Managing Subscriber Services

If you will manage services for subscribers in your office, see the following:

- [Managing Subscribers, page 2-1](#)
- [Viewing Orders, page 3-1](#)
- [Ordering Products and Services, page 3-2](#)
- [Processing Orders, page 3-17](#)
- [Canceling Products, page 3-19](#)

Deploying a New Site on an Existing Voice Infrastructure

If you have an existing Cisco Unified Communications Manager to which you want to add a new location or site, see the following:

- [Configuring a Domain, page 5-12](#)
- [Configuring Service Areas, page 5-18](#)
- [Synchronizing Domains, page 5-13](#)
- [Managing Orders, page 3-1](#)
- [Using Batch Provisioning, page 5-42](#)

Customizing Provisioning Manager to Meet Your Needs

If you want to change the default setting for how Provisioning Manager applies various policies, see the following:

- [Business Rules, page 6-2](#)
- [Configuring Provisioning Attributes, page 6-13](#)

- [Configuring Phone Button Templates, page 6-1](#)
- [Working with Subscriber Roles, page 2-6](#)

Performing Large Provisioning Activities

If you are deploying a large number of services, you may want to combine these activities into a single batch. See the following:

- [Using Batch Provisioning, page 5-42](#)

Working with Provisioning Manager Resources

When you need to manage Provisioning Manager resources, see the following:

- [Managing Phone Inventory, page 4-1](#)
- [Managing Directory Inventory, page 4-4](#)
- [Searching Inventory, page 7-13](#)
- [Viewing System Reports, page 7-21](#)

Administering Provisioning Manager

For information on performing administrative activities, see the following:

- [Viewing Licensing Information, page 7-1](#)
- [Managing Users, page 2-9](#)
- [Maintaining Data, page 7-5](#)
- [Scheduling Synchronizations, page 7-12](#)
- [Managing Log Files, page 7-4](#)

Starting Provisioning Manager

You can access Provisioning Manager on the system where Provisioning Manager is installed, or remotely from a client system.

- To start Provisioning Manager on the server, from the Windows desktop select **Start > Programs > Cisco Unified Provisioning Manager > Log in to Cisco Unified Provisioning Manager**.
- To start Provisioning Manager on a client system, in a browser enter the following URL:
`http://<system name>/cupm/Login`.



Note

If Enhanced Security is enabled on the Windows 2003 system, you must add the Provisioning Manager home page to the Internet Explorer Trusted Sites Zone. You will not be able to access the Cisco Unified Provisioning Manager home page until it is added to the trusted sites. (See [Adding the Provisioning Manager Home Page to the Internet Explorer Trusted Sites Zone, page 1-8](#).)

Logging Out of Provisioning Manager

In the top right corner of the Provisioning Manager home page, click **Log Out**.

Adding the Provisioning Manager Home Page to the Internet Explorer Trusted Sites Zone

If Enhanced Security is enabled on the Windows 2003 system, you must perform the following procedure before you can access the Provisioning Manager's home page.

-
- Step 1** Open Provisioning Manager, select **Start > Programs > Cisco Unified Provisioning Manager > Log in to Cisco Unified Provisioning Manager**.
 - Step 2** In the File menu, click **Add this site to**.
 - Step 3** Click **Trusted Sites Zone**.
 - Step 4** In the **Trusted Sites** dialog box, click **Add** to move the site to the list.
 - Step 5** Click **Close**.
 - Step 6** Refresh the page to view the site from its new zone.
 - Step 7** Check the Status bar of the browser to confirm that the site is in the trusted sites zone.
-

Accessing the Provisioning Manager User Guide

On the Provisioning Manager home page, click the **Help** button in the top right corner. A PDF version of *User Guide for Cisco Unified Provisioning Manager* opens.



CHAPTER 2

Managing Subscribers and Users

These topics describe how to use subscriber and user management:

- [Managing Subscribers, page 2-1](#)
- [Working with Subscriber Roles, page 2-6](#)
- [Managing Users, page 2-9](#)

Managing Subscribers

A subscriber is a person who has active IP Telephony services. Provisioning Manager treats the subscriber as the owner of all active services in the voice network. All services are tied to subscribers.

This section describes the following:

- [Creating Subscribers, page 2-1](#)
- [Updating Subscriber Information, page 2-2](#)
- [Resetting Subscriber Passwords, page 2-4](#)
- [Managing Authorization Roles, page 2-5](#)
- [Synchronizing a Subscriber, page 2-5](#)
- [Removing a Subscriber, page 2-5](#)
- [Accessing Subscriber Records, page 2-6](#)

Creating Subscribers

-
- Step 1** Select **Provisioning Dashboard > Manage Subscribers > Add Subscriber**. The Manage Subscriber page appears.



Tip

The Provisioning Dashboard page provides a direct link to the Manage Subscriber page. In the Manage Subscriber pane, click **Add Subscriber**.

Step 2 Do the following:

- Select a Domain.
- Enter a subscriber ID. This is a unique ID and is not case sensitive.
- Enter the subscriber's name.



Note

Remember the following when entering the subscribers name:

- For Cisco Unified Communications Manager Express and Cisco Unity Express, enter only alphabetical characters in the First Name and Last Name fields. If you use other types of characters, orders for the subscriber will fail.
- For Call Processors, the combination of characters for First Name and Last Name cannot exceed 30 characters. If this limit is exceeded, when you place an order, the Call Processor sends an error.

- (Optional) Enter the subscriber's phone number.
- (Optional) Enter the subscriber's email address.
- (Optional) Enter the subscriber's department.
- (Optional) Select roles for the subscriber.



Note

The default or Employee subscriber role should be configured to match the typical setup of employees in your organization. If you do not configure the default or Employee subscriber role to meet your needs, you may not see all the desired options in the employee subscriber record. The DefaultUserType rule (see [DefaultUserType, page 6-5](#)) controls which subscriber role is set as the default. Provisioning Manager comes with the Employee subscriber role configured as the default subscriber role.

Step 3 Click **Create**. The subscriber is created. You can now update any of the subscriber information.



Tip

In the Manage Subscriber page, you can access a particular subscriber's Subscriber Record Details page. Click either View Subscriber Services or Order Subscriber Services.

Updating Subscriber Information

Once a subscriber is created you can use the Manage Subscriber page to do the following:

- Change subscriber's name.



Note

Remember the following when entering the subscribers name:

- For Cisco Unified Communications Manager Express and Cisco Unity Express, enter only alphabetical characters in the First Name and Last Name fields. If you use other types of characters, orders for the subscriber will fail.

- For Cisco Unified Communications Manager, the combination of characters for First Name and Last Name cannot exceed 30 characters.

-
- Change subscriber's phone number.
 - Change subscriber's email.
 - Change subscriber's department.
 - Change roles.
 - View subscriber services.
 - Order subscriber services.
 - Manage passwords.
 - Manage authorization roles.
 - Synchronize subscriber. Appears only after an order is placed for the subscriber.



**Note**

When synchronizing subscribers, remember the following:

- The username and phone number fields may display Unknown for subscribers who were initially created on Cisco Unified Communications Manager Express and then later synchronized to Provisioning Manager.

You can update the subscriber information through Provisioning Manager, but be aware that this information will be pushed to the Cisco Unified Communications Manager Express system, and will overwrite any existing information for the user in the ephone description field.

- If a Cisco Unified Communications Manager Express is the only device present in a Domain and Service Area, during Domain synchronization subscribers are not created in Provisioning Manager if the ephone username command is not configured in Cisco Unified Communications Manager Express. Make sure the ephone username command is configured in Cisco Unified Communications Manager Express for all subscribers.

-
- Step 1** Select **Provisioning Dashboard > Manage Subscribers > Add Subscriber**. The Manage Subscriber page appears.
- Step 2** Click the Chooser icon () next to the Subscriber ID field. The Choose a Subscriber dialog box appears.
-  **Tip** The Provisioning Dashboard page provides a direct link to the Choose a Subscriber dialog box. In the Manage Subscriber pane, click **View Subscribers**.
-
- Step 3** Select the subscriber that you require. The user information is populated in the Manage Subscriber page.
- Step 4** Change the desired information.
- Step 5** Click **Update**.
-

Resetting Subscriber Passwords

You can reset passwords only if you have the correct privileges (see [Managing Authorization Roles](#), page 2-5). You can reset the following:

- Provisioning Manager login password
- Cisco Unified Communications Manager password
- Cisco Unified Communications Manager PIN
- Cisco Unity Subscriber password



Note

The Cisco Unified Communications Manager password cannot be modified when the Cisco Unified Communications Manager is configured to use external authentication. Provisioning Manager indicates that the password is updated, even though it is not.

You can either reset the password to the Provisioning Manager system default, or specify a new password. You can obtain the default values for the user passwords on these systems from your Provisioning Manager administrator, Managed Service Provider, or corporate IT department.

The following rules control the default passwords:

- SelfcareAccountsDefaultPassword
- DefaultCallManagerPassword
- DefaultCallManagerPIN
- DefaultUnitySubscriberPassword

For more information about rules, see [Business Rules](#), page 6-2.



Note

After you reset a subscriber's password, you must inform the subscriber of the default value that is required to change their password.

Step 1 Open the Manage Subscriber page for the desired subscriber (see [Updating Subscriber Information](#), page 2-2).

Step 2 Click **Manage Password**. The Password Management page appears.

Step 3 In the Password to Modify field, select the password to be changed.

Do one of the following:

- To set the password to the default, click **Reset to Default**.
- Specify a new password (and confirm it) and then click **Set to New Value**.

A message appears, asking you to confirm.

Step 4 Click **Done**.

Managing Authorization Roles

Table 2-1 lists the authorizations roles that are available in Provisioning Manager.

-
- Step 1** Open the Manage Subscriber page for the desired subscriber (see [Updating Subscriber Information, page 2-2](#)).
 - Step 2** Click **Manage Authorization Roles**. The Assign User Authorization Roles page appears.
 - Step 3** Select the roles that you want to apply to the subscriber.
 - Step 4** Click **Update**.
 - Step 5** Click **Done**.
-

Synchronizing a Subscriber

You can synchronize a single subscriber. The subscriber's data in Provisioning Manager is synchronized with the subscriber's data in the Call Processor. For more information about synchronizing, see [Synchronizing Domains, page 5-13](#).

**Note**

If a Cisco Unified Communications Manager Express is the only device present in a Domain and Service Area, during Domain synchronization subscribers are not created in Provisioning Manager if the ephone username command is not configured in Cisco Unified Communications Manager Express. Make sure the ephone username command is configured in Cisco Unified Communications Manager Express for all subscribers.

-
- Step 1** Open the Manage Subscriber page for the desired subscriber (see [Updating Subscriber Information, page 2-2](#)).
 - Step 2** Click **Synchronize Subscriber**. A confirmation dialog box appears. The Synchronize Subscriber option does not appear for a subscriber until an order is placed for the subscriber.
 - Step 3** Click **OK**.
-

Removing a Subscriber

A subscriber cannot be removed if there are products or services in their subscriber record. The products or services must be canceled first.

-
- Step 1** Open the Manage Subscriber page for the desired subscriber (see [Updating Subscriber Information, page 2-2](#)).
 - Step 2** Click **Remove**.
-

Accessing Subscriber Records

Step 1 Select **Provisioning Dashboard > Manage Subscribers > Search Subscribers**. The Search page for subscribers appears.



Note When searching for subscribers using a subscriber's phone number, the Subscriber Search Result page only displays the contact number for a subscriber. This might not be the the number that was used in the search. Also, if the subscriber is assigned multiple numbers that match the search, a record for each number is displayed.



Tip The Provisioning Dashboard page provides a direct link to the Search page for subscribers. In the Manage Subscriber pane, click **Search Subscribers**.

Step 2 Enter the subscriber information to use for searching and click **Search**. The Subscriber Search Results page appears.



Tip Clicking the information icon (i) opens the Manage Subscriber page for the subscriber.

Step 3 Select the subscriber that you require. The Subscriber Record Details page appears for the subscriber.

Working with Subscriber Roles

Subscriber roles control which products and services a subscriber can order. The subscriber role also dictates which Service Areas a subscriber is entitled to access.



Note Do not confuse subscribers with users. These two roles have different meanings in Provisioning Manager. For a description of a user, see [Managing Users, page 2-9](#).

The default subscriber types are:

- Employee—Default role assigned to new subscribers



Note The Employee subscriber role should be configured to match the typical setup of employees in your organization. If you do not configure the employee subscriber role to meet your needs, you may not see all the desired options in the employee subscriber record.

- Contractor
- Manager
- Senior Manager

- Executive
- Operator

These subscriber types exist in each Domain in Provisioning Manager. Each set of subscriber types may be customized in each Domain by adding, removing, or changing these predefined subscriber types.

Creating a New Subscriber Role Type

-
- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
- Step 2** Click **New Subscriber Role**.
- Step 3** Do the following:
- a. Enter a name for the new subscriber role.
 - b. Select the appropriate Domain.
 - c. Click **Save**.

The subscriber role is created, and the View Subscriber Role Type page appears.

**Note**

After creating a role, you should associate products to the role (see [Associating Products to a Subscriber Role Type, page 2-7](#)).

Updating a Subscriber Role Type

The following sections describe what you can do to a subscriber role type:

- [Associating Products to a Subscriber Role Type, page 2-7](#)
- [Assigning Provisioning Attribute Precedence, page 2-8](#)
- [Changing the Name of a Subscriber Role Type, page 2-8](#)
- [Editing Provisioning Attributes for a Subscriber Role Type, page 2-8](#)
- [Removing a Subscriber Role Type, page 2-9](#)

Associating Products to a Subscriber Role Type

When products are associated to a subscriber role, the subscribers with that role can order the associated products (for information on ordering products, see [Ordering Products and Services, page 3-2](#)).

-
- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
- Step 2** In the Domain field, select the Domain where the subscriber role type exists.
- Step 3** Click **Choose Role to View**. The Choose a Subscriber Role Type dialog box appears.
- Step 4** Click the desired subscriber role type. The View Subscriber Role Type page appears.

- Step 5** Click **Associate Products**. The Associate Products page appears.
 - Step 6** Click the check box next to the products that you want to associate to the subscriber role type.
 - Step 7** Click **Save**.
-

Assigning Provisioning Attribute Precedence

When a subscriber belongs to multiple subscriber role types, the precedence setting determines which subscriber type's provisioning attribute settings to use.



- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
 - Step 2** In the Domain field, select the Domain where you want to change provisioning attribute precedence.
 - Step 3** Click **Assign Provisioning Attribute Precedence**. The Assign Precedence page appears.
 - Step 4** Click the arrows next to a subscriber role type to move it up or down in the order of precedence.
 - Step 5** Click **Save**.
-

Changing the Name of a Subscriber Role Type

- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
 - Step 2** In the Domain field, select the Domain where the subscriber role type exists.
 - Step 3** Click **Choose Role to View**. The Choose a Subscriber Role Type dialog box appears.
 - Step 4** Click the desired subscriber role type. The View Subscriber Role Type page appears.
 - Step 5** Click **Update**. The Update Subscriber Role Type page appears.
 - Step 6** Change the subscriber role type name.
 - Step 7** Click **Save**.
-

Editing Provisioning Attributes for a Subscriber Role Type

- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
- Step 2** In the Domain field, select the Domain where the subscriber role type exists.
- Step 3** Click **Choose Role to View**. The Choose a Subscriber Role Type dialog box appears.
- Step 4** Click the desired subscriber role type. The View Subscriber Role Type page appears.
- Step 5** Click **Edit Provisioning Attributes**. The Provisioning Attribute Management page appears.

- Step 6** Click the plus sign next to the attribute heading that you want to edit.
- To edit an attribute's information, click the Edit icon () next to the attribute and make the desired changes.
 - To remove the attribute, click the Clear icon () next to the attribute.
- Step 7** Click **Done**.
-

Removing a Subscriber Role Type

- Step 1** Select **Advanced Setup > Policies > Subscriber Roles**. The Subscriber Role Configuration page appears.
- Step 2** In the Domain field, select the Domain where the subscriber role type exists.
- Step 3** Click **Choose Role to View**. The Choose a Subscriber Role Type dialog box appears.
- Step 4** Click the desired subscriber role type. The View Subscriber Role Type page appears.
- Step 5** Click **Remove**. A confirmation dialog box appears.
- Step 6** Click **OK**. The subscriber role type is removed.
-

Managing Users

Users in Provisioning Manager represent logins to the system for people who can access Provisioning Manager to perform various activities. Users can be permitted to perform various roles within Provisioning Manager. These roles can be system-wide (for example, administrators), or they can be associated to a single Domain, which limits the scope of changes that the user can make.



Note A user can also be a subscriber.

This section describes the following:

- [Creating Users, page 2-10](#)
- [Updating User Information, page 2-10](#)
- [Resetting User Passwords, page 2-11](#)
- [Managing Authorization Roles, page 2-11](#)
- [Synchronizing Users, page 2-13](#)
- [Removing a User, page 2-13](#)
- [Accessing Subscriber Records for a User, page 2-13](#)

Creating Users

-
- Step 1** Select **System Administration > Manage Users**. The Manage User page appears.
- Step 2** Do the following:
- Select a Domain.
 - Enter a user ID.
 - Enter the user's name.
 - (Optional) Enter the user's phone number.
 - (Optional) Enter the user's email address.
 - (Optional) Enter the user's department.
- Step 3** Click **Create**. The user is created. You can now update any of the user information.
-


Updating User Information

Once a user is created you can use the Manage User page to change the following information:

- User's name.
- User's phone number.
- User's email.
- User's department.
- Roles.

Also, you can do the following:

- View subscriber's record.
- Order services for the subscriber.
- Set or modify passwords.
- Manage authorization roles.
- Synchronize subscribers. This option does not appear until an order is placed for the user.

-
- Step 1** Select **System Administration > Manage Users**. The Manage User page appears.
- Step 2** Click the Chooser icon () next to the User ID field. The Choose a User dialog box appears.
- Step 3** Select the user that you require. The user information is populated in the Manage User page.
- Step 4** Change the desired information.
- Step 5** Click **Update**.
-

Resetting User Passwords

You can reset passwords only if you have the correct privileges (see [Managing Authorization Roles, page 2-5](#)). You can reset the passwords for the following:

- Provisioning Manager login
- Cisco Unified Communications Manager
- Cisco Unified Communications Manager PIN
- Cisco Unity subscriber

**Note**

The Cisco Unified Communications Manager password cannot be modified when the Cisco Unified Communications Manager is configured to use external authentication. Provisioning Manager indicates that the password is updated, even though it is not.

You can either reset the password to the Provisioning Manager system default, or specify a new password. You can obtain the default values for the user passwords on these systems from your Provisioning Manager administrator, Managed Service Provider, or corporate IT department.

The default user passwords are controlled by the following rules (see [Business Rules, page 6-2](#)):

- SelfcareAccountsDefaultPassword
- DefaultCallManagerPIN
- DefaultCallManagerPassword
- DefaultUnitySubscriberPassword

**Note**

After resetting a user's password, you must inform the user of the new value that was set.

- Step 1** Open the Manage User page for the desired user (see [Updating User Information, page 2-10](#)).
- Step 2** Click **Manage Password**. The Password Management page appears.
- Step 3** In the Password to Modify field, select the password to be changed.
Do one of the following:
 - To set the password to the default, click **Reset to Default**.
 - Specify a new password (and confirm it) and then click **Set to New Value**.A message appears, asking you to confirm.
- Step 4** Click **Done**.

Managing Authorization Roles

[Table 2-1](#) lists the authorization roles that are available in Provisioning Manager.

**Note**

Global roles apply system-wide and Domain roles only apply to the Domains the user belongs to.

Table 2-1 Authorization Roles

Authorization Role	Description
Global	
Administration	Has access to all Provisioning Manager functionality.
Maintenance	Authorized to configure system cleanup activities. See Maintaining Data, page 7-5 .
Domain	
Policy	Authorized to modify phone button templates and subscriber roles, and add or update phone inventory.
Ordering Roles	
Ordering	Users assigned these roles are allowed to place orders for other subscribers and themselves. Authorized to: <ul style="list-style-type: none"> • Add, delete, or update a subscriber within a Domain. • Add, delete, or update a subscriber role within a Domain (if the rule for that Domain permits it). • Add, delete, or update phones in the inventory within a Domain (if the rule for that Domain permits it). • Search and view detailed subscriber information within a Domain. • Place an order for a subscriber within a Domain.
Advanced Ordering	Authorized to access all the functionality specified by the Ordering role; can also access Advance Order Options in the Order Entry page.
Advanced Assignment	Authorized to access all the functionality specified by the Ordering role, and to assign the MAC address for a phone product at the time of order entry.
Activity Roles	
Approval	Authorized to accept and complete the approval for orders.
Assignment	Authorized to accept the user activity for assigning the MAC address.
Shipping	Authorized to accept and complete shipping of orders.
Receiving	Authorized to accept and complete receiving of orders.

Step 1 Open the Manage User page for the desired user (see [Updating User Information, page 2-10](#)).

Step 2 Click **Edit** next to the assigned role field. The Assign User Authorization Roles page appears.



Tip To access the Assign User Authorization Roles page, you can also click **Manage Authorization Roles**.

Step 3 Select the roles that you want to apply to the user.

Step 4 Click **Update**.

Step 5 Click **Done**.

Synchronizing Users

If the user is also a subscriber, you can synchronize the user. The user's data in Provisioning Manager is synchronized with the user's data in the Call Processor. For more information about synchronizing, see [Synchronizing Domains, page 5-13](#).

Step 1 Open the Manage User page for the desired user (see [Updating User Information, page 2-10](#)).

Step 2 Click **Synchronize Subscriber**. A confirmation dialog box appears. The Synchronize Subscriber option does not appear for a user until an order is placed for the user.

Step 3 Click **OK**.

Removing a User

Step 1 Open the Manage User page for the desired user (see [Updating User Information, page 2-10](#)).

Step 2 Click **Remove**. A confirmation dialog box appears.

Step 3 Click **OK**.

Accessing Subscriber Records for a User

Step 1 Open the Manage User page for the desired user (see [Updating User Information, page 2-10](#)).

Step 2 Click **View Subscriber Services**. The Subscriber Record Details page for the user appears.



CHAPTER 3

Managing Orders

This chapter provides details on creating orders for Provisioning Manager products and services, processing orders, and changing and canceling existing products and services.

All changes to the underlying systems are made through a two-stage process of creating an order and then processing the order. You can set policies for both of these stages. For example, you can configure the system so that one group of users can only create and submit orders, while another group of users can view and perform processing-related activities. Provisioning Manager contains an automation engine which performs the order processing, including service activation and business flow based on how Provisioning Manager is configured.

Order management is described in the following sections:

- [Viewing Orders, page 3-1](#)
- [Ordering Products and Services, page 3-2](#)
- [Processing Orders, page 3-17](#)
- [Canceling Products, page 3-19](#)

Viewing Orders

Orders for a subscriber are displayed in the Subscriber Record page for that subscriber.

Accessing a Subscriber Record

If you are assigned the Ordering authorization role, you can access your own subscriber record, and the subscriber records of other users.

-
- Step 1** Select **Provisioning Dashboard > Manage Subscribers > Search Subscriber**. The Search page appears.
- Step 2** Click the desired subscriber. The Subscriber Record page for the selected subscriber appears.



Tip The Provisioning Dashboard page provides a direct link to the Search page. In the Manage Subscriber pane, click **Search Subscribers**.

Ordering Products and Services

Using Order Manager, you can create orders for telephone equipment and services. You can create orders for individual products, or you can order bundled products and services.

The length of time it takes to provision an order can vary. To verify if the order has successfully completed, go to the subscriber record of the user (see [Accessing a Subscriber Record, page 3-1](#)). The products are listed in the Subscriber Record Details section, and the View Orders section shows the order with the status as Complete. Also, you can perform an order search for the order number.


Note

Users assigned the Ordering authorization role can add, change, or cancel their own orders or those of other subscribers.

[Table 3-1](#) describes the various Provisioning Manager products and services that you can order.

Table 3-1 Provisioning Manager Products and Services

Product or Service	Description
Enable CUPC License	<p>Enables a subscriber with a Cisco Unified Personal Communicator and Cisco Unified Presence Server license on the currently selected Call Processor. This product can be ordered only once per subscriber on the same Call Processor.</p> <p>Cisco Unified Personal Communicator enables users to use their PCs to make phone calls, provides presence information, and can control desktop phones.</p> <p>When ordering softphone support, you must specify a device name that is unique on the Call Processor. The device name can be up to twelve letters (A-Z) or numbers (0-9) long. Lowercase letters will be converted to uppercase.</p> <p>To order Cisco Unified PersonalCommunicator, you must order a physical Phone product, and select Cisco Unified PersonalCommunicator as the type of phone. After the order completes successfully, the user account will be synchronized to the Cisco Unified Presence Server from the Cisco Unified Communications Manager.</p> <p>Note This product is available only for Cisco Unified Communications Manager 6.0.x and later.</p>
Enable Mobility Support	<p>Enables Mobility for the selected subscriber on the currently selected Call Processor.</p> <p>When ordering using default parameters, the following provisioning attributes are used:</p> <ul style="list-style-type: none"> Enable Mobility: True Enable Mobile Voice Access: True Max Desk Pickup Wait Time: 1000ms Remote Destination Limit: 4 <p>Note This product is available only for Cisco Unified Communications Manager 6.0.x and later.</p>

Table 3-1 Provisioning Manager Products and Services (continued)

Product or Service	Description
Enable SoftPhone Support	<p>Softphone support enables users to use their PCs either in conjunction with a physical phone (both would ring at the same time), or to run a CTI port, which is a virtual phone (one that is defined on the Cisco Unified Communications Manager but does not physically exist).</p> <p>Note Cisco Unified Communications Manager Express does not support SoftPhone. You will not be able to order this product when placing orders on a Call Processor based on a Cisco Unified Communications Manager Express.</p> <p>Note If you already have softphone support on all your available Call Processors, the Enable SoftPhone Support product will not appear in your product list. If there is a Call Processor available to you, then a list of valid Service Areas appears for the specific Call Processor.</p> <p>When ordering softphone support, you must specify the server name or IP address of the user's computer in the Associated PC field.</p> <p>Although you enable softphone support based on Service Area, you can enable SoftPhone support only once per Cisco Unified Communications Manager, even if there are more Service Areas associated with the Cisco Unified Communications Manager.</p> <p>Note The SoftPhone Support product applies to a Cisco Softphone that uses a CTI port. Cisco IP Communicator is another type of softphone application that does not use CTI ports to communicate with the Cisco Unified Communications Manager, but acts as a regular hard phone with a MAC address. To order Cisco IP Communicator, you must order a physical Phone product, and select IP Communicator as the type of phone.</p>
Enhanced Phone Service	<p>Includes a phone, phone line, and voicemail. The line is automatically associated with the phone that you ordered, and the voicemail is automatically associated with the line.</p> <p>Note When placing an order for Enhanced Phone Service on a Cisco Unified Communications Manager Express, you must enter the call-forward provisioning attributes. When entering an order, click the Advanced Orders Option button and in the Voicemail Configuration Template provisioning attribute, enter the following commands:</p> <pre data-bbox="836 1606 1445 1680"> call-forward busy <voice mail port/dn> call-forward noan <voice mail port/dn> timeout <seconds> </pre> <p>Note For a Cisco Unity Express Service Area, enter only alphabetical characters in the Voice Mail Display Name field. If you use other types of characters, orders for the subscriber will fail.</p>

Table 3-1 Provisioning Manager Products and Services (continued)


Product or Service	Description
Extension Mobility Access or Access with Line	<p>Enables users to log into a specific phone type and have their phone device profile applied to it. This product is available either by itself, or bundled with a line.</p> <p>Note Extension Mobility is available for ordering only if the optional extension mobility details are entered for a Call Processor when it is added to Provisioning Manager.</p> <p>Note Extension Mobility is not supported on Cisco Unified Communications Manager Express or Cisco Unified Communications Manager 4.0.</p>
Extension Mobility Line	<p>The directory number/line ordered for a device profile on a Cisco Unified Communications Manager. It can be ordered as an upgrade when the user already has Extension Mobility Access.</p> <p>Note Extension Mobility is not supported on Cisco Unified Communications Manager Express or Cisco Unified Communications Manager 4.0.</p>
Line	<p>You can create an order to add a line or directory number for a user who already has a phone. No shipping, assignment, receipt, or tracking (for returns) steps are required for provisioning a new Line product.</p> <p>Note The Upgrade designation next to the Line product indicates that a line is being ordered for an existing phone.</p> <p>Note For Call Processors the display for a line cannot exceed 30 characters. Make sure that the combination of characters for First Name and Last Name does not exceed 30 characters. If this limit is exceeded, when you place an order, the Call Processor sends an error.</p>
Line on a Shared Phone	<p>You order a Line on a Shared Phone when users require their own separate lines on the same physical phone. When this product is provisioned, the phone and all lines on it are displayed in each of the user's subscriber record.</p> <p>The Shared icon () appears next to the phone that is shared in the subscriber record.</p>
Messaging Service	Consists of a phone, phone line, voicemail, and email.
Phone	You can order a phone that does not have a line or a directory number associated with it.
Phone Service	Consists of a phone and a phone line.
Phone Service with Extra Line	The same as Phone Service with an additional line.

Table 3-1 Provisioning Manager Products and Services (continued)

Product or Service	Description
Voicemail and Email (bundle)	<p>You can create orders for additional Voicemail and Email products if the user already has a line.</p> <p>Note The Upgrade designation next to the Voicemail and Email Service product indicates that the line product is being upgraded to include voicemail and email.</p> <p>Note When placing an order for voicemail on Cisco Unified Communications Manager Express, you must enter the call-forward provisioning attributes. When entering an order, click the Advanced Orders Option button and in the Voicemail Configuration Template provisioning attribute, enter the following commands:</p> <pre>call-forward busy <voice mail port/dn> call-forward noan <voice mail port/dn> timeout <seconds></pre>
Voicemail (individually)	<p>You can create orders for additional Voicemail products if the user already has a line.</p> <p>Note The Upgrade designation next to the voicemail product indicates that the Line product is being upgraded to include voicemail.</p> <p>Note When placing an order for voicemail on a Cisco Unified Communications Manager Express, you must enter the call-forward provisioning attributes. When entering an order, click the Advanced Orders Option button and in the Voicemail Configuration Template provisioning attribute, enter the following commands:</p> <pre>call-forward busy <voice mail port/dn> call-forward noan <voice mail port/dn> timeout <seconds></pre>
Email (individually)	<p>You can create orders for additional Email products if the user already has a line and voicemail.</p> <p>Note The Upgrade designation next to the Email product indicates that the Line product is being upgraded to include email.</p>

Table 3-1 *Provisioning Manager Products and Services (continued)*

Product or Service	Description
Unified Messaging	<p>You can create an order to add the Unified Messaging feature if you already have email and voicemail. The Unified Messaging feature allows the retrieval of email from your voicemail, and the retrieval of voicemail from your email. In Cisco Unity, you will be enabling the Text-to-Speech (TTS) capability. In Cisco Unity Connection, you will be enabling the TTS and Internet Mail Access Protocol (IMAP) capability.</p> <p>Note The Upgrade designation next to the Unified Messaging product indicates that the existing email and voicemail are being upgraded to include the Unified Messaging feature.</p>
Unified Messaging Service	<p>A Unified Messaging Service order includes the Line, Phone, Voicemail and Email, and Unified Messaging products.</p> <p>The list of products and services that are available to users is based on user roles and Provisioning Manager system configuration. To modify this list to include the products and services you require, contact your Provisioning Manager administrator.</p>

**Note**

When placing orders for products and services on a Unified Message Processor based on Cisco Unity devices (Cisco Unity, Cisco Unity Connection, and Cisco Unity Express), not all the products and services are available. This is because the devices do not support all products and services. [Table 3-2](#) lists the orderable and nonorderable voice products and services for Cisco Unity devices.

Table 3-2 Supported Cisco Unity Products and Services

Cisco Unity Device	Products and Services
Cisco Unity	Orderable: <ul style="list-style-type: none"> • Voicemail and Email (bundle) • Unified Messaging • Unified Messaging Service • Messaging Service Not orderable: <ul style="list-style-type: none"> • Voicemail or Email individually • Enhanced Phone Service
Cisco Unity Connection	Orderable: <ul style="list-style-type: none"> • Voicemail and Email (bundle) • Voicemail or Email individually • Enhanced Phone Service • Unified Messaging • Unified Messaging Service • Messaging Service
Cisco Unity Express	Orderable: <ul style="list-style-type: none"> • Enhanced Phone Service • Voicemail Not orderable: <ul style="list-style-type: none"> • Unified Messaging • Unified Messaging Service • Voicemail and Email (bundle) • Email individually • Messaging Service

Example Order Procedure

Creating orders for all products and services follows the same basic procedure. This example shows the procedure for ordering Unified Messaging Service.

A user might not have access to all products and services. The list of products and services that appear in a given user's subscriber record depends on the following:

- User role assigned to the user, and the Domains and Service Areas available to the user.
- Availability of resources to support delivery within the Service Areas (for example, a Cisco Unity or Cisco Unity Connection system must be available to provide Unified Messaging).
- Provisioning Manager system configuration.
- Product dependencies:
 - Line requires an existing Phone.

- Voicemail and Email require an existing Line.
- Unified Messaging requires Email.
- Extension Mobility Line requires Extension Mobility Access.

Table 3-3 describes the various fields for ordering products and services. When these fields appear during the order process, they are always required.

Table 3-3 Order Entry Fields

Field/Button	Description
Associated PC	The name (DNS resolvable) or IP address of the computer to be used with the SoftPhone support.
Email ID	Enter the email ID. It cannot contain spaces.
Display Name (Email)	Enter the name to be used in the From field of the email.
Enable Extension Mobility	Select Yes or No .
Extension Mobility Line	Select one of the following: Auto-assigned—System automatically assigns a directory number. Chosen Line—User specifies a directory number. The directory number cannot include dashes or spaces.
Line	Select one of the following: Auto-assigned—System automatically assigns a directory number. Chosen Line—User specifies a directory number. The directory number cannot include dashes or spaces.
Directory Number	Enter a directory number for the line.
Line Position	The possible line positions appear, indicating whether lined are occupied or available. If you select an occupied position (for example, position 2), Provisioning Manager shuffles the existing positions according to the following: <ul style="list-style-type: none"> • If there is an available position (for example, position 5), after a position is selected, all the occupied lines from the selected position to the last occupied position are pushed one position down (for example, 2 is pushed to 3, 3 is pushed to 4; 4 is pushed to 5). The new line is added into the selected position (position 2). • If there is not an available position after the selected position, and there is an available position before the selected position (for example, position 1), the new line is added into position 1. The existing lines do not shuffle. <p>Note Line position is not supported on Cisco Unified Communications Manager Express or Extension Mobility Access Lines.</p>
MAC Address	(Optional) Select a MAC address or enter one.
Phone Type	Select a phone type from the list.
Target Phone	Select a target phone from the list.
Phone Button Template	List of available Phone Button Templates.
Service Area	List of available Service Areas.

Table 3-3 Order Entry Fields (continued)

Field/Button	Description
Unified Messaging	List of available emails to enable Unified Messaging for.
Voicemail Alias	Enter an alias for the voicemail.
Voicemail Display Name	Enter a display name for the voicemail.
Advanced Order Options	Clicking this button opens the Provisioning Attribute Management page for the ordered service or product. This allows you to set provisioning attributes when placing an order (for more details on provisioning attributes, see Configuring Provisioning Attributes, page 6-13). Note The Advanced Order Options button is available only to users who are assigned the Advanced Ordering authorization role.

Step 1 Select **Provisioning Dashboard > Manage Orders > Order Subscriber Services**. The Search Subscribers for Ordering Services page appears.

Tips

- You can choose a subscriber from the Choose a Subscriber dialog box. The dialog box appears when you click **Order Subscriber Services** in the Manage Orders pane of the Provisioning Dashboard page (appears when you click the Provisioning Dashboard tab).
- You can start a new order from the Subscriber Record page by clicking New Order.

Step 2 Enter subscriber information to search on, then click **Search**. The results of your search appear.

Step 3 Click the desired subscriber. The product catalog appears.

Step 4 Click the product that you want to order. You may need to scroll down to locate the desired product. The Order Entry wizard appears in the bottom pane.

Step 5 Follow the Order Entry wizard, entering the required information for the product.

When placing orders, note the following:

- If more than one Service Area is available, the system provides a drop-down list for you to choose from.
- The Advance Order Options button enables you to access provisioning attributes for the ordered service or product. Only users assigned the Advanced Order or Administrator authorization role can access the Advanced Order options. For information on provisioning attributes, see [Configuring Provisioning Attributes, page 6-13](#).

Step 6 Click **Confirm** to start the order process.

Step 7 After you click **Done**, the order number appears in the View Orders section of the subscriber record.

Ordering Shared Phones and Lines

You can configure both shared phones and lines within Provisioning Manager. The following scenarios are possible:

- Common shared line—Multiple users share the same line from different phones.
- Primary shared line—Multiple users share the same line from different phones, but one user's line display is used for all users (for example, a help desk). Users can also have their own lines separate from the shared line.
- Shared phone—Multiple users share the same phone, but have separate lines from that phone.

**Note**

When ordering shared lines and phones, remember the following:

- If the second subscriber orders a line on a shared phone that already has a line with voicemail, email, and unified messaging, he will not see these products for the first line in his subscriber record. This also occurs when a shared line is ordered.
- If the second subscriber deletes a shared phone, it is still displayed in the subscriber record for the first subscriber, and it is still present in Cisco Unified Communications Manager. But if the second subscriber deletes any lines on the shared phone, those lines are deleted from the subscriber record for the first subscriber and from Cisco Unified Communications Manager.
- If the second subscriber deletes a shared line, it is deleted from the second subscriber's phone on Cisco Unified Communications Manager. But it is still displayed in the subscriber record for the first subscriber, and is still present in the first subscriber's phone on Cisco Unified CallManager.
- The first subscriber should not order a new voicemail for the second subscriber's line (which displays a voicemail in its own customer record). This second voicemail will fail on Cisco Unity because a voicemail already exists with the same directory number.
- Provisioning Manager does not use the directory number provisioning attributes that are set for the shared line. Even though, these provisioning attributes can be entered through the Advanced Order Options, they will be ignored. The Directory Number attributes for the existing line are applied to the new shared line.

The directory number attributes available for a line are:

- AAR Group
- Auto Answer
- Call Pickup Group
- Calling Search Space
- Forward All
- Forward Busy Internal
- Forward Busy External
- Forward No Answer Internal
- Forward No Answer External
- Forward No Coverage Internal
- Forward No Coverage External
- Unregistered Internal
- Unregistered External

- MLPP Calling Search Space
- MLPP No Answer Ring Duration
- MLPP Target
- Network Hold Audio Source
- No Answer Ring Duration
- Route Partition
- User Hold Audio Source
- Voicemail Profile

Setting Up a Common Shared Line

You can configure a scenario where multiple users share the same directory number by using lines on their own phones:

- Each user's name is displayed on the shared line on their own phone.
- Caller ID displays the user's name when they call other people.
- Each user's own phone and the shared line are displayed in their own subscriber record.

Example Procedure for Setting Up a Common Shared Line

Step 1 Select **Provisioning Dashboard > Manage Orders > Order Subscriber Services**. The Search Subscribers for Ordering Services page appears.



Tip You can choose a subscriber from the Choose a Subscriber dialog box. The dialog box appears when you click **Order Subscriber Services** in the Manage Orders pane of the Provisioning Dashboard page (appears when you click the Provisioning Dashboard tab).

Step 2 Enter subscriber information to search on, then click **Search**. The results of your search appear.

Step 3 Click the desired subscriber. The product catalog appears.

Step 4 Click **Line Upgrade**.



Note You may need to scroll down to find the product you want.

The Order Entry wizard appears in the bottom pane.

Step 5 Click **Continue** to start the order process.

Step 6 Do the following:

- Select **Chosen Line**.
- Specify the directory number for the shared line.
- Select the Line Position for the line.

- Step 7** Click **Confirm**.
- Step 8** Repeat for each of the remaining users.
-

Setting Up Primary Shared Lines

You can configure a scenario where multiple subscribers share the same line from their own phones, but the primary subscriber's line display takes precedence over the others:

- One primary user, and one or more secondary users, can all share the same line.
- The primary user's line display appears on the shared line on all the subscriber's phones.
- When a secondary subscriber makes calls using the shared line, the caller ID displays the primary subscriber's line display.
- Subscriber records for secondary subscribers display the shared line as well as their own individual lines.
- Subscriber records for the primary subscriber display all three shared phones and all three lines as well as the lines of the individual subscribers.

Example Procedure for Setting Up a Primary Shared Line

In this scenario, the Help Desk is the primary user that shares a line with secondary users 1 and 2.

User	Line Display	Destination Number
Primary User	Help Desk	123
User 1	User 1	321
User 2	User 2	345



Note

For all phones, ensure that you choose a phone model that has capacity for the shared line.

- Step 1** Select **Provisioning Dashboard > Manage Orders > Order Subscriber Services**. The Search Subscribers for Ordering Services page appears.



Tip

You can choose a subscriber from the Choose a Subscriber dialog box. The dialog box appears when you click **Order Subscriber Services** in the Manage Orders pane of the Provisioning Dashboard page (appears when you click the Provisioning Dashboard tab).

- Step 2** Enter subscriber information to search on, then click **Search**. The results of your search appear.
- Step 3** Click User 1. The product catalog appears.
- Step 4** Click **Phone Service** and specify the directory number as 321 (see [Ordering Products and Services, page 3-2](#)).
- Step 5** Repeat [Step 1](#) through [Step 4](#) for User 2, but specify the directory number as 345.
- Step 6** Repeat [Step 1](#) through [Step 4](#) for Primary User (Help Desk), but specify the destination number as 123.
- Step 7** Repeat [Step 1](#).

- Step 8** Click Primary User.
- Step 9** Select a new Line on Shared Phone, making sure to do the following:
- Select **Chosen Line**.
 - Specify 123 for the directory number.
 - Select the MAC address for User 1's phone.
- Step 10** Repeat [Step 8](#), making sure to do the following:
- Select **Chosen Line**.
 - Specify 123 for the directory number.
 - Select the MAC address for User 2's phone.
-

Setting Up a Shared Phone

You can configure a scenario where two or more subscribers share the same phone, but have their own lines and line display information:

- Each subscriber's line display shows up on their line on the shared phone.
 - Caller ID displays the appropriate subscriber's line display when they call other people.
 - Each subscriber's subscriber record lists the shared phone, their own line, and the other subscriber's line.
-

- Step 1** Select **Provisioning Dashboard > Manage Orders > Order Subscriber Services**. The Search Subscribers for Ordering Services page appears.




Tip Alternatively, you can choose a subscriber from the Choose a Subscriber dialog box. The dialog box appears when you click **Order Subscriber Services** in the Manage Orders pane of the Provisioning Dashboard page (appears when you click the Provisioning Dashboard tab).

- Step 2** Enter subscriber information to search on, then click **Search**. The results of your search appear.
- Step 3** Click the desired subscriber. The product catalog appears.
- Step 4** Click **Phone Service** (see [Ordering Products and Services, page 3-2](#)). Make note of the MAC address of the phone.



Note You must order a phone that supports two lines.

- Step 5** Repeat [Step 1](#) and [Step 3](#) for the second subscriber.
- Step 6** Click **Line on Shared Phone**. In the Target Phone field, select the MAC address of the first subscriber's phone.
- In the subscriber record a Shared icon () appears next to the shared phone.
-

Changing Existing Phones

You can submit an order to replace an existing phone for a subscriber. You can pick the same phone type, or choose from a list of other available phone types for the subscriber. The phone types that subscribers have access to are determined by their subscriber role, and the number of lines on the phone that you are replacing. Phones that do not support the required number of lines are not available during the change order process.

When a phone is changed, all of its lines are transferred to the new phone. The Service Area assigned to the new phone is the same as for the original phone.


Note

Users with the ordering authorization role can change their own phones, or those of other subscribers.


Note

When placing a change phone order, remember the following:

- Any attributes that are not supported by Provisioning Manager and exist on the phone before placing a change phone order will either be reset to their default values or dropped from the phone. For a list of supported attributes in Provisioning Manager, see [Table 6-1, Provisioning Attribute Descriptions](#).
- Only services that are configured for the Domain will be kept after a phone change order is performed. If any other services existed on the phone, they will be dropped. For a description of the service's business rules, see [DefaultServiceName<1-5>, page 6-5](#) and [DefaultServiceURL<1-5>, page 6-5](#).


Tip

You can also use this process to change phone attributes (for example, provisioning attributes through the Advance Order Options) if you select the same phone type and the same MAC address.

Step 1 Select **Provisioning Dashboard > Manage Subscribers > Search Subscriber**. The Search page appears.


Tip

You can access the Search page by clicking **Search Subscribers** in the Manage Subscribers pane of the Provisioning Dashboard page (appears when you click the Provisioning Dashboard tab).

Step 2 Enter subscriber information to search on, then click **Search**. The results of your search appear.

Step 3 Click the desired subscriber. The Subscriber Record page for the selected subscriber appears.

Step 4 In the Products pane, click the phone that you want to change. The option buttons appear.

Step 5 Click **Change**. The Order Entry pane appears, displaying a description of the original order.

Step 6 Click **Continue**. The Configure Product pane appears.

Step 7 From the Phone Type list, select the new phone. Depending on the type of phone, a picture and/or other phone options are displayed.

Step 8 Click **Continue**. The Order Entry Order Confirmation pane appears.

Step 9 Click **Confirm**. The Confirmation of Order message appears.

Step 10 Click **Done**. The order appears in the View Orders pane of the subscriber record.



Note In the Products column, an information icon (i) appears next to the product that you have changed. It indicates that the product has an order running against it. When the order has been processed, the information icon disappears.

Changing Owners of Phones

You can change the ownership of a phone from one subscriber to another subscriber in the same Domain. When you change ownership of a phone, all products associated to the phone (Line, Email, Voicemail, Unified Messaging, and so on) are also changed. You can enter different values for the Email ID and Display Name, if applicable (users with the Advanced Ordering role can make these changes, either to their own phones, or to those of other subscribers). The Service Area assigned to the new owner is the same as the original owner.



Note If you do not change the email ID, email display name, voicemail alias, or voicemail display name, the services on the Call Processor and Unified Message Processor do not change. Only the subscriber records in Provisioning Manager for the old and new owner are changed. But if any of these settings are changed, the voicemail and email accounts on the Call Processor and Unified Message Processor are deactivated and then reactivated.



Note If a phone is shared, you cannot change owners of the phone. The Change Owner button is not displayed.

- Step 1** Select **Provisioning Dashboard > Manage Subscribers > Search Subscriber**. The Search page for subscribers appears.
- Step 2** Enter the search information. Click **Search**.
- Step 3** Click the desired subscriber. The Subscriber Record page for the selected subscriber appears.
- Step 4** In the Products pane, click the phone that you want to change. The product options appear.
- Step 5** Click **Change Owner**. The Review Products pane appears, displaying a list of the associated products.
- Step 6** Click **Continue**. The Choose a New Owner pane appears.



Note If there are open orders against any of the associated products, a warning message appears, and you cannot continue.

- Step 7** In the Choose New Owner field, click the Chooser icon (👤). The Choose a User dialog box appears.
- Step 8** Select a user. The user ID of the new user appears in the Choose New Owner field.
- Step 9** If the phone has voicemail or email associated with it, you can change the following:
- Voicemail alias
 - Voicemail display name

- Email ID
- Email display name

Step 10 Click **Continue**. The Change Owner Confirmation pane appears.

Step 11 Click **Submit**. The Confirmation of Order message appears.

Step 12 Click **Done**. The order appears in the View Orders section of the new owner's subscriber record.

Searching for an Order

You can search for orders using any of the following information:

- Order information:
 - Order number
 - Author—Person who placed the order
 - Order status
 - Extended status—The state that the order is in (for example, being provisioned, waiting for approval, or waiting to ship)
- Subscriber information:
 - Login
 - First or last name
 - Phone number
 - Email
 - Department
 - Domain
- Order date
- Requested delivery date

Step 1 Select **Provisioning Dashboard > Manage Orders > Search Order**. The Search page appears.

Step 2 Enter the search information.

Step 3 Click **Search**.

Ordering Bulk Services

If you are deploying a large number of services, you may want to combine these activities into a single activity. The batch provisioning functionality of Provisioning Manager enables you to create a single batch that contains multiple types of orders. You can also combine multiple types of services into a single batch operation.

You can access the Batch Provisioning page through the Provisioning Dashboard (**Provisioning Dashboard > Manage Orders > Order Bulk Services**).

For detailed information on batch provisioning, see [Using Batch Provisioning, page 5-42](#).

Processing Orders

After you have submitted orders for subscribers, they are approved and then shipped. Depending on how your Provisioning Manager system has been configured, these steps may be automatic or may require processing by users.

There are four possible activities that can be assigned to users during the order processing stage. The activities are assigned based on the rules set for the Domain. For more information on rules, see [Business Rules, page 6-2](#).

The four activities are described in the following:



Note

A Provisioning Manager administrator can change this behavior.

- **Approve orders**—Approves orders before provisioning can occur, and can also reject orders. This user must be assigned the Approval authorization role. This is controlled by the following rules:
 - IsAuthorizationRequiredForAddOrder
 - IsAuthorizationRequiredForChangeOrder
 - IsAuthorizationRequiredForCancelOrder
- **Assignment**—Assigns phones to a phone order by providing the MAC address. This user must be assigned the Assignment authorization role. This is controlled by the rule PhoneAssignmentDoneBy.
- **Shipping**—Ships the order. This user must be assigned the Shipping authorization role. This is controlled by the rule PhoneShippingDoneBy.
- **Receiving**—Done by the user who has the Receiver user role. Indicates that an ordered phone has been received. This is controlled by the rule PhoneReceiptDoneBy.

Approving Orders

If your administrator has enabled approval, orders must be approved. To approve orders, you must be assigned the Approval authorization role (see [Managing Authorization Roles, page 2-5](#)).

After an order is approved or rejected, an email will be sent to the subscriber for whom the order was placed. The following business rules must be enabled for the email to be sent (see [Business Rules, page 6-2](#)):

- EmailSender
- MailHost
- OrderProvisionedEmailTemplate
- OrderRejectedEmailTemplate

The email will be sent to the email account configured for the subscriber (see [Updating User Information, page 2-10](#)).

**Note**

If an order is rejected, the order status is set to Cancel in the subscriber record, and no provisioning is performed. If the order encounters a problem and the user chooses to abort the remainder of the order in the error handling workflow step, then the order status is set to Hold.

Step 1 Select **Provisioning Dashboard > Manage Activities > My Activities**. The My Activities page appears.

Step 2 Click the order that you want to process. The Viewing Activity page appears.

Step 3 Click **Accept**. The Viewing Activity page appears with the Add a Note field added.

**Note**

You can also decline the order, or delegate it to another user or group. If you delegate the activity, the new user or group is assigned the activity.

Step 4 If required, in the Add a Note field, type any additional information that you want to add to the order.

Step 5 Click **Approve**. The My Activities page appears.

Shipping Phones

Depending on how your Provisioning Manager system is configured, this step may not be required. If your administrator has enabled shipping, you must be assigned the Shipping authorization role to perform this procedure (see [Managing Authorization Roles, page 2-5](#)). Shipping phones consists of two parts: assigning MAC addresses and shipping.

Step 1 Select **Provisioning Dashboard > Manage Activities > My Activities**. The My Activities page appears.

Step 2 Select the order that you want to ship. The Viewing Activity screen appears.


Step 3 Click **Accept**. The Viewing Activity Phone Assignment page appears with the **MAC Address** field active.

Step 4 In the **MAC Address** field, type a hexadecimal value. Valid characters are 0-9, A-F, and a-f. The value must be 12 characters in length.

**Note**

The MAC address is available on a sticker on the phone set, and on the phone setting display on the handset.

Step 5 After you have added the required information, click **Step Complete**. The My Activities page appears.

Step 6 Click the Refresh icon (). The order appears in the My Activities page.

Step 7 Click the same order. The Viewing Activities Form page appears.

Step 8 Click **Accept**. The Viewing Activity Form page changes.

Step 9 Click **Step Complete**. If you did not create the order, the order no longer appears on the My Activities page.

Receiving Phones

If your administrator has enabled receiving, you must be assigned the Receiving authorization role to perform this procedure (see [Managing Authorization Roles, page 2-5](#)).

-
- Step 1** Select **Provisioning Dashboard > Manage Activities > My Activities**. The My Activities page appears.
 - Step 2** Click the order that you require. The Viewing Activity Form page appears.
 - Step 3** Click **Accept**. The Viewing Activity page appears.
 - Step 4** Click **Step Complete**. The My Activities page appears with the order no longer in the list.
-

Canceling Products

To cancel products, you submit a cancel order. When you cancel a product, all products associated with it are also canceled.

[Table 3-4](#) lists the individual products that are associated with an orderable product.

Table 3-4 **Orderable Products**

Product	Associated Products
Voicemail	Email, Unified Messaging.
Email	Voicemail, Unified Messaging. Note For Cisco Unity Connection, Voicemail remains even when Email is canceled.
Line	Email, Voicemail, Unified Messaging.
Phone	Line, Email, Voicemail, Unified Messaging. Note Cancelling a phone removes the associated directory numbers from the Cisco Unified Communications Manager.
Unified Messaging	None.

-
- Step 1** In the **Products** pane of the subscriber record (see [Accessing a Subscriber Record, page 3-1](#)) select the product that you want to cancel. The product's options become available.
 - Step 2** Click **Cancel**. The Order Cancel Form pane appears.
 - Step 3** In the Order Cancel Form pane, click **Submit**. The Confirmation of Order message appears.

Step 4 Click **Done**. The order appears in the View Orders pane.



Note In the Products section, an information icon (i) appears next to the product to indicate that the product has an order running against it. When the order has finished processing, the information icon disappears.

After the order has been processed, the canceled products are no longer displayed in the Subscriber Record Details pane.



CHAPTER 4

Managing Inventory

Managing products and inventory is described in the following sections:

- [Managing Phone Inventory, page 4-1](#)
- [Managing Directory Inventory, page 4-4](#)

Managing Phone Inventory

Users assigned the Ordering authorization role can perform the following tasks to manage their phone inventory:

- Add phones—You can add phones that are available to all subscribers, or you can designate phones for specific subscribers.
- Update phone information—You can change phone information.
- Remove phones—You can delete phones from the inventory list.
- Clear expired reservations—If required, you can clear from the inventory all phones whose reservation time has expired.
- View a report—You can view the phone inventory report based on the Domain.



Note

The Provisioning Manager administrator can designate which phones are available in the phone inventory.

The procedures described in this section are for tracking the phone assets in inventory only. No provisioning or activation is performed during these activities. To activate a phone, see [Ordering Products and Services, page 3-2](#).

The Phone Inventory Management page is where you add or change phone information. [Table 4-1](#) describes the fields that appear on the Phone Inventory Management page.

Table 4-1 Phone Inventory Management Page Field Descriptions

Field	Description
Phone	Search function that shows the list of MAC addresses of phones available to update.
Model	List of phone types.

Table 4-1 Phone Inventory Management Page Field Descriptions (continued)


Field	Description
MAC Address	Hexadecimal value that identifies the phone. The MAC address must be 12 characters in length. Valid characters are 0-9, A-F, and a-f. The MAC address is available on a sticker on the phone sets, and on the phone setting display on the handset.
Status	The status of the phone. Possible values are the following: <ul style="list-style-type: none"> • In-use—The phone is being used by a subscriber. • Reserved—The phone is booked for a specific subscriber. • Available—The phone is available, and can be manually or automatically assigned to a subscriber. • Returned—The phone is returned to inventory, but its arrival is not confirmed. • Provisioning—The phone is currently being provisioned.
Reserved For (optional)	Specific user that the phone is reserved for.
Reserved On (optional)	Date that the phone was reserved on. It automatically appears once the phone information has been added or updated.
Reservation Timeout (optional)	Period of time, in days, that a phone will stay reserved in the system. Your Provisioning Manager administrator sets the reservation timeout, therefore this field is not editable. The rule PhoneReservationTimeout determines the phone reservation timeout for a Domain (see Business Rules, page 6-2).

Adding a Phone to Inventory

-
- Step 1** Select **Advanced Setup > Phone**. The Phone Inventory Management page appears.
- Step 2** Complete the fields as required (see [Table 4-1](#)).
- Step 3** Click **Add**. The phone is added to the inventory.
-

Updating Phone Information

You can change phone information. You cannot change a phone that is currently being used (its status is In-use).

-
- Step 1** Select **Advanced Setup > Phone**. The Phone Inventory Management page appears.
- Step 2** In the Phone field, click the Chooser icon (). The Choose a Phone dialog box appears.

**Note**

You can search for the phone based on a complete or partial MAC address. You can use an asterisk (*) as a wildcard character at the beginning and/or end of the MAC address, but not in the middle. Do not specify *SEP* in the search criteria.

-
- Step 3** Select the phone that you require. The phone information is displayed.
- Step 4** Change the phone information as required (see [Table 4-1](#)).
- Step 5** Click **Update**. The phone information is updated.
-


Clearing Expired Phone Reservations

You can clear reservations for phones that have expired, which changes the status of the phones from Reserved to Available.

-
- Step 1** Select **Advanced Setup > Phone**. The Phone Inventory Management page appears.
- Step 2** Click **Clear Expired Reservations**. All expired reservations for phones are cleared.
-

Removing Phones from Inventory

You can remove phones from your inventory. You cannot delete a phone that is currently being used (the phone's status is In-use).

-
- Step 1** Select **Advanced Setup > Phone**. The Phone Inventory Management page appears.
- Step 2** In the Phone field, click the Chooser icon (). The Choose a Phone dialog box appears.
- Step 3** Select the phone that you require. The phone information is displayed.
- Step 4** Click **Remove**. A confirmation message appears, indicating that the phone was removed.
-

Viewing the Phone Inventory Report

You can view a report that provides the following details about the phone inventory in your Domain:

- Phone
- Type
- MAC address
- Status
- Reserved for
- Reserved on

-
- Step 1** Select **Advanced Setup > Phone**. The Phone Inventory Management page appears.
- Step 2** In the *for domain* field, select the Domain for which you want to view the report.
- Step 3** Click **Search Phone**. The Phone Inventory Report appears.



Note In the Phone Inventory Report, when you click Edit next to the phone, the Phone Inventory Management page appears, populated with the phone information.

The Phone Inventory search will be executed only if the logged in your loginb along to a Policy or Administrator group.

Managing Directory Inventory

In most cases, Service Area Directory Number Blocks (DNBs) are used to allocate directory numbers. However, you can explicitly track (store and manage) directory numbers that are associated with each Service Area in Provisioning Manager inventory. You can add and update directory numbers, reserve them for specific users, and clear directory numbers whose designated length of time in the Reserved state has been exceeded.



Note

To change the length of time that a directory number can remain in the Reserved state, you can modify the DNReservationTimeout rule. For more information, see [Business Rules, page 6-2](#).

Directory numbers can be in the following states:

- In-use—The directory number is in use by a subscriber.
- Reserved—The directory number is booked for a specific subscriber for a specific period of time.
- Available—The directory number is available, and can be assigned to a subscriber.

When a line is added, Provisioning Manager allocates directory numbers in using the following process:

1. Checks if a directory has been reserved for the subscriber.
2. Checks for a directory number in the Available state.
3. Checks the Service Area DNB for next available directory number.

In the Service Area component of the Domain, you can create DNBs, not individual directory numbers. After a directory number has been allocated to a subscriber, Provisioning Manager tracks the individual directory number.

Adding Directory Numbers

You can add directory numbers in Provisioning Manager. When you add a directory number, you can specify a status for it and/or reserve it for a particular subscriber.

The same directory number can exist in different Call Processors. When you add a directory number, you must specify both the Call Processor and route partition.

[Table 4-2](#) describes the fields for adding directory numbers.

Table 4-2 Directory Number Inventory Management Page Fields

Field	Description
Directory Number	Directory number.
Call Processor/Route Partition	The Call Processor and route partition that the directory number is added to. Note The directory number is not added at this time. It is reserved for adding to the Call Processor once an order that requires one is received.
Status	The status of the number. Possible values are: In-use—The directory number is currently being used by a subscriber. Reserved—The directory number is booked for a specific subscriber for a specific period of time. Available—The directory number is available, and can be assigned to any subscriber.
(Optional) Reserved For	Specific user that the directory number is reserved for.
(Optional) Reserved On	Date that the directory number was reserved on. It automatically appears after the phone information has been added or updated.

Adding a Directory Number to Inventory

-
- Step 1** Select **Advanced Setup > Directory Number**. The Directory Number Inventory Management page appears.
 - Step 2** Click **Add New Directory Number**. The fields in the right pane become editable.
 - Step 3** Complete the fields as required (see [Table 4-2](#)).
 - Step 4** Click **Save**. A message appears, confirming that the directory number was added.
-

Updating Directory Number Information

You can search for and select a directory number to update. The same directory number can exist in different Call Processors, therefore you are specifying the Call Processor and route partition for the directory number that you require.



Note You cannot change the status of a directory number that is in the In-use state.

- Step 1** Select **Advanced Setup > Directory Number**. The Directory Number Inventory Management page appears.

- Step 2** In the Directory Number field, do one of the following:
- If you know the directory number, enter it and then click **Search**.
 - Search for the directory number, using an asterisk (*) as a wildcard. From the Choose a Directory Number dialog box, click the required directory number.

The directory number information appears.

- Step 3** Click **Update Current Directory Number**. The fields in the right pane become editable.
- Step 4** Complete the fields as required (see [Table 4-2](#)).
- Step 5** Click **Save**. The directory number information is updated.
-

Clearing Expired Reserved Directory Numbers

You can clear reservations for directory numbers that have expired, which places the directory numbers back into the available pool.

To set the number of days that the directory number is reserved for, see [Business Rules, page 6-2](#).

- Step 1** Select **Advanced Setup > Directory Number**. The Directory Number Inventory Management page appears.
- Step 2** Click **Clear Expired Reservations**. A message appears, confirming the number of reserved directory numbers that have been returned to the available pool.
-

Deleting Directory Numbers

You can remove directory numbers from inventory.



Note You cannot delete a directory number that is in use.

- Step 1** Select **Advanced Setup > Directory Number**. The Directory Number Inventory Management page appears.
- Step 2** In the Directory Number field, do one of the following:
- If you know the directory number, enter it and then click **Search**.
 - Search for the directory number, using an asterisk (*) as a wildcard. From the Choose a Directory Number dialog box, click the required directory number.
- The directory number information appears.
- Step 3** Click **Remove**. A message appears, confirming that the directory number has been removed.
-



CHAPTER 5

Administering Infrastructure

Overview

Through its partitioning capabilities, Provisioning Manager provides a secure environment wherein enterprises can deliver services to multiple geographical or organizational segments of their company.

Enterprises can delegate operational control to administrators and/or subscribers. In some cases, a company may be regionally distributed and require a secure environment for each region.

In Provisioning Manager, you can partition a shared environment using Domains. Domains contain information on Call Processors, Unified Message Processors, and Service Areas. Service areas contain information such as route partitions, calling search spaces, device groups, and directory numbers. The combination of these components determines the dial plans that are available to individual subscribers.

When a customer and related phones, lines, and directory numbers are configured in a specific Domain, Provisioning Manager ensures that the associated Route Partition and calling search spaces are used.

You can configure Provisioning Manager so that only customers and subscribers within a given Domain and Service Area have access to a specific subset of operational capabilities. You can further control access by limiting it to services that are available within a Domain, and to the users and resources (for example, Cisco Unified Communications Managers) that are used to deliver the services. An individual company can have multiple Domains depending on its business requirements.

For more information, see the following sections:

- [Configuring Processors, page 5-1](#)
- [Working with Provisioning Manager Domains, page 5-10](#)
- [Working with Service Areas, page 5-16](#)
- [Using Templates—Infrastructure Configuration, page 5-23](#)
- [Using Batch Provisioning, page 5-42](#)

Configuring Processors

This section provides information on how to create and synchronize Call Processors and Unified Message Processors.

This section contains the following sections:

- [Creating Call Processors, page 5-2](#)
- [Changing Call Processor Information, page 5-4](#)

- [Synchronizing Call Processors, page 5-4](#)
- [Creating Unified Message Processors, page 5-6](#)
- [Changing Unified Message Processor Information, page 5-8](#)
- [Synchronizing Unified Message Processors, page 5-8](#)

In Provisioning Manager, you create Call Processors and Unified Message Processors. Call Processors are proxies for each instance of a Cisco Unified Communications Manager or Cisco Unified Communications Manager Express. Unified Message Processors are proxies for each instance of a Cisco Unity, Cisco Unity Express, or Cisco Unity Connection.

Synchronizing the data in the Cisco Unified Communications Manager and Cisco Unity systems with the Call Processors and Unified Message Processors, and then synchronizing with the Domains, populates Provisioning Manager with the existing active users and services, and provides a consolidated view of all of the infrastructure and subscriber information. After a Domain synchronization, you can use Provisioning Manager to directly manage the individual user account. You no longer have to use the underlying Cisco Unified Communications Manager or Cisco Unity systems.

**Note**

Once a Call Processor or Unified Message Processor is created and synchronized, do not change the type of device or version of the device for the processor. For example, if you create a Call Processor for Cisco Unified Communications Manager version 4.1, do not change the Call Processor type to Cisco Unified Communications Manager Express, or the version of Cisco Unified Communications Manager to version 4.2.

Creating Call Processors

A Call Processor is a proxy within Provisioning Manager for a single instance of Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.

[Table 5-1](#) describes the fields for creating a Call Processor.

Table 5-1 *Call Processor Fields*

Field	Description
Name	Call Processor name.
Type	Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.
IP Address	IP address of the Cisco Unified Communications Manager or Cisco Unified Communications Manager Express.
Version	Cisco Unified Communications Manager or Cisco Unified Communications Manager Express version number.
Device Protocol	Protocol used to communicate with the device.
User Name	Username based on the protocol selected.
Password (and confirm)	Password for the Cisco Unified Communications Manager or Cisco Unified Communications Manager Express user name.
Enable Password (and confirm)	The enable password configured on Cisco Unified Communications Manager Express.
Extension Mobility Details (Optional)	

Table 5-1 Call Processor Fields (continued)

Field	Description
Service Name	The name of the Extension Mobility Service configured on a Call Processor.
Service URL	The URL of the Extension Mobility Service configured on the Call Processor: http://<IPAddress>/emapp/EMAppServlet?device=#DEVICENAME# Where <IPAddress> is the name or the IP address of the server where Extension Mobility is installed.



Note After you have created a Call Processor, you cannot delete it.

- Step 1** Select **Infrastructure Configuration > Set Up Devices > Call Processors**. The Call Processor Configuration page appears.
- Step 2** Click **New Call Processor**.
- Step 3** Enter the following information for the Call Processor:
- Name
 - Type
 - IP address
 - Version
 - Device protocol
 - LDAP directory integration— available only for Cisco Unified Communications Manager versions 5.0 and later.



Note This value must exactly match the value configured in the Cisco Unified Communications Manager. If Cisco Unified Communications Manager is integrated with an external LDAP, subscribers are not created through Provisioning Manager; instead they are synchronized through Cisco Unified Communications Manager. When placing an order, if a subscriber is not available on Cisco Unified Communications Manager, the workflow subsystem waits for a pre-defined period of time (24 hours by default) for the subscriber to be available on Cisco Unified Communications Manager and then continues processing the order. The 24-hour period can be configured on Provisioning Manager in the ipt.properties file. Change the following two settings:

- dfc.oem.extdir.retries: 24
- dfc.oem.extdir.retry_interval: 3600
- Username
- Password (and confirm)
- Enable password (and confirm)—only available for Cisco Unified Communications Manager Express
- Extension mobility (if available)—only available for Cisco Unified Communications Manager
- Service name

- Service URL

Step 4 Click **Save**.

Changing Call Processor Information

After a Call Processor is created, you can update its information.



Note

Once a Call Processor is created and synchronized, do not change the type of device or version of the device for the Call Processor. For example, if you create a Call Processor for a Cisco Unified Communications Manager version 4.1, do not change the Call Processor type to a Cisco Unified Communications Manager Express, or the version of the Cisco Unified Communications Manager to version 4.2.

- Step 1** Select **Infrastructure Configuration > Set Up Devices > Call Processors**. The Call Processor Configuration page appears.
- Step 2** Click **View Call Processor**. The Choose a Call Processor dialog box appears.
- Step 3** Select the Call Processor that you require. The View Call Processor page appears.
- Step 4** In the Options pane, click **Update**. The Update Call Processor page appears.
- Step 5** Edit the fields as required. (For explanations of the fields, see [Creating Call Processors, page 5-2](#).)
- Step 6** Click **Save**.
-

Synchronizing Call Processors

To synchronize a Call Processor, you synchronize the infrastructure and subscribers. The infrastructure data are the configurations that are required to exist on Call Processor before Provisioning Manager can configure subscriber services.

You use the infrastructure synchronization to synchronize the infrastructure data with the Call Processor infrastructure data. The infrastructure synchronization retrieves Call Processor information that is used across multiple subscribers.

Examples of the type of infrastructure data stored are described in the following:

- DevicePool—A device pool in Cisco Unified Communications Manager. Listed as VoiceDeviceGroup in the inventory browser.
- CallSearchSpaces—A Calling Search Space (CSS) in Cisco Unified Communications Manager.
- RoutePartitions—A partition in Cisco Unified Communications Manager.

You use the subscriber synchronization to synchronize the subscriber data in Provisioning Manager with the Call Processor subscriber data.

Examples of the type of subscriber data stored are described in the following:

- Directory Number—Directory numbers in Cisco Unified Communications Manager.
- VoiceTerminal—A phone that is not a CTI port in Cisco Unified Communications Manager.

- VoIPInfo—Users must be subscribers in Provisioning Manager. However, this information is not synchronized from a Call Processor.

You can execute the synchronizations independently and in any order. However, to preserve the integrity of the data, it is recommended that you run the synchronizations one immediately after another, and in the following order:

1. Infrastructure synchronization.
2. Subscriber synchronization.

**Note**

After a new Provisioning Manager installation, the infrastructure synchronization must be executed first. You should not run more than one synchronization at a time (Processor or Domain synchronization). Run all synchronizations sequentially.

Step 1 Select **Infrastructure Configuration > Set Up Devices > Call Processors**. The Call Processor Configuration page appears.

Step 2 Click **View Call Processor**. The Choose a Call Processor dialog box appears.

Step 3 Select the Call Processor that you require. The View Call Processor page appears.



Note If the Call Processor was synchronized previously, the details are displayed in the Synchronization section.

Step 4 In the Options pane, click **Synchronize**.

Step 5 You can run an infrastructure or subscriber synchronization. Click **Start** under the synchronization that you desire.

After the synchronization has completed, the Synchronization section displays the synchronization information.

Step 6 Click **Done**.

Deleting a Call Processor

Before a call processor can be deleted, the following conditions must be met:

- No active released orders, including unrecoverable or recoverable errors.
- No active batch projects.
- No synchronizations in progress.

If these conditions are not met, a dialog box will appear when you attempt to delete a call processor, telling you the operation will not start. The system must be in maintenance mode before the delete option is available.

While the call processor deletion is in progress, avoid performing any activities until the call processor deletion is complete.

Step 1 Put Provisioning Manager in maintenance mode (see [Maintenance Mode, page 7-6](#)).

- Step 2** Select **Infrastructure Configuration > Set Up Devices > Call Processors**. The Call Processor Configuration page appears.
- Step 3** Click **View Call Processor**. The Choose a Call Processor dialog box appears.
- Step 4** Select the Call Processor that you require. The View Call Processor page appears.
- Step 5** In the Options pane, click **Delete**. A confirmation dialog appears asking you to confirm the call processor deletion.



Note The system must be in maintenance mode for the **Delete** command to appear in the Options pane.

- Step 6** Click **OK**. The call processor deletion begins, with a progress bar displaying the status of the deletion in the Options pane.

Creating Unified Message Processors

A Unified Message Processor is a proxy within Provisioning Manager for each instance of Cisco Unity, Cisco Unity Express, and Cisco Unity Connection. [Table 5-2](#) describes the fields for creating a Unified Message Processor.



Note The fields that are displayed in the Configure a New Unified Message Processor page depend on the Cisco Unity type you select in the Type field. Not all fields will appear.

Table 5-2 Configuring Unified Message Processor Fields

Field	Description
Name	Name provided by the user.
Type	Type of Cisco Unity (Cisco Unity, Cisco Unity Connection, or Cisco Unity Express).
IP Address	Cisco Unity, Cisco Unity Connection, or Cisco Unity Express system IP address.
Version	The version of the device.
User Name	This field is case sensitive. The user name supplied in this field should match the following: <ul style="list-style-type: none"> Cisco Unity or Cisco Unity Connection 1.1: database username. Cisco Unity Connection 2.0: Administrator user name provided during Cisco Unity Connection installation.
Password (and confirm)	This field is case sensitive. The password supplied in this field should match the following: <ul style="list-style-type: none"> Cisco Unity or Cisco Unity Connection 1.1: database password. Cisco Unity Connection 2.0: Administrator password provided during Cisco Unity Connection installation.
Host Router IP Address	IP address of the router where Cisco Unity Express is installed.

Table 5-2 *Configuring Unified Message Processor Fields (continued)*

Field	Description
Protocol	Protocol used to connect to the device.
(Optional) Host Router User Name	Username of the router where Cisco Unity Express is installed.
(Optional) Host Router Password (and confirm)	Password for the router where Cisco Unity Express is installed.
Host Router Enable Mode Password (and confirm)	Enable mode password for the router where Cisco Unity Express is installed.
(Optional) CUE Line User Name	Username for the Cisco Unity Express module.
(Optional) CUE Line Password (and confirm)	Password for the Cisco Unity Express module.
Service Engine Interface Number	The interface number of the Cisco Unity Express service engine on the router.

- Step 1** Select **Infrastructure Configuration > Set Up Devices > Unified Message Processors**. The Unified Message Processor Configuration page appears.
- Step 2** Click **New Unified Message Processor**. The Configure a New Unified Message Processor page appears.
- Step 3** Enter a name for the Unified Message Processor.
- Step 4** Select the type of Unified Message Processor.
- Step 5** The information that you must enter varies, depending on which type of device you are adding (for explanations of the fields, see [Table 5-2](#)):
- If you are adding a Cisco Unity or Cisco Unity Connection, enter the following:
 - IP address
 - Version
 - Username
 - Password (and confirm)
 - If you are adding a Cisco Unity Express, enter the following:
 - Host router IP address
 - Version
 - Protocol
 - Host router username
 - Host router password (and confirm)
 - Host router enable mode password (and confirm)
 - Cisco Unity Express line username

- Cisco Unity line password (and confirm)
- Service engine interface number

Step 6 Click **Save**.

Changing Unified Message Processor Information

You can update the Unified Message Processor information.



Note

Once a Unified Message Processor is created and synchronized, do not change the type of device or version of the device for the Unified Message Processor. For example, if you create a Unified Message Processor for a Cisco Unity version 4.1, do not change the Unified Message Processor type to a Cisco Unity Connection, or the version of the Cisco Unity to version 4.2.

- Step 1** Select **Infrastructure Configuration > Set Up Devices > Unified Message Processors**. The Unified Message Processor Configuration page appears.
- Step 2** Click **View Unified Message Processors**. The Choose a Unified Message Processor dialog box appears.
- Step 3** Select the Unified Message Processor that you require. The View Unified Message Processor page appears.
- Step 4** In the Options pane, click **Update**. The Update Unified Message Processor page appears.
- Step 5** Edit the fields as required. (For explanations of the fields, see [Table 5-2](#).)
- Step 6** Click **Save**.
-

Synchronizing Unified Message Processors

To synchronize a Unified Message Processor, you synchronize the infrastructure and subscribers. The infrastructure data are the configurations that are required to exist on Unified Message Processors before Provisioning Manager can configure subscriber services.

You use the infrastructure synchronization to synchronize the unified messaging infrastructure data in Provisioning Manager with the Unified Message Processor.

The infrastructure data consists of the following:

- **SubscriberTemplate**—A Subscriber Template in Cisco Unity, Cisco Unity Connection, and the email message processor.
- **UnifiedMessagingFeatureSpecification**—A class of service in Cisco Unity, Cisco Unity Connection, and the email message processor.

You use the subscriber synchronization to synchronize the unified messaging subscriber data in Provisioning Manager with the Unified Message Processor.

The subscriber data consists of the following:

- **UMInfo**—A subscriber in Cisco Unity, Cisco Unity Connection, and Cisco Unity Express in conjunction with the subscriber's voicemail and email information.

- **VoiceMailInfo**—A subscriber in Cisco Unity, Cisco Unity Connection, and Cisco Unity Express in conjunction with **UMInfo** and **EmailInfo**.
- **EmailInfo**—A subscriber in Cisco Unity and Cisco Unity Connection in conjunction with **VoiceMailInfo** and **UMInfo**.

You can execute the synchronizations independently and in any order. However, to preserve the integrity of the data, it is recommended that you run the synchronizations together, and in the following order:

1. Infrastructure synchronization.
2. Subscriber synchronization.

**Note**

After a new Provisioning Manager installation, the infrastructure synchronization must be executed first.

**Note**

You should not run more than one synchronization at a time (Processor or Domain synchronization). Run all synchronizations sequentially.

- Step 1** Select **Infrastructure Configuration > Set Up Devices > Unified Message Processors**. The Unified Message Processor Configuration page appears.
- Step 2** Click **View Unified Message Processor**. The Choose a Unified Message Processor dialog box appears.
- Step 3** Select the Unified Message Processor that you require. The View Unified Message Processor page appears.

**Note**

If the Unified Message Processor was synchronized previously, the details will be displayed in the Synchronization sections.

- Step 4** In the Options pane, click **Synchronize**.
- Step 5** You can run an infrastructure or subscriber synchronization. Click **Start** under the synchronization that you desire.
- After the synchronization has completed, the Synchronization section displays the synchronization information.

**Note**

If during the synchronization of a Cisco Unity Express you encounter device connection errors, close all telnet sessions on the Cisco Unity Express system and restart the synchronization. Cisco Unity Express only allows one telnet session at a time. Provisioning Manager will not be able to synchronize with a Cisco Unity Express device that has another telnet session open.

- Step 6** Click **Done**.

Deleting a Unified Message Processr

Before a Unified Message processor can be deleted, the following conditions must be met:

- No active released orders, including unrecoverable or recoverable errors.

- No active batch projects.
- No synchronizations in progress.

If these conditions are not met, a dialog box will appear when you attempt to delete a Unified Message processor, telling you the operation will not start. The system must be in maintenance mode before the delete option is available.

While the Unified Message processor deletion is in progress, avoid performing any activities until the Unified Message processor deletion is complete.

-
- Step 1** Put Provisioning Manager in maintenance mode (see [Maintenance Mode, page 7-6](#)).
- Step 2** Select **Infrastructure Configuration > Set Up Devices > Unified Message Processors**. The Unified Message Processor Configuration page appears.
- Step 3** Click **View Unified Message Processor**. The Choose a Unified Message Processor dialog box appears.
- Step 4** Select the Unified Message Processor that you require. The View Unified Message Processor page appears.
- Step 5** In the Options pane, click **Delete**. A confirmation dialog appears asking you to confirm the Unified Message processor deletion.



Note The system must be in maintenance mode for the **Delete** command to appear in the Options pane.

- Step 6** Click **OK**. The Unified Message processor deletion begins, with a progress bar displaying the status of the deletion in the Options pane.
-

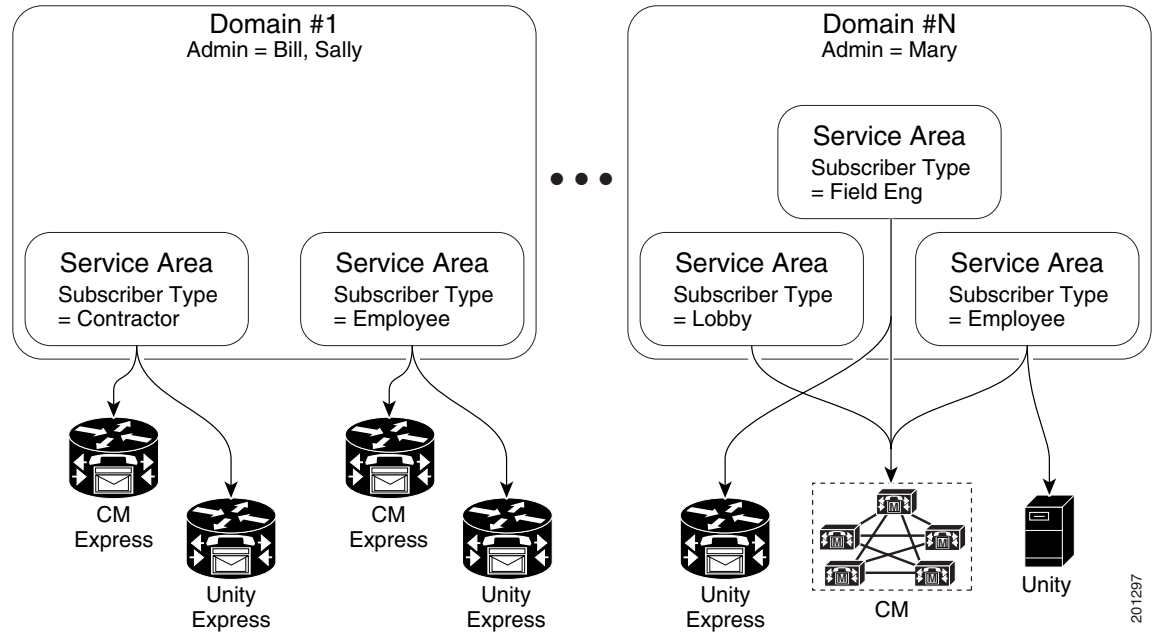
Working with Provisioning Manager Domains

Provisioning Manager introduces the concept of Domains and Service Areas. Domains are groupings of subscribers. For each grouping, one or more system users can be authorized to manage services for subscribers within that Domain. In addition, rules or policies may be set on a Domain; those rules and policies will apply to services for subscribers in that Domain. Common policies can also be applied on operations within a Domain.

To use Domains in Provisioning Manager, you must do the following:

- Create and configure the Domain—Includes assigning a Call Processor and Unified Message Processor (optional).
- Create and configure Service Areas—Includes selecting call search spaces, route partitions and device pool; specifying user types that have access to the Service Area; and configuring Directory Number Blocks.

Figure 5-1 Domain Configuration



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Using the Customer Domain Template

If your implementation will have more than one Domain, you can configure the Customer Domain Template according to the default business rules and user types that you require for your implementation.

When you create new Domains, they inherit the standard set of business rules and user types from the Customer Domain Template. You can then change the business rules and user types as required for each new Domain. Changes made to the Customer Domain Template affect only new Domains created after that point.

The Customer Domain Template is created by default when you install Provisioning Manager. You configure it by specifying business rules and subscriber roles for it the same way that business rules and subscriber roles are specified for new Domains.

Creating a Domain

Table 5-3 describes the fields required for creating a Domain.

Table 5-3 Fields for Creating Domains

Field	Description
Domain ID	ID of the Domain. Valid values are alphanumeric characters (A-Z, a-z, 0-9), underscore (_), hyphen (-), asterisk (*), and period (.).
(Optional) Description	Description of the Domain.

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
- Step 2** In the Options pane, click **New Domain**. The Configure a New Domain page appears.
- Step 3** Complete the fields as required.
- Step 4** Click **Save**. The Update Domain page appears. For configuring a Domain, see [Configuring a Domain, page 5-12](#).
-

Configuring a Domain

After you have created a Domain, you must select one or more Call Processors for it. You can also select one or more Unified Message Processors. The Domain information includes Service Areas, and subscriber roles that have access to your new Domain.



Note You must create the Call Processor and Unified Message Processor before you can add them to a Domain. Call Processors and Unified Message Processors can be shared across Domains.

[Table 5-4](#) describes the fields required for configuring a Domain.

Table 5-4 Domain Configuration Fields

Field	Description
Domain ID	ID of the Domain. Valid characters are: A-Z, a-z, 0-9, . _ - *.
Description	Description of the Domain.
Call Processor	Call Processors for the Domain.
Unified Message Processor	Unified Message Processors for the Domain.
Subscriber Roles	Includes the default Provisioning Manager subscriber roles.
Service Area	Geographic, organizational, or technology boundaries for the Domain.

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
- Step 2** Click **View Domain**. The Choose a Domain dialog box appears.
- Step 3** Select the Domain that you require. The View Domain page appears.
- Step 4** In the Options pane, click **Update**. The Update Domain page appears.
- Step 5** Do the following:
- (Optional) Enter a description.
 - Select a Call Processor.
 - (Optional) Select a Unified Message Processor.

- (Optional) Create a new Service Area for the Domain or edit the selected Service Area.

Step 6 Click **Save**.

Synchronizing Domains

During a Domain synchronization, Provisioning Manager does the following:

- Associates the voicemail, email, and unified messaging data in the Unified Message Processor with the user information in Provisioning Manager.
- Synchronizes the assigned voice mail directory numbers in the Unified Message Processor to those in the Call Processor.
- Synchronizes subscribers and their ordered products with the Provisioning Manager inventory, creates new subscribers, and updates their subscriber records.
- Synchronizes user accounts and updates Provisioning Manager so that users can log in (logins are created only if the self-care rule is enabled; see [CreateSelfCareAccounts, page 6-4](#)).

To fully synchronize a Domain, you must perform the following:

1. For each Call Processor in the Domain, perform an infrastructure and subscriber synchronization.
2. For each Unified Message Processor in the Domain, perform an infrastructure and subscriber synchronization.
3. Perform a Domain synchronization.



Note

If a Call Processor or a Unified Message Processor in the Domain is synchronized, it is recommended that a Domain synchronization also be done.



Note

When running Domain synchronization, remember the following:

- If you use a subscriber synchronization on a Cisco Unified Communications Manager Express to add subscribers to Provisioning Manager, the first name, last name, phone number, and department data is not obtained by Provisioning Manager. The Manage Subscriber page displays Unknown in these fields."

You can update the subscriber information through Provisioning Manager, but be aware that this information will be pushed to the Cisco Unified Communications Manager Express system, and will overwrite any existing information for the user in the ephone description field.

- You should not run more than one synchronization at a time (Domain or Processor synchronization). Run all synchronizations sequentially.
- If a Cisco Unified Communications Manager Express is the only device present in a Domain and Service Area, during Domain synchronization subscribers are not created in Provisioning Manager if the ephone username command is not configured in Cisco Unified Communications Manager Express. Make sure the ephone username command is configured in Cisco Unified Communications Manager Express for all subscribers.

- If more than one matching Service Area is found for a Phone, Soft Phone, Line, EM Line and Device Profile, Provisioning Manager will assign them to the first matching Service Area and give the following warning in the Domain Synchronization: *More than one matching service area found for Device Profile/Phone/Line/EM Line/Soft phone, , put it to the first matching service area.* (See [Viewing a Domain's Synchronization Log, page 5-15](#))
- Device profiles are added to a subscriber's customer record as an **Extension Mobility Access** product, even if the the device profile is not subscribed to the extension mobility service in Cisco Unified Communications Manager.

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
- Step 2** Click **View Domain**. The Choose a Domain dialog box appears.
- Step 3** Select the Domain that you require. The View Domain page appears.



Note If the Domain was synchronized previously, the details are displayed in the Last Synchronization section.

- Step 4** In the Options pane, click **Synchronize**.
- Step 5** Click **Start**.

After the synchronization has completed, the Last Synchronization section displays the synchronization information.

- Step 6** Click **Done**.



Note After the Domain synchronization completes, a log is created, listing the objects that could not be assigned; see [Viewing a Domain's Synchronization Log, page 5-15](#).

Configuring Business Rules for Domain Synchronization

For the Domain synchronization to work properly, you *must* configure at least one of the following rules:

- **AssociateAllUsersInCallProcessor**—If enabled, all user accounts in all of the Call Processors in the Domain are assigned to the Domain being synchronized. This rule overrides the **AssociateUsersByDeptCode** rule.
- **AssociateUsersByDeptCode**—If enabled, the Domain synchronized associates only the Call Processor user accounts whose department code matches one in the list specified in the rule configuration.
- **AssociateAllUsersInUMProcessor**—If enabled, all user accounts in a given Unified Message Processor are associated to a Domain, including those accounts without a corresponding Call Processor user account. If disabled, only user accounts in the given Unified Message Processor that have a matching Call Processor user account are associated.

**Note**

By default, none of these rules are configured. If none of the rules are enabled and a Domain synchronization is run, Provisioning Manager only associates the Call Processor accounts where the department code is the same as the name of the Domain.

Editing a Domain's Provisioning Attributes

You can set provisioning attribute at the Domain level. All provisioning attributes set at other levels (Service Area, subscriber type, Advanced Order) take precedence over provisioning attributes set at the Domain level. For more information on provisioning attributes, see [Configuring Provisioning Attributes, page 6-13](#).

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
 - Step 2** Click **View Domain**. The Choose a Domain dialog box appears.
 - Step 3** Select the Domain that you require. The View Domain page appears.
 - Step 4** In the Options pane, click **Edit Provisioning Attributes**. The Provisioning Attribute Management page appears.
 - Step 5** Update attributes as desired, then click **Done**. (For descriptions of the provisioning attributes, see [Configuring Provisioning Attributes, page 6-13](#).)
-

Viewing a Domain's Synchronization Log

When a Domain synchronization occurs, a log is created. The log lists the products that could not be assigned to a Service Area during a Domain synchronization. This log is replaced each time a Domain synchronization occurs.

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
 - Step 2** Click **View Domain**. The Choose a Domain dialog box appears.
 - Step 3** Select the Domain that you require. The View Domain page appears.
 - Step 4** In the Options pane, click **Synchronize**.
 - Step 5** Click **View Detailed Synchronization Log** at the bottom of the page. The log appears.
-

Deleting a Domain

When a domain is deleted, subscribers, rules, Service Areas, directory number blocks, and subscriber roles are removed. Voice terminal instances and directory number instances in IM are moved to the Global Resources namespace. Before a Domain can be deleted, the following conditions must be met:

- No active released orders, including unrecoverable or recoverable errors.

- No active batch projects.
- No Domain synchronizations in progress.
- No Processor synchronizations in progress.

If these conditions are not met, a dialog box will appear when you attempt to delete a Domain, telling you the operation will not start. The system must be in maintenance mode before the delete option is available.

While the Domain deletion is in progress, avoid performing any activities until the Domain deletion is complete.

-
- Step 1** Put Provisioning Manager in maintenance mode (see [Maintenance Mode, page 7-6](#)).
- Step 2** Select **Infrastructure Configuration > Set Up Deployment > Domains**. The Domain Configuration page appears.
- Step 3** Click **View Domain**. The Choose a Domain dialog box appears.
- Step 4** Select the Domain that you require. The View Domain page appears.
- Step 5** In the Options pane, click **Delete Domain**. A confirmation dialog appears asking you to confirm the domain deletion.



Note The system must be in maintenance mode for the **Delete Domain** command to appear in the Options pane.

- Step 6** Click **OK**. The domain deletion begins, with a progress bar displaying the status of the deletion in the Options pane.
-

Working with Service Areas

You use Service Areas to structure and manage the required IP telephony and messaging services across geographic, organizational, or technology boundaries. The Service Area determines the mappings from the business view of the service to the technology delivering those services. For example, on a Service Area associated to a Cisco Unified Communications Manager, a Service Area defines the device group, route partition, calling search spaces, location, external phone number mask that the products will use within Cisco Unified Communications Manager.

In this case, when you configure a Service Area, you have a list of route partitions that can be assigned to it based on the selected Call Processor for the Service Area. If the Service Area does not have any associated route partition, then the directory numbers and lines are created in the default route partition in Cisco Unified Communications Manager.

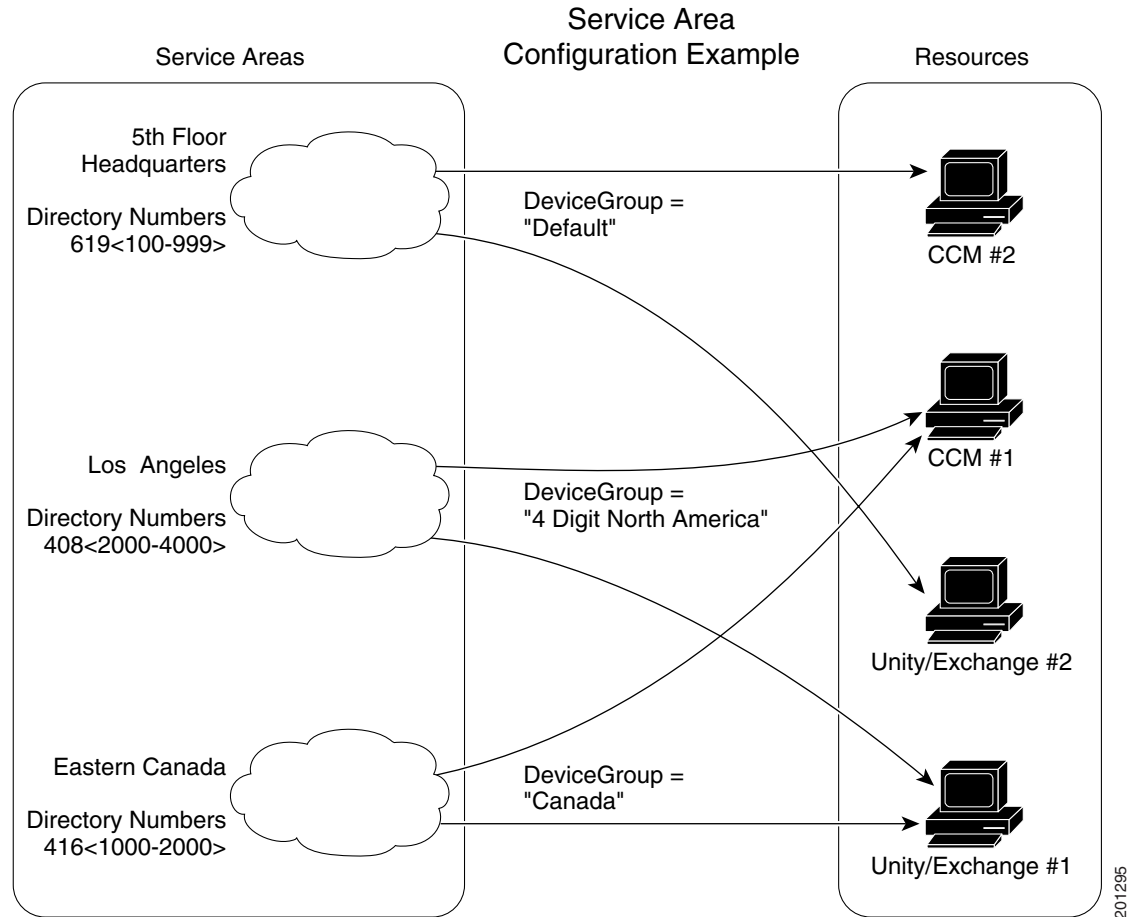
For Cisco Unity and Cisco Unity Connection Unified Message Processors, if you assign a Unified Message Processor to a Service Area, the Subscriber Template (with or without the TTS feature) and Subscriber CoS (with or without the TTS feature) can be configured. These templates can be used for voicemail provisioning of subscribers in the Service Area.



Note For Service Areas with Call Processors based on Cisco Unified Communications Manager Express, only device groups are available for selection. Calling search spaces and route partitions are not available.

Figure 5-2 shows how the associations with Service Area to route partition, device group, calling search spaces, and Domain are established when you create and configure the Service Area. Service areas also determine the key voicemail settings and call forwarding behaviors.

Figure 5-2 Service Area Configuration



Creating Service Areas

Table 5-5 describes the fields for creating a Service Area.

Table 5-5 Fields for Creating a Service Areas

Field	Description
Service Area ID	Name of the Service Area. Valid values are alphanumeric characters (A-Z, a-z, 0-9), underscore (_), hyphen (-), asterisk (*), and period (.).
Domain	The Domain that the Service Area belongs to.

- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.

- Step 2** Click **New Service Area**.
- Step 3** In the Service Area ID field, type the name of the new Service Area.
- Step 4** Select the Domain that you want the Service Area to belong to.
- Step 5** Click **Save**. The Edit Service Area page appears. For configuring a Service Area, see [Configuring Service Areas, page 5-18](#).

Configuring Service Areas

When configuring a Service Area, you can do the following:

- Map the Service Area to the corresponding Call Processor objects by specifying its Call Processors and related objects (for a Cisco Unified Communications Manager, some examples are call search space, route partition, device pool) and Unified Message Processor.
- Specify the subscriber types for the Service Area (only users within a Service Area can order products from it).



Note The Employee subscriber role is the default based on the Domain rule DefaultUserType.

- Create directory number blocks for the Service Area users.
- Set a default phone number mask and/or call forward settings for new lines ordered within the Service Area.



Note

Once a Service Area is assigned to a Domain, it cannot be changed. Further, once a Call Processor or Unified Message Processor is assigned to a Service Area, it cannot be changed.

[Table 5-6](#) describes the fields for configuring a Service Area.

Table 5-6 Service Area Configuration Fields

Field	Description
Service Area ID	Name of the Service Area.
Domain	Domain that the Service Area belongs to.
Call Processor Settings	You will have different settings available to you, depending on the type of device that your Call Processor is.
Name	Call processor for the Service Area (read-only).
Phone Protocol	The protocol to be configured when phones are ordered. You will have an option of either SIP or SCCP for Cisco Unified Communications Manager versions which support SIP. Otherwise SCCP is displayed. Note This field only appears if you selected a Cisco Unified Communications Manager 5.0.
Call Search Space (phone)	Call search space to be assigned to phones and extension mobility profiles. It can be left blank. It only applies to Cisco Unified Communications Manager.

Table 5-6 Service Area Configuration Fields (continued)

Field	Description
Call Search Space (line)	Call search space to be assigned to lines on a phone or extension mobility profile. It can be left blank. It only applies to Cisco Unified Communications Manager.
Common Device Configuration	Configuration of common device settings for the Service Area. It only applies to Cisco Unified Communications Manager. The following settings are controlled by Common Device Configuration: Softkey template User Hold MOH Audio Source Network Hold MOH Audio Source User Locale MLPP Indication MLPP Preemption MLPP Domain Note This field only appears if you selected a Cisco Unified Communications Manager 6.0.
Location	Location to be assigned to a device. It only applies to Cisco Unified Communications Manager.
Route Partition	Route partition for the Service Area. It only applies to Cisco Unified Communications Manager. This is the same as a partition in Cisco Unified Communications Manager.
Device Pool	Device pool for the Service Area.
External Phone Number Mask	Indicate phone number (or mask) that is used to send caller ID information when a call is placed from the Service Area. You can enter a maximum of 30 characters. The Xs represent the directory number and must appear at the end of the pattern. For example, if you specify a mask of 972813XXXX, an external call from extension 1234 displays a caller ID number of 9728131234.
Unified Message Processors	You will have different settings available to you, depending on the type of device that your Unified Message Processor is.
Name	Unified Message Processor for the Service Area (if applicable).
Email Processors	Available only for Cisco Unity Connection and it is integrated with an external Exchange Server for IMAP Client support.
Subscriber Template with TTS Enabled	Subscriber Template to be used to enable unified messaging for a subscriber in the Unified Message Processor.
Subscriber Template without TTS Enabled	Subscriber Template to be used to disable unified messaging for a subscriber in the Unified Message Processor.
Subscriber CoS with TTS Enabled	Class of Service Template to be used to enable unified messaging for a subscriber in the Unified Message Processor. It applies to Cisco Unity and Cisco Unity Connection and is used in conjunction with the Subscriber Template.

Table 5-6 Service Area Configuration Fields (continued)

Field	Description
Subscriber CoS without TTS Enabled	Class of service template to be used to disable unified messaging for a subscriber in the Unified Message Processor. It only applies to Cisco Unity and Cisco Unity Connection and is used in conjunction with the Subscriber Template.
Subscriber Roles	Subscriber roles that have access to the Service Area.
Directory Number Blocks	DNBs for the Service Area (see Creating Directory Number Blocks, page 5-22).

It is recommended that you specify the following for a Service Area before you synchronize the Domain that it belongs to:

- Call Processors
- Call search space
- Route partition
- Device group
- Unified Message Processor
- Location

**Note**

Once a Call Processor or Unified Message Processor is assigned to a Service Area, it cannot be removed.

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.
- Step 2** Click **View Service Area**. The Choose a View Service Area dialog box appears.
- Step 3** Select the Service Area that you require. The View Service Area page appears.
- Step 4** In the Options pane, click **Update**. The Edit Service Area page appears.
- Step 5** During the initial configuration, you can select a Call Processor. After a Call Processor is configured to a Service Area, it cannot be changed.
- Step 6** Update the desired information. For a description of the fields, see [Table 5-6](#).
- Step 7** Click **Save**.
-

Editing a Service Area's Provisioning Attributes

You can set provisioning attribute at the Service Area level. Any provisioning attributes set at the Service Area level take precedence over provisioning attributes set at either the subscriber type or Domain level. For more information on provisioning attributes, see [Configuring Provisioning Attributes, page 6-13](#).

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.
- Step 2** Click **View Service Area**. The Choose a Service Area dialog box appears.

-
- Step 3** Select the Service Area that you require. The View Service Area page appears.
- Step 4** In the Options pane, click **Edit Provisioning Attributes**. The Provisioning Attribute Management page appears.
- Step 5** Update attributes as desired, then click **Done**. (For descriptions of the provisioning attributes, see [Configuring Provisioning Attributes, page 6-13.](#))
-

Deleting a Service Area

Before a Service Area can be deleted, the following conditions must be met:

- No active released orders, including unrecoverable or recoverable errors.
- No active batch projects.
- No Domain synchronizations in progress.
- No Processor synchronizations in progress.

If these conditions are not met, a dialog box will appear when you attempt to delete a service area, telling you the operation will not start. The system must be in maintenance mode before the delete option is available.

While the service area deletion is in progress, avoid performing any activities until the service area deletion is complete.

-
- Step 1** Put Provisioning Manager in maintenance mode (see [Maintenance Mode, page 7-6](#)).
- Step 2** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.
- Step 3** Click **View Service Area**. The Choose a Service Area dialog box appears.
- Step 4** Select the Service Area that you require. The View Service Area page appears.
- Step 5** In the Options pane, click **Delete Service Area**. A confirmation dialog appears asking you to confirm the service area deletion.



Note The system must be in maintenance mode for the **Delete Service Area** command to appear in the Options pane.

- Step 6** Click **OK**. The service area deletion begins, with a progress bar displaying the status of the deletion in the Options pane.
-

Creating Directory Number Blocks

Table 5-7 describes the fields for creating a block of directory numbers.

Table 5-7 Directory Number Blocks Field Description


Field	Description
Prefix	Directory number prefix.
First Number	Starting number for the block of directory numbers.
Last Number	Last directory number in the block.
Minimum Length	The minimum length (number of digits) that a directory number can be before the prefix is added. Used by the system to pad numbers with zeros.

Numbers within a directory number block are relative to the Cisco Unified Communications Manager on which they are being created. Therefore, the prefix portion of a directory number block may or may not map to an NPA/NXX. Also, the prefix portion may or may not reflect e164 DialPlans. Routing via various gateways will ultimately determine how the directory numbers on a specific Cisco Unified Communications Manager are interpreted during a call setup.

For example, if prefix = 408, first number = 0, last number = 100, and minimum length = 4 then the range of the directory number block would be 4080000 through 4080100.

Provisioning Manager handles directory numbers the same way as they are handled by Cisco Unified Communications Manager and Cisco Unified Communications Manager Express. Various models for Direct or Auto-attendant Inward Dialing are also supported.

If a subscriber tries to order a service from a Service Area that does not have a directory number block, the order is paused in the workflow until that directory number block has been added and a Provisioning Manager administrator progresses the activity in the workflow. The order is then allowed to continue. You can also set up individual directory numbers using the Directory Number Inventory component. For more information, see [Managing Directory Inventory, page 4-4](#).

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.
 - Step 2** Click **View Service Area**. The Choose a View Service Area dialog box appears.
 - Step 3** Select the Service Area that you require. The View Service Area page appears.
 - Step 4** In the Options pane, click **Update**. The Edit Service Area page appears.
 - Step 5** In the Directory Number Block(s) field, click the Add icon (). The Add a New Directory Number Block screen appears.
 - Step 6** Complete the fields as required.
 - Step 7** Click **Add**. A message appears on the Edit Service Area screen that confirms it has been updated.
-

Viewing the Directory Number Block Assigned to a Service Area or to the Same Call Processor

-
- Step 1** Select **Infrastructure Configuration > Set Up Deployment > Service Areas**. The Service Area Configuration page appears.
- Step 2** Click **View Service Area**. The Choose a View Service Area dialog box appears.
- Step 3** Select the Service Area that you require. The View Service Area page appears.
- Step 4** In the Directory Number Block field do one of the following:
- To view the Directory Number Block assigned to the Service Area:
 - a. Click the Assigned to this Service Area drop-down list.
 - b. Select the Directory Number Block. The details of the Directory Number Block appear.
 - To view the Directory Number Blocks assigned to the same Call Processor:
 - a. Click the Assigned to the Same Call Processor drop-down list.
 - b. Select the Directory Number block. The details of the Directory Number Block appear.
-

Specifying Default Call Forward Settings

You can set call forward default settings for new phone lines ordered in a Service Area. For example, you can specify a common rollover number, or that all calls be forwarded to the voice mail number that has been configured on the corresponding Cisco Unified Communications Manager.

The following call forward settings are available:

- Forward All—Forwards all calls.
- Forward Busy—Forwards calls that are not answered because the line is busy.
- Forward No Answer—Forwards calls that are not answered.

-
- Step 1** In the Edit Service Area page (for information on accessing this page, see [Configuring Service Areas, page 5-18](#)), click **Update Default Settings**. The Update Default Forwarding Options screen appears.
- Step 2** To forward calls to voice mail, check the box in the Voice Mail column.
- Step 3** To forward calls to another phone number:
- In the Destination field, type the phone number.
 - From the Calling Search Space list, select the calling search space.
- Step 4** Click **Update**. The settings are displayed in the Edit Service Area screen.
-

Using Templates—Infrastructure Configuration

The following topics described the auto-configuration feature of Provisioning Manager:

- [Working with Configuration Templates, page 5-24](#)
- [Creating Configuration Templates, page 5-35](#)

- [Updating an Existing Template, page 5-39](#)
- [Renaming Configuration Templates, page 5-41](#)
- [Creating Copies of Configuration Templates, page 5-41](#)
- [Deleting Configuration Templates, page 5-41](#)
- [Generating a Configuration Using a Template, page 5-42](#)

Working with Configuration Templates

Provisioning Manager enables you to configure Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, and Cisco Unity Express in a consistent way through the use of Configuration Templates. You can use these templates to do the following:

- Configure a new Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, or Cisco Unity Express.
- Performing an incremental rollout on an existing Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, or Cisco Unity Express (for example, deploying a new site or location).
- Roll out a new service across existing customers.

To create Cisco Unified Communications Manager Express and Cisco Unity Express Configuration Templates, you must know the appropriate Cisco IOS configuration commands.

To create Cisco Unified Communications Manager Configuration Templates you add Cisco Unified Communications Manager infrastructure data objects to the Configuration Template. [Table 5-8](#) lists the infrastructure data objects that are available in Provisioning Manager.

**Note**

Not all fields in an infrastructure configuration template are applicable on all Cisco Unified Communications Manager versions.

[Figure 5-3](#) displays an example of a Cisco Unified Communications Manager Configuration Template.

Figure 5-3 Cisco Unified Communications Manager Configuration Template

Setup Configuration Template

Configuration Template: test5

Generate Configuration:

Domain	Service Area and/or Device	Keyword Substitution List
test2	sa_test1 and/or smoketest-ccm	-- None --

Generate Configuration

Template Items: Add a new item

1. CallManager Group Supported

Auto-registration CallManager Group: false

CallManagers: CM_BR-AU-PUB [*smoketest-ccm*]

Name: test5

2. Call Park Supported

CallManager: CM_BR-AU-PUB [*smoketest-ccm*]

Description:

Number/Range: test4

Route Partition:

Exit

Table 5-8 Infrastructure Data Objects

Infrastructure Data Object	Cisco Unified Communications Manager Release					
	4.0.1	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Unified CM group	Y	Y	Y	Y	Y	Y
Call park	Y	Y	Y	Y	Y	Y
Call pickup group	Y	Y	Y	Y	Y	Y
Call search space	Y	Y	Y	Y	Y	Y
Common Device Config	N	N	N	N	N	Y
H323 gateway	Y	Y	Y	Y	Y	Y
Hunt list	Y	Y	Y	Y	Y	Y
Hunt pilot	N	Y	Y	Y	Y	Y
Line group	N	Y	Y	Y	Y	Y
Location	Y	Y	Y	Y	Y	Y
Media resource group	Y	Y	Y	Y	Y	Y
Media resource list	Y	Y	Y	Y	Y	Y
Route group	Y	Y	Y	Y	Y	Y
Route list	Y	Y	Y	Y	Y	Y
Route partition	Y	Y	Y	Y	Y	Y
Route pattern	Y	Y	Y	Y	Y	Y
Translation pattern	Y	Y	Y	Y	Y	Y
Device pool	Y	Y	Y	Y	Y	Y

Table 5-8 *Infrastructure Data Objects (continued)*

Infrastructure Data Object	Cisco Unified Communications Manager Release					
	4.0.1	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Voicemail pilot	Y	Y	Y	Y	Y	Y
Voicemail profile	N	N	Y	Y	Y	Y
Voice region	Y	Y	Y	Y	Y	Y

Table 5-9 through Table 5-26 describe the fields for each infrastructure data object of the Provisioning Manager Configuration Templates.

**Note**

Many of the infrastructure data object fields allow you to add items to the lists and let you move the items up and down in the lists. For information on these operations, see the following:

- [Adding Items to Lists, page 5-39](#)
- [Changing the Order of Items, page 5-40](#)

**Note**

All the data object fields, where you manually enter text, are case sensitive.

Table 5-9 *Unified CM Group Infrastructure Data Object Fields*

Field	Description
Name	Name.
Unified CMs	List of available Cisco Unified Communications Managers.
Auto-Registration CallManager Group	Select Yes if you want this Cisco Unified Communications Manager group to be the default Cisco Unified Communications Manager group when auto-registration is enabled.

Table 5-10 *Call Park Group Infrastructure Data Object Fields*

Field	Description
Number/Range	Enter the call park extension number or a range of numbers.
Description	Optional description.
Route Partition	List of available route partitions.
Unified CM	List of available Cisco Unified Communications Managers.

Table 5-11 *Call Pickup Group Infrastructure Data Object Fields*

Field	Description
Name	Name.
Number	Unique directory number (integers).

Table 5-11 *Call Pickup Group Infrastructure Data Object Fields (continued)*

Field	Description
Description	Optional description.
Route Partition	List of available route partitions.
Available Member Call Pickup Groups	List of available Call Pickup Groups.

Table 5-12 *Call Search Space Infrastructure Data Object Fields*

Field	Description
Name	Name.
Description	Optional description.
Available Route Partitions	List of available route partitions. The route partitions list is not strictly required, but you should provide at least one value. You must reference a route partition that already exists on the Cisco Unified Communications Manager, or define one in the same Configuration Template prior to this call search space.

Table 5-13 *Common Device Config Infrastructure Data Object Fields*

Field	Description
Name	Name.
Softkey Template	Softkey template that determines the configuration of the softkeys on Cisco IP Phones.
User Hold MOH Audio Source	The audio source that plays Music On Hold when the user initiates a hold action.
Network Hold Audio Source	The audio source that plays when the network initiates a hold action.
User Locale	User location associated with the phone user. The user locale identifies a set of detailed information to support users, including language, font, date and time formatting, and alphanumeric keyboard text information.
MLPP Indication	User location associated with the phone user. The user locale identifies a set of detailed information to support users, including language, font, date and time formatting, and alphanumeric keyboard text information.
MLPP Preemption	Specifies whether devices in the device pool that are capable of preempting calls in progress will use the capability when the devices place an MLPP precedence call.
MLPP Domain	Multilevel Precedence and Preemption (MLPP) domain that is associated with this device.

Table 5-14 H323 Gateway Infrastructure Data Object Fields

Field	Description
Name	Device name.
Description	Optional description.
Device Pool	List of available device pools. The device pool specifies a collection of properties for this device including Unified CM Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Common Device Config	Configuration of common device settings, such as the softkey template and user locale.
Call Classification	Determines whether an incoming call that is using this gateway is considered off the network (OffNet) or on the network (OnNet).
Media Resource Group List	Provides a prioritized grouping of media resource groups.
Location	Location for this device.
Media Termination Point Required	If Media Termination Point is used to implement features that H.323 does not support (such as hold and transfer), select Yes.
Retry Video Call As Audio	Applies to video endpoints that receive calls.
Wait for Far End H.245 Terminal Capability Set	Specifies that Cisco Unified Communications Manager needs to receive the far-end H.245 Terminal Capability Set before it sends its H.245 Terminal Capability Set.
MLPP Domain	Multilevel Precedence and Preemption (MLPP) Domain to associate with this device.
Significant Digits Value	Represents the number of final digits that are retained on inbound calls.
Calling Search Spaces	Specifies the collection of Route Partitions that are searched to determine how a collected (originating) number should be routed.
AAR Calling Search Space	Specifies the collection of route partitions that are searched to determine how to route a collected (originating) number that is otherwise blocked due to insufficient bandwidth.
Prefix DN	The prefix digits that are appended to the called party number on incoming calls.
Redirecting Number IE Delivery - Inbound	Selecting Yes accepts the Redirecting Number IE in the incoming SETUP message to the Cisco Unified Communications Manager.
Calling Party Selection	Any outbound call on a gateway can send directory number information. Choose which directory number is sent.
Calling Party Presentation	Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party phone number.
Called Party IE Number Type Unknown	Choose the format for the number type in called party directory numbers.
Calling Party IE Number Type Unknown	Choose the format for the number type in calling party directory numbers.
Called Numbering Plan	Choose the format for the numbering plan in called party directory numbers.

Table 5-14 H323 Gateway Infrastructure Data Object Fields (continued)

Field	Description
Calling Numbering Plan	Choose the format for the numbering plan in calling party directory numbers.
Caller ID DN	Enter the pattern that you want to use for calling line ID, from 0 to 24 digits.
Display IE Delivery	Enables delivery of the display IE in SETUP, CONNECT, and NOTIFY messages for the calling and called party name delivery service.
Redirecting Number IE Delivery - Outbound	Includes the Redirecting Number IE in the outgoing SETUP message from the Cisco Unified Communications Manager to indicate the first redirecting number and the redirecting reason of the call when the call is forwarded.
Packet Capture Mode	Configure this field if you need to troubleshoot encrypted signaling information for the H.323 gateway.
Packet Capture Duration	Configure this field if you need to troubleshoot encrypted signaling information for the H.323 gateway.
SRTP Allowed	Select Yes if you want Cisco Unified Communications Manager to allow secure and nonsecure calls over the gateway.
Version Stamp	Not used
CTI	Not used.

Table 5-15 Hunt Pilot Infrastructure Data Object Fields

Field	Description
Pattern	The hunt pilot, including numbers and wildcards (do not use spaces).
Route Partition	If you want to use a partition to restrict access to the hunt pilot, choose the desired partition.
Description	Optional description.
Numbering Plan	Choose a numbering plan.
Route Filter	If your hunt pilot includes the @ wildcard, you may choose a route filter.
MLPP Precedence	MLPP precedence setting.
Hunt List	Choose the hunt list for which you are adding a hunt pilot.
Urgent Priority	Select Yes to interrupt interdigit timing when Cisco Unified Communications Manager must route a call immediately.
Block Enabled	Enable or disable block.
Release Cause	Dependant on the Block Enabled field. If a release cause is selected, then Block Enabled must be set to True.
Use Calling Party's External Phone Number Mask	Select Yes if you want the full, external phone number to be used for calling line identification (CLID) on outgoing calls.
Calling Party Transformation Mask	Enter a transformation mask value.

Table 5-15 *Hunt Pilot Infrastructure Data Object Fields (continued)*

Field	Description
Calling Party Prefix Digits (Outgoing Calls)	Enter the prefix digits.
Calling Line Presentation	Used as a supplementary service to allow or restrict the originating caller's phone number on a call-by-call basis.
Calling Name Presentation	Used as a supplementary service to allow or restrict the originating caller's name on a call-by-call basis.
Connected Line Presentation	Used as a supplementary service to allow or restrict the called party's phone number on a call-by-call basis.
Connected Name Presentation	Used as a supplementary service to allow or restrict the called party's name on a call-by-call basis.
Called Party Discard Digits	Select the discard digits instructions that you want to associate with this hunt pilot.
Called Party Transformation Mask	Enter a transformation mask value.
Called Party Prefix Digits (Outgoing Calls)	Enter the prefix digits.

Table 5-16 *Line Group Infrastructure Data Object Fields*

Field	Description
Name	Name.
RNA Reversion Timeout	Enter a time, in seconds, after which Cisco Unified Communications Manager will distribute a call to the next available or idle member of this line group or to the next line group if the call is not answered and if the first hunt option, "Try next member; then, try next group in Hunt List" is chosen.
Distribution Algorithm	Select a distribution algorithm, which applies at the line group level.
Hunt Algorithm No Answer	For a given distribution algorithm, select a hunt option for Cisco Unified Communications Manager to use if a call is distributed to a member of a line group that does not answer.
Hunt Algorithm Busy	For a given distribution algorithm, select a hunt option for Cisco Unified Communications Manager to use if a call is distributed to a member of a line group that is busy.
Hunt Algorithm Not Available	For a given distribution algorithm, select a hunt option for Cisco Unified Communications Manager to use if a call is distributed to a member of a line group that is not available.
Directory Numbers	Enter Directory numbers. This must be a Directory Number that already exist in Provisioning Manager.

Table 5-17 Location Infrastructure Data Object Fields

Field	Description
Name	Name.
Audio Kilobits	Enter the maximum amount of audio bandwidth (in kbps) that is available for all audio calls on the link between this location and other locations.
Video Kilobits	Enter the maximum amount of video bandwidth (in kbps) that is available for all video calls on the link between this location and other locations. Use 0 for Unlimited and -1 for None.

Table 5-18 Media Resource Group Infrastructure Data Object Fields

Field	Description
Name	Name.
Description	Optional description.
Available Devices	The available media resources that can be selected.
Is Multicast for MOH Audio	Click Yes to use multicast for Music On Hold Audio.

Table 5-19 Media Resource List Infrastructure Data Object Fields

Field	Description
Name	Name.
Description	Optional description.
Clause	Not Used.
Available Media Resource Group Names	The available media resource groups that can be selected.

Table 5-20 Route Group Infrastructure Data Object Fields

Field	Description
Name	Name.
Available Members	The available devices that can be chosen.
Ports	If the device supports individually configurable ports, choose the port.

Table 5-21 Route Partition Infrastructure Data Object Fields

Field	Description
Name	Name.
Description	Optional description.

Table 5-22 *Route Pattern Infrastructure Data Object Fields*

Field	Description
Pattern	The route pattern, including numbers and wildcards. Must be a valid route pattern.
Route Partition	If you want to use a partition to restrict access to the route pattern, select the desired partition.
Description	Optional description.
Numbering Plan	Numbering plan. The default setting is NANP.
Route Filter	If your route pattern includes the @ wildcard, you may choose a route filter.
MLPP Precedence	MLPP precedence setting.
Gateway or Route List	Choose the gateway or route list for which you are adding a route pattern.
Is Gateway Destination Type Gateway	Indicates whether the destination device is a gateway.
Urgent Priority	If Yes is selected, the interdigit timing is interrupted when Cisco Unified Communications Manager must route a call immediately.
Block Enabled	Enables or disables block.
Release Cause	Dependant on the Block Enabled field. If a release cause is selected, then Block Enabled must be set to True.
Call Classification	Indicates whether the call that is routed through this route pattern is considered either off (OffNet) or on (OnNet) the local network.
Allow Device Override	If Yes is selected, the system uses the Call Classification setting that is configured on the associated gateway or trunk to consider the outgoing call as OffNet or OnNet.
Provide Outside Dial Tone	If Yes is selected, outside dial tone is provided.
Use Calling Party's External Phone Number Mask	Select Yes if you want the full, external phone number to be used for calling line identification (CLID) on outgoing calls.
Calling Party Transformation Mask	Transformation mask value.
Calling Party Prefix Digits (Outgoing Calls)	Prefix digits.
Calling Line ID Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the calling party's phone number on the called party's phone display for this route pattern.
Calling Name Presentation	Determines whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party's name on the called party's phone display for this route pattern.
Connected Line ID Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party's phone number on the calling party's phone display for this route pattern.

Table 5-22 *Route Pattern Infrastructure Data Object Fields (continued)*

Field	Description
Connected Name Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party's name on the calling party's phone display for this route pattern.
Called Party Discard Digits (Outgoing Calls)	Determines the discard digits instructions that you want to associate with this route pattern.
Called Party Transformation Mask	Transformation mask value.
Called Party Prefix Digits (Outgoing Calls)	Prefix digits.

Table 5-23 *Translation Pattern Infrastructure Data Object Fields*

Field	Description
Translation Pattern	Translation pattern, including numbers and wildcards.
Route Partition	Available route partitions.
Description	Optional description.
Dial Plan	Numbering plan.
Route Filter	Optional route filter.
MLPP Precedence	MLPP precedence settings.
Call Search Space	Available calling search spaces.
Block Enabled	Enables or disables block.
Release Cause	Dependant on the Block Enabled field. If a release cause is selected, then Block Enabled must be set to True.
Use Calling Party Transform Mask	Determines whether or not to use the calling party's transformation mask.
Calling Party Transform Mask	Transformation mask value.
Calling Party Prefix Digits (Outgoing Calls)	Prefix digits.
Calling Line ID Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the calling party's phone number on the called party's phone display for this translation pattern.
Calling Name Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the calling party's name on the called party's phone display for this translation pattern.
Connected Line ID Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party's phone number on the calling party's phone display for this translation pattern.
Connected Name Presentation	Determines whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party's name on the calling party's phone display for this translation pattern.

Table 5-23 Translation Pattern Infrastructure Data Object Fields (continued)

Field	Description
Called Party Discard Digits	The discard digits instructions that you want to be associated with this translation pattern.
Called Party Transform Mask	Transformation mask value.
Called Party Prefix Digits (Outgoing Calls)	Prefix digits.

Table 5-24 Voicemail Pilot Infrastructure Data Object Fields

Field	Description
Number	Voicemail pilot number.
Description	Optional description.
Calling Search Space	Available calling search spaces.
Is Default	Indicates whether this pilot number is the default Voice Mail Pilot for the system.


Table 5-25 Voicemail Profile Infrastructure Data Object Fields

Field	Description
Name	Name.
Description	Optional description.
Voicemail Pilot	Available voicemail pilots.
Voicemail Box Mask	The mask that is used to format the voice mailbox number for auto-registered phones.
Is Default	Indicates whether this voicemail profile is the default for the system.

Table 5-26 Voice Region Infrastructure Data Object Fields

Field	Description
Name	Name.
Default Codec	Codec setting. Note For Cisco Unified Communications Manager 4.1 and earlier, the Default Codec field is set to G.711 no matter what selection is made. For later versions of Cisco Unified Communications Manager the value is set to the option selected.

Creating Configuration Templates

-
- Step 1** Select **Infrastructure Configuration > Provision Network > Configuration Templates**. The View Configuration Template page appears.
- Step 2** Click the New icon (). A prompt appears.
- Step 3** Enter a name for the Configuration Template, then click **OK**. The Set up Configuration Template page appears. Now you can add items to the template (see [Adding Items to a Configuration Template, page 5-35](#)).
-

Adding Items to a Configuration Template

This section describes how to add items to a Configuration Template. The items that you add can be either individual objects or existing Configuration Templates.


You can specify unique names for these infrastructure objects based on the Domain and/or Service Area that they belong to by incorporating the variables *DOMAIN* and *SERVICEAREA* in the infrastructure object names. When the Configuration Template is pushed, Provisioning Manager replaces *DOMAIN* and *SERVICEAREA* with the name of the Domain and Service Area, respectively, so that new objects are automatically assigned unique names. This provides the infrastructure elements required for Provisioning Manager partitioning on Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, or Cisco Unity Express.

Configuration is performed in the order that is defined in the Configuration Template. The same dependencies exist for configuring these objects automatically that exist for configuring them manually. Therefore you must ensure that objects are defined in the Configuration Template in the appropriate order. For more information regarding these dependencies and other requirements, refer to the appropriate Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, or Cisco Unity Express documentation.

**Note**

Many of the infrastructure data object fields allow you to add items to the lists and let you move the items up and down in the lists. For information on these operations, see the following:

- [Adding Items to Lists, page 5-39](#)
 - [Changing the Order of Items, page 5-40](#)
-

-
- Step 1** Open the Set up Configuration Template page (see [Creating Configuration Templates, page 5-35](#)).
- Step 2** Click the Choose an Existing Configuration Template icon (). The Choose a Configuration dialog box appears.
- Step 3** Click the desired Configuration Template. The template appears.
- Step 4** Click **Add a new item**. The Add a Configuration Template Item page appears.
- Step 5** In the Add field, do one of the following:
- If you want to create a new item, click **New Item** and go to Step 6.

- If you want to add an existing Configuration Template to this template, click **Existing Configuration Template** then complete the following:
 - a. In the page that appears, select the desired Configuration Template.
 - b. Click **Save**. The Configuration Template is added.
 - c. Go to Step 7.

Step 6 In the Device Type field, select a device type. Your options are Cisco Unified Communications Manager, Cisco Unified Communications Manager Express, or Cisco Unity Express.

- If you select either **CallManager Express** or **Unity Express**, the Commands field appears. Do the following:
 - a. Enter the appropriate Cisco IOS commands. Cisco IOS commands are applied to the device in Configuration Terminal mode for Cisco Unified Communications Manager Express. For Cisco Unity Express, if you want to execute commands in Configuration Terminal mode, you will need to add the command **conf t** to the template first.



Note If your device requires you to enter any submodule mode commands, you must enter the commands to enter and exit the submodule modes. Also, Provisioning Manager does not check the syntax of your commands.

- b. Click **Save**. The item is added to the Configuration Template.
- If you select **CallManager**, do the following:
 - a. In the Item Type list, select an infrastructure data object. The screen refreshes, displaying the options for the object selected. The options will vary depending on the object selected (for descriptions of the fields for each infrastructure data object, see [Table 5-9](#) through [Table 5-26](#)).
 - b. Complete the fields as required. If any drop-down list does not contain an item that you require, see [Adding Items to Lists, page 5-39](#).
 - c. Click **Save**. The item is added to the Configuration Template.

Step 7 You can do one or more of the following:

- Add another item to the Configuration Template; go to Step 4 of this procedure.
- Change the order of the items in the Configuration Template (see [Changing the Order of Items, page 5-40](#)).
- Create a copy of an item in the Configuration Template (see [Creating Copies of Items, page 5-40](#)).
- Exit from the Configuration Template; click **Exit**.



Working with Keyword Substitution

If you are creating Configuration Templates that use the same defined parameter multiple times, you can set up a keyword substitution to simplify the process. Keyword substitution allows you to create a string, and wherever that string appears in a Configuration Template, it is replaced by the value that is associated with it.

Adding a Keyword

Step 1 Open the Set up Configuration Template page (see [Creating Configuration Templates, page 5-35](#)).

Step 2 Do one of the following:

- If you want to add a keyword to a new list, click the New icon () next to Keyword Substitution List.
A new keyword list is created.
- If you want to add a keyword to an existing list, select the list, then click the Edit icon ().
The Keyword List page appears. You can change the keyword list name by clicking the name of the list and in the dialog box that opens, enter a new name, then click **OK**.

Step 3 Enter a string in the Keyword field. The string must start with a dollar sign (\$).



Tip It is also recommended that you place brackets { } around the variable. Keyword replacement fails if additional characters are added to the end of the keyword. The brackets prevent you from mistakenly placing characters at the end of the keyword.

The string should look like the following:

```
$(Region)
```

Step 4 Enter a corresponding value in the Value field. For an example, enter San Jose.

Step 5 Click **Update**.

Step 6 Click **Done**.

Now, in this example, whenever you enter the string \$(Region), the value San Jose will be substituted for the string.


[Figure 5-4](#) shows an example of a Configuration Template that uses keyword substitution. This example creates route partitions and call search spaces with keywords, with a keyword list named *San Jose* that has one keyword (Site = SJ).

Figure 5-4 Configuration Template Using Keyword Substitution


Domain	Service Area and/or Device	Keyword Substitution List
dOne	-- None -- and/or CCM504	San Jose
Generate Configuration		
Template Items: Add a new item		
1. Route Partition	Description: \${Site} Internal Partition Name: \${Site}_Part_Internal	Supported
2. Route Partition	Description: \${Site} Local Partition Name: \${Site}_Part_Local	Supported
3. Route Partition	Description: \${Site} Long Distance Partition Name: \${Site}_Part_LongDistance	Supported
4. Route Partition	Description: \${Site} 911 Partition Name: \${Site}_Part_911	Supported
5. Call Search Space	Description: \${Site} Internal CSS Name: \${Site}_CSS_Internal Route Partitions: \${Site}_Part_911:\${Site}_Part_Internal	Supported
6. Call Search Space	Description: \${Site} Unrestricted CSS Name: \${Site}_CSS_Unrestricted Route Partitions: \${Site}_Part_911:\${Site}_Part_Internal:\${Site}_Part_Local:\${Site}_Part_LongDistance	Supported

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Editing a Keyword

-
- Step 1** Open the Set up Configuration Template page (see [Creating Configuration Templates, page 5-35](#)).
 - Step 2** In the Keyword Substitution List field, select the keyword list that contains the keyword that you want to edit.
 - Step 3** Click the Edit icon (). The Keyword List page appears.
 - Step 4** Change the value as needed.
 - Step 5** Click **Update**.
 - Step 6** Click **Done**.
-


Deleting a Keyword

-
- Step 1** Open the Set up Configuration Template page (see [Creating Configuration Templates, page 5-35](#)).
 - Step 2** In the Keyword Substitution List field, select the keyword list that contains the keyword that you want to delete.
 - Step 3** Click the Edit icon (). The Keyword List page appears.
 - Step 4** Select the box in the Remove column for the keyword you want to delete.
 - Step 5** Click **Update**.
 - Step 6** Click **Done**.
-

Deleting a Keyword List

-
- Step 1** Open the Set up Configuration Template page (see [Creating Configuration Templates, page 5-35](#)).
 - Step 2** In the Keyword Substitution List field, select the keyword list that you want to delete.
 - Step 3** Click the Edit icon (). The Keyword List page appears.
 - Step 4** Click the Delete icon ().
 - Step 5** In the confirmation box, click **OK**.
-

Updating an Existing Template

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Configuration Templates**. The Set up Configuration Template page appears.
 - Step 2** Click the Chooser icon (). The Choose a Configuration Template dialog box appears.
 - Step 3** Select the Configuration Template that you require. The Set up Configuration Template page appears with the information for the template displayed.
 - Step 4** Update the information as required.
-

Adding Items to Lists

The lists in the infrastructure data object fields display the items that already exist on the Cisco Unified Communications Managers only. You can also define items in a Configuration Template that are created when the Configuration Template is pushed. The new items will only exist once the Configuration Template is pushed. These items may be requirements for other items in the same Configuration Template.

For this reason, Provisioning Manager provides the ability to manually add options to the lists. For example, you can define a route partition and a call search space in the same Configuration Template. To define the call search space item in the Configuration Template, you must specify a route partition, but the route partition will not appear as an option in the Configuration Template because it has not been created.

This procedure demonstrates how you could add the name of the route partition to the list in the Configuration Template for the call search space.

-
- Step 1** In the Add a Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the “+” beside the list. A prompt appears.
 - Step 2** Enter a name for the option, then click **OK**. The option appears in the list.
-

Changing the Order of Items

The order of items in a Configuration Template defines the order that they will be auto-configured in when the template is pushed. By clicking the up and down arrows beside the item number, you can change the order of the following:

- Template items.
- Items in infrastructure data object fields—Not all items can be reordered. If the items in a field can be reordered, up and down arrows appear next to the field.

Changing the Order of Template Items

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Up or Down arrow beside the appropriate item. The item is moved.
-

Changing the Order of Items in the Infrastructure Data Object Fields

-
- Step 1** In the Add a Configuration Template page (see [Updating an Existing Template, page 5-39](#)), select the item to move.




Note The item must reside in a reorderable infrastructure data object field.

- Step 2** Click the up or down arrows beside the field. The item is moved.
-


Editing Items

You can edit an item after it is added to a Configuration Template.

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Edit icon () for the item you want to edit. The Edit a Configuration Template Item page appears.
- Step 2** Make the appropriate changes.
- Step 3** Click **Update**.
-


Creating Copies of Items

You can create a duplicate of a template item on a Configuration Template and then edit it. This allows you to create multiple versions of the same item.

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Copy icon () for the item you want to copy.
- A copy of the item is added to the Configuration Template. You can edit the copy as required.
-

Deleting Items

You can delete items from a Configuration Template.


-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Delete icon () beside the item that you want to delete.
- A message appears, asking you to confirm.
- Step 2** Click **OK**. The item is deleted.
-

Renaming Configuration Templates

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Configuration Template name. A dialog box appears.
- Step 2** Type the new name and then click **OK**. The name is changed.
-


Creating Copies of Configuration Templates

You can create a copy of an entire Configuration Template and then edit it as required.

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Copy icon () beside the Configuration Template name.
- A copy of the Configuration Template is created with *_copy* added to the name.
- Step 2** Rename and edit the Configuration Template as required.
-

Deleting Configuration Templates

You can delete Configuration Templates.

-
- Step 1** In the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)), click the Delete icon () beside the Configuration Template name. A message appears, asking you to confirm.
- Step 2** Click **OK**. The Configuration Template is deleted.
-

Generating a Configuration Using a Template

You apply Configuration Templates by pushing them to the appropriate Domain, Service Area, and/or device.

-
- Step 1** Open the Set up Configuration Template page (see [Updating an Existing Template, page 5-39](#)) for the template.
 - Step 2** Select a Domain. The Service Areas and devices lists are populated with the Service Areas and devices that belong to the selected Domain.
 - Step 3** Select a Service Area and/or device. Selecting a Service Area updates the device list, only showing devices that belong to the selected Service Area.



Note After selecting a Service Area or device, each template item displays Supported or Unsupported. If an item is unsupported, it is not a valid template item for the device selected or devices in the Service Area. The template item will not be added to the generated template.

- Step 4** (Optional) select Keyword List. This is only required if the template contains keywords.
 - Step 5** Click **Generate Configuration**. A message appears, asking you to confirm.
 - Step 6** Click **OK**. The configuration is generated and the Batch Project page appears. For information on scheduling the provisioning of the configuration, see [Working with Batch Projects, page 5-45](#).
-

Using Batch Provisioning

Provisioning Manager enables you to create users and provision their services automatically through batch provisioning. Batch provisioning enables you to easily roll out a new office, or transition from legacy systems.

To complete batch provisioning, you must do the following:

1. Create a spreadsheet of users and the services to be provisioned (this typically includes phones and lines), then convert the spreadsheet to a tab-delimited text file called a batch action file.
2. Upload the batch action file into a Provisioning Manager batch project.
3. Run the batch project or schedule it to run later. Provisioning Manager creates the users and provisions the lines and phones based on the data in the file.

You can also view a list of scheduled projects, and the details of the projects that are in progress.

Creating Batch Action Files

Batch action files must contain a single row of column headers. The data columns can be in any order, but must be in a tab-delimited text file. You can compile the data in any text editor, provided that the resulting file conforms to these guidelines. For example, you can create batch files in Microsoft Excel and then export them as tab-delimited files.

Provisioning Manager provides sample files that contain most of the commonly used actions. The sample files are located in the <Installation Directory>/sep/ipt/config/sample/batchProvisioning folder.

Required Columns

Table 5-27 describes the columns that are required for every batch action file.

Table 5-27 Batch Action File Required Columns

Column	Description
Order Type	The order type. Valid options are: <ul style="list-style-type: none"> • Add • Cancel • Change (change only applies for phones)
User ID	Provisioning Manager user ID to provision the order for.
Product Name	The product name. Note that the input varies depending on the order type: <ul style="list-style-type: none"> • Add orders—Must be an orderable product (including bundles), but cannot be a subtype (for example, you would use “Phone” instead of “Cisco 7960”). • Cancel—Can be any product name that appears in the user’s subscriber record. Note that this does not include bundles. Dependent objects are automatically deleted when their parent is deleted. • Change—Phone.
Service Area	Name of the Service Area to order against.

Table 5-28 lists the additional columns that are required when new users are being created.

Table 5-28 Batch Action File Columns for New Users

Column	Description
First Name	User’s first name.
Last Name	User’s last name.
Domain	(Optional) Domain to place the new user in.
Phone Number	(Optional) Phone number for the new user.
Email	(Optional) Email address for the new user.
Department	(Optional) Department for the new user.

Guidelines for Creating Batch Action Files



Note

Sample batch files are provided for you. They are located on the Provisioning Manager system in the <installation directory>/sep/ipt/config/sample/batchProvisioning folder. You can add additional columns to the sample batch files as required.

When creating batch action files, keep in mind the following guidelines:

- If you want the users that will be created to have self-care accounts, you must enable the CreateSelfCareAccounts rule for all applicable Domains.
- MAC Address is required when ProductName is Phone (or a bundle containing a Phone) and Phone Type is not a virtual phone (for example, CTI Port).

- New MAC Address is required when changing phones.
- Object Name is required when cancelling products.
- Cisco Unity devices (Cisco Unity, Cisco Unity Connection, and Cisco Unity Express) do not support all products and services. If the batch action file is configured for a product which is not supported by the device in the specified Service Area, batch provisioning will fail. For a list of supported products and services, see [Table 3-2](#).
- Product attributes that require user input during the manual order entry process are required to successfully complete the equivalent order in a batch project. Examples include:
 - Phone Type—Type of phone (for example, Cisco 7960, Cisco 7912) if ordered product is a Phone or a bundle that contains a Phone.
 - Line Type—Type of line (for example, Auto-Assigned Line or Chosen Line) if ordered product is a Line or a bundle that contains a Line.
 - Directory Number—Required when ProductName is *Line* and Type is *Chosen Line*. Additionally, ordering a product with a dependency that is not met by the order itself (for example, ordering a single Line) requires a column specifying the dependent object. Examples include:
- If the product being ordered has a dependency that is not met by the order itself (for example, a single Line), a column specifying the dependent object is required. Examples include:
 - SelectedPhone—MAC Address of phone to add the line to.
 - SelectedLine—Directory number of the line to add voicemail.
 - SelectedVoicemail—Directory number of the voicemail to add unified messaging to.
 - SelectedEM_Access—Name of the EM_Access (device profile) to add the EM_Line to.

Bundles that contain more than one instance of a base product (for example, phone service with extra line) require their attributes to be specified with a (1), (2), and so on, at the end of the column name. For example, Line Type(1), Directory Number(1).

Speed dial information can be provided directly or indirectly. If provided directly, the expected format is index=number=label, repeated for each speed dial, semicolon delimited, where index is the position of the speed dial (for example; 1, 4, 5, and so on), number is the phone number, and label is the speed dial name (for example, 1=8675306=Jenny;4=888=Voicemail). Alternatively, speed dials can be provided as one set of fields called Speed Dial n (where n is the speed dial position), and a matching set of fields called Speed Dial n Name.

Creating Batch Projects


After you create a batch action file, you must create the batch project that it belongs to. When you upload a batch action file, its contents are converted to batch actions, and the columns that are common to all batch actions in the batch action file are displayed.



Note

You must upload batch action files in the correct order according to any dependencies that exist between the batch actions. For more information about these dependencies, see [Guidelines for Creating Batch Action Files, page 5-43](#).

- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.



- Step 2** Click the New icon (). The Create a New Batch Project page appears.
- Step 3** Type a name and notes for the batch project and then click **Create**. The batch project is created.
You can now upload one or more batch action files to the batch project.
- Step 4** In the Configure a Batch Project screen, click **Upload a Batch Action File**. The Upload a Batch Action file page appears.
- Step 5** Do one of the following
- In the File to Upload field, type the full directory path and file name of the file to be uploaded.
 - Click Browse and then locate and click the file to be uploaded.
- Step 6** Click **Add**. The file is uploaded and its contents are displayed on the Configure a Batch Project page.
- Step 7** You can do one or more of the following:
- Upload another batch action file (repeat this procedure).
 - Run the batch project immediately (see [Running a Batch Project, page 5-46](#)).
 - Schedule the batch project to be run later (see [Scheduling or Rescheduling a Batch Project, page 5-46](#)).
-

Editing Batch Projects

It is currently not possible to edit batch projects or batch action files in Provisioning Manager. Instead, you can update the batch action files manually and then upload them into a new batch project, and delete the batch projects that you no longer require.

Deleting Batch Projects



You can delete batch projects that you no longer require.

- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
- Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
- Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
- Step 4** Click the Delete icon () beside the batch project name. A message appears, asking you to confirm.
- Step 5** Click **OK**. The batch project is deleted.
-




Working with Batch Projects

You can run a batch project immediately, or schedule it to run at a specific time. You can pause a batch project that is currently running, and then restart it or cancel it. After a project has been scheduled, you can pause it, or cancel it entirely. You can also schedule a project to be paused at a later time, for example, if you want to ensure that a project is paused before a scheduled maintenance down-time.

Running a Batch Project


-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
 - Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
 - Step 4** In the Project Schedule pane, next to Project Start Date/Time, click **Now**. A message appears, asking you to confirm.
 - Step 5** Click **OK**. The batch project is started and the status changes to In Progress. (To refresh the screen, click the Refresh icon (). When the batch project has completed, the status changes to Complete.
-

Scheduling or Rescheduling a Batch Project

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
 - Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
 - Step 4** In the Project Schedule pane, next to Project Start Date/Time, click the Chooser icon (). A message appears, asking you to confirm.
 - Step 5** Click **OK**. The Select Date and Time dialog box appears.
 - Step 6** Specify a date and time, as well as a UTC Offset or Location (if required), and then click **Select**. A clock icon () appears in the Status section to indicate that the batch project has been scheduled.
-



Canceling a Batch Project

You can cancel (abort) a batch project that is in progress. Provisioning Manager completes any actions that are in progress, but does not submit any further actions.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
 - Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
 - Step 4** In the Project Schedule pane, click **Abort**. A warning message appears, asking you to confirm.
 - Step 5** Click **OK**. The batch project is canceled.
-



Pausing a Batch Project

When you pause a batch project, Provisioning Manager completes actions that are in progress, but does not submit any more.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
- Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
- Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
- Step 4** In the Project Schedule pane, next to Project Pause Date/Time, click **Pause**. A message appears, asking you to confirm.
- Step 5** Click **OK**. A message appears, indicating that the batch project has been paused.
- Step 6** Click the Refresh icon (). The status of the project is changed to Paused.
- Step 7** You have the following options:
- To restart the batch project, click **Restart**. The batch project is restarted.
 - To cancel the batch project, click **Abort**. The batch project is canceled.
-



Scheduling a Batch Project to Pause

You can schedule a pause in a batch project, for example, if you have scheduled a batch project to start at a later time, but you want to ensure that it stops before a scheduled maintenance down-time.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
- Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
- Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
- Step 4** In the Pause Execution section, next to Project Pause Date/Time, click the Chooser icon (). A message appears, asking you to confirm.
- Step 5** Click **OK**. The Select Date and Time dialog box appears.
- Step 6** Specify a date and time, as well as a UTC Offset or Location, (if required), and then click **Select**. A date and time appear next to Pause Execution, to indicate that the batch project has been scheduled to pause.
-



Canceling a Scheduled Batch Project

You can cancel a scheduled batch project provided that it has not started processing.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
- Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
- Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
- Step 4** In the Project Schedule pane, next to Project Start Date/Time, click the Clear icon (). A message appears, asking you to confirm.
- Step 5** Click **OK**. The schedule is cleared.
-


Canceling a Scheduled Pause for a Batch Project

You can cancel a scheduled pause for a batch project.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
 - Step 3** Select the batch project that you require. The Configure a Batch Project page appears.
 - Step 4** In the Project Schedule section, click the Clear icon (). A message appears, asking you to confirm.
 - Step 5** Click **OK**. The scheduled pause for the batch project is cleared.
-

Viewing the Current Status of a Batch Project

You can view the status of batch projects that are in progress. As a batch project is being run, Provisioning Manager updates the status of the batch actions. You can identify at a glance the actions that are being processed and their status.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.



Note To see details of a single running order within a batch project, administrators can also use My Activities (Provisioning Dashboard > Manage Activities > My Activities) to view each order as it is executed in the workflow.


- Step 3** Select the batch project that you require. The Configure a Batch Project page appears. The Batch Project Actions pane displays the status of each batch action project.



Note After a batch project has completed, you can check the Subscriber Records of the users to verify that orders have been processed.

Viewing Batch Project Details

You can view the details of a batch project by viewing the details of the batch project actions.

-
- Step 1** Select **Infrastructure Configuration > Provisioning Network > Batch Provisioning**. The Configure a Batch Project page appears.
 - Step 2** Click the Chooser icon (). The Choose a Batch Project dialog box appears.
 - Step 3** Select the batch project that you require. The Configure a Batch Project page appears.

- Step 4** In the Batch Project Actions pane, click View in the details column. The View Batch Action Details page appears. This page displays all configured information for the batch project action.
-



CHAPTER 6

Advanced Setup

This chapter described the following advanced setup activities:

- [Configuring Phone Button Templates, page 6-1](#)
- [Business Rules, page 6-2](#)
- [Configuring Provisioning Attributes, page 6-13](#)

Configuring Phone Button Templates

The maximum number of lines allowed on a particular phone type is configured by using the phone button templates.

A phone button template in Cisco Unified Communications Manager specifies the number of lines and speed dials that a phone can have, and where they appear on the phone. Older phone models have fixed templates, meaning the lines map directly to specific buttons on the phone. Newer phone models have more dynamic button structures. For example, the Cisco 7960 has six buttons, each of which can be either a line or a speed dial.

During a Cisco Unified Communications Manager infrastructure synchronization, Provisioning Manager retrieves all phone button templates that have been defined in Cisco Unified Communications Manager. There is always a set of standard phone button templates, therefore every phone type has at least one template.

Viewing the Maximum Number of Lines on Phone Button Templates

You can view the maximum number of lines for each phone button template of a Call Processor. Blank or negative values are treated as unlimited.

-
- Step 1** Select **Advanced Setup > Policies > Phone Button Templates**. The Phone Button Template Configuration page appears.
 - Step 2** Select a Call Processor.
 - Step 3** Click **View Maximum Line Information**. The Phone Button Template Maximum Line Information Form appears.
-

Specifying a Default Phone Button Template for a Phone Type

-
- Step 1** Select **Advanced Setup > Policies > Phone Button Templates**. The Phone Button Template Configuration page appears.
 - Step 2** Select a Call Processor. The page refreshes.
 - Step 3** Select a phone type. The phone type information is displayed.
 - Step 4** Click **Update Template List**. The Phone Button Template Configuration Edit Form appears.
 - Step 5** Select a template and then click **Update**.
-

Displaying the Phone Button Template Option on Orders

You can specify whether or not the option to choose a phone button template is displayed to users when ordering phones by enabling the ChoosePhoneButtonTemplates business rule. If you enable this rule, the system provides users with the option to choose a phone button template when placing an order for a phone. If the rule is disabled, then no option is presented to users during the order process and the default templates as defined in Cisco Unified Communications Manager are used. For more information, see [Business Rules, page 6-2](#).

Business Rules

This section provides details on the standard Provisioning Manager business rules and how to modify them.

It contains the following sections:

- [Business Rule Descriptions, page 6-3](#)
- [Using Business Rules, page 6-10](#)
- [Configuring Business Rules, page 6-12](#)

Provisioning Manager contains a predefined set of business rules that determine how components within Provisioning Manager are used. These business rules control the processing of orders, the behavior of the synchronization processes, and the default values for various objects in the system.

Business rules are applied at a domain level. When you install Provisioning Manager, you configure the business rules in the Customer Domain Template according to your business processes. When you create a new domain, it inherits the standard set of business rules from the Customer Domain Template. You can then change the business rules as required for each new domain. Changes made to the Customer Domain Template affect only new domains created after that point.

In addition to business rules, new domains inherit the default Subscriber Type information, and folders are automatically created in the Inventory Manager Instance Browser for the users, Service Areas, and Voice Terminals that will be placed into that Domain.

Business Rule Descriptions

This section lists and describes the standard business rules in alphabetical order, and provides the default Data and Enabled settings. Rules can be data driven (Provisioning Manager uses the Data field), enabled or disabled driven, or both. The descriptions of the rules indicate which applies.



Note

For some business rules, the Data or Enabled field is not applicable, which is indicated by *N/A*. All user input in fields marked as *N/A* is disregarded by the system.

AssignSoftPhoneName

Assigns a unique name to a softphone that workflow is provisioning. The Call Processor automatically generates the name using the value in the Data field as the prefix, then adds the CTI port counter number + 1. The Call Processor checks if the combination of prefix + CTI port counter number is in use, and if it is, it adds 1 to the CTI port counter number until a unique combination is found.

Data SoftPhone_
Enabled true (n/a)

AssociateAllUsersInCallProcessor

If enabled, during a domain synchronization, all of the user accounts in all of the Call Processors in the domain will be assigned to the domain being synchronized. If disabled, only users whose department is the same as the domain will be assigned to the domain.

Data <blank>
Enabled false

AssociateAllUsersInUMProcessor

If this rule is enabled, all user accounts in a given Unified Message Processor are assigned to a Provisioning Manager Domain. Otherwise, only user accounts in the given Unified Message Processor with a matching Call Processor user account are assigned.

Data <blank>
Enabled false

AssociateUsersByDeptCode

If enabled, Call Processor user accounts are associated to this Provisioning Manager Domain based on their department code value matching one in the specified list of values. The list of department code values should be enclosed in double quotes (") and separated by the delimiter (;). Department code values may contain wildcards (* or %).

For example, if you specify the following in the Data field:

```
"Dept 1";"";"Dept 2"
```

The Call Processor user accounts that belong to Dept 1 or Dept 2, or have no department code set, will be associated to the domain.

If the rule AssociateAllUsersInCall Processor is enabled, it takes precedence over this rule.

Data <blank>

Enabled false

ChoosePhoneButtonTemplates

If enabled, the system provides users with the option to choose a phone button template when placing an order. If disabled, then no option is presented to users during the order process and the default templates as defined in the Cisco Unified Communications Manager will be used.

Data <blank>

Enabled true

CreateSelfCareAccounts

If enabled, the system automatically creates login accounts for new subscribers so that they can submit their own orders. When the rule is disabled, the system still creates login accounts, but those accounts will not have the capability to place orders for themselves.

Data <blank>

Enabled false

DefaultCallManagerPassword

Sets the default password for new Cisco Unified Communications Manager accounts, which are created when a phone or line is ordered for a user for the first time. You can also use this password with a Cisco SoftPhone to gain access to the user-assigned lines. Minimum length is five characters.

Data admin123

Enabled true (n/a)

DefaultCallManagerPIN

Sets the default PIN to be used when a user is activated in Cisco Unified Communications Manager. A user is activated in Cisco Unified Communications Manager the first time a line or phone is ordered for the user. Beyond initially setting the PIN, this rule is not used in Provisioning Manager. Minimum length is 5 characters.

Data 12345

Enabled true

DefaultDeviceProfile

Used for Extension Mobility-enabled phones. The default setting of NONE (or left empty) causes the rule not to be used.

Data NONE

Enabled true (n/a)

DefaultServiceName<1-5>

This rule, paired with the matching numbered DefaultServiceURL4, describes a Cisco Unified Communications Manager service to which all new phones/device profiles will be subscribed. You must specify both in a pair (the DefaultServiceName4 and the matching DefaultServiceURL4), otherwise they will be ignored by the system. You can specify up to 5 pairs. The system always checks for all 5 pairs.

Data <blank>

Enabled false (n/a)

DefaultServiceURL<1-5>

This rule, paired with the matching numbered DefaultServiceName1, describes a Cisco Unified Communications Manager service to which all new phones/device profiles will be subscribed. You must specify both in a pair (the DefaultServiceName1 and the matching DefaultServiceURL1), otherwise they will be ignored by the system. You can specify up to 5 pairs. The system always checks for all 5 pairs.

Data <blank>

Enabled false (n/a)

DefaultUnitySubscriberPassword

Sets the default password for new voicemail accounts on the Cisco Unity system. The workflow uses the Data value as the initial password. In Cisco Unity, this value must be an integer. Cisco Unity rejects trivial values, for example, 12345.

Data 53421

Enabled true (n/a)

DefaultUserType

Specifies the user type that new users are assigned by default. The value of the Data field must contain the name of a valid user type.



Note

This rule should be set to the subscriber role that makes up most of the organization. This will ensure that during domain synchronization most of the users will be set up correctly.

Data Employee

Enabled true (n/a)

DescriptionString

Default description string used on new phones, new user device profiles (EM_Access), and new users. FIRSTNAME, LASTNAME, and EXTENSION are keywords that will be replaced with the users first name, last name, and their extension, respectively.

Data FIRSTNAME LASTNAME EXTENSION

Enabled true (n/a)

DNAutoReservation

If enabled, and if the line is being moved within the same Call Processor, the directory number associated with a canceled line will be automatically reserved for the original owner. Directory numbers can also be selected manually during the order process.

Data <blank>

Enabled false

DNAutoReservationTimeout

Specifies the period of time (days:hours) that the directory number will remain in the Reserved state.

Data 7:0

Enabled true

EmailSender

Contains the email address to use for the From address in Provisioning Manager emails.



Note

This rule must be enabled in order to send emails from Provisioning Manager.

Data shipper@sample.com

Enabled true

ExternalNumberMasks

When enabled, the External Number mask associated with the service area of an order will be used as the External Phone Number Mask value on the line display for lines ordered against this Service Area. For change phone orders, the value for this rule is taken from the previous phone service order. But if the value was not set in the previous order, the Service Area value is used.



Note

This rule accepts the same values as Cisco Unified Communications Manager does for external phone masks.

Data <blank>

Enabled true

IsAuthorizationRequiredForAddOrder

If enabled, an Approver must approve Add orders before provisioning can occur. If disabled, the system automatically approves Add orders.

Data <blank>

Enabled false

IsAuthorizationRequiredForCancelOrder

If enabled, an Approver must approve Cancel orders before provisioning can occur. If disabled, the system automatically approves Cancel orders.

Data <blank>

Enabled false

IsAuthorizationRequiredForChangeOrder

If enabled, an Approver must approve Change orders before provisioning can occur. If disabled, the system automatically approves Change orders.

Data <blank>

Enabled false

LineDisplayString

Template string used to construct the Internal Caller ID display format for the phone line. If disabled, the system will default to FIRSTNAME LASTNAME.

**Note**

For Call Processors, the combination of characters for First Name and Last Name cannot exceed 30 characters. If this limit is exceeded, when you place an order, the Call Processor sends an error.

Data FIRSTNAME LASTNAME

Enabled true

MailHost

Contains the name of the SMTP server that is used for sending Provisioning Manager emails.

**Note**

This rule must be enabled in order to send emails from Provisioning Manager.

Data mail.sample.com

Enabled true

MonitorPhoneReturnEnabled

If enabled, tracks whether phones have been returned by implementing an additional workflow activity that is assigned to the user group specified in the Data field.

Data Shipping

Enabled false

NameDialingInfo

This string is used to construct the auto-attendant name dialing string. FIRSTNAME LASTNAME are replaced, but not the extension.


Note

This feature is available for Cisco Unified Communications Manager version 3.3.3 only.

Data FIRSTNAME LASTNAME

Enabled true

OrderProvisionedEmailTemplate

If enabled, an automated email is sent to the subscriber for whom the order was placed, stating that the order was provisioned.


Note

For this rule to work, the EmailSender and MailHost rules must also be enabled. The value in the data field of this rule, which specifies the template script to use when the email is generated, should not be changed.

Data java://dfc.ipt.im.OrderProvisionedEmailTemplate:buildEmailTemplate

Enabled false

OrderRejectedEmailTemplate

If enabled, an automated email is sent to the subscriber for whom the order was placed, stating that the order was rejected.


Note

For this rule to work, the EmailSender and MailHost rules must also be enabled. The value in the data field of this rule, which specifies the template script to use when the email is generated, should not be changed.

Data java://dfc.ipt.im.OrderProvisionedEmailTemplate:buildRejectionEmailTemplate

Enabled false

PhoneAssignmentDoneBy

Specifies the user group that is responsible for completing the Assignment step of the workflow for a Phone order.

The following are the valid options:

- Receiving
- Shipping
- Assignment

- OrderOwner (the user who initiates the order)
- None (workflow automatically assigns the phone and MAC address)

Data None

Enabled true (n/a)

PhoneReceiptDoneBy

Specifies the user or group of users that is responsible for completing the Receipt step of the workflow for a Phone order. The Receipt step indicates that the user has actually received the phone.

The following are the valid options:

- Receiving
- Shipping
- Assignment
- OrderOwner (the user who initiates the order)
- None (step is skipped)

Data None

Enabled true (n/a)

PhoneReservationTimeout

Specifies the period (in days) that a phone will stay reserved in the system. If disabled, then the phone will be reserved indefinitely.

Data 10

Enabled true (n/a)

PhoneShippingDoneBy

Specifies the user that is responsible for completing the Shipping step of the workflow for a Phone order. The following are the valid options:

- Receiving
- Shipping
- Assignment
- OrderOwner (the user who initiates the order)
- None (step is skipped)

Data None

Enabled true (n/a)

PurgeUponUmRemoval

If enabled, a user's email and voicemail are purged from the system when their Cisco Unity account is removed.



Note

You enable or disable this rule by specifying true or false in the Data field.

Data false

Enabled true (n/a)

SelfCareAccountsDefaultPassword

Specifies the default password for self-care accounts. By default, the user password is the same as the user ID. If you want to specify a different default password, you must specify a default password in the Data field and set Enabled to true.

Data <blank>

Enabled true

TakePrimaryUserInfoFromUMProcessor

If enabled, user and subscriber information is updated from the associated Unified Message Processor account; otherwise it is updated from the Call Processor. When the rule is enabled, you can also specify the Unified Message Processor ID, which takes precedence if a user has accounts on multiple Unified Message Processors. This value can also be left blank to indicate no preference.

Data <blank>

Enabled false

Using Business Rules

When you configure Provisioning Manager, it is critical that you plan how you will use your business rules. This section provides details on the business rules that you must consider depending on how you want the Provisioning Manager components to work. At a minimum, you must consider the following rules:

- AssociateAllUsersInCallProcessor
- CreateSelfCareAccounts
- EmailSender
- IsAuthorizationRequiredForAddOrder
- IsAuthorizationRequiredForCancelOrder
- IsAuthorizationRequiredForChangeOrder
- MailHost
- OrderProvisionedEmailTemplate
- OrderRejectedEmailTemplate
- PhoneAssignmentDoneBy

- PhoneReceiptDoneBy
- PhoneShippingDoneBy

Configuring User Access

When a user cancels a line, do you want to automatically reserve that number for the specific user?

- DNAutoReservation—Toggles the reservation
- DNReservationTimeout—How long to reserve the numbers for

Do you want users to have self-care accounts?

- CreateSelfCareAccounts
- SelfCareAccountsDefaultPassword

What user type should new users get by default?

- DefaultUserType

Do you want the users of a specific domain to manage Phone Inventory?

- DomainPhoneManagement
- PhoneReservationTimeout

Do you want users to manage User Types?

- DomainUserTypeConfiguration

Configuring Domain Synchronization

During synchronization, which domain should Provisioning Manager put Cisco Unified Communications Manager users in?

- AssociateUsersByDeptCode

During a domain synchronization, do you want all of the subscriber accounts in all of the Call Processors in the domain assigned to the domain being synchronized?

- AssociateAllUsersInCallProcessor

During synchronization, do you want all the subscriber accounts in a given Unified Message Processor assigned to a domain?

- AssociateAllUsersInUMProcessor

Configuring Products

What name do you want the CTI ports to have in Cisco Unified Communications Manager?

- AssignSoftPhoneName—See rule for default value

Do you need to reserve directory numbers?

- DNReservationTimeout

Do you need to track if phones have been returned after having been canceled?

- MonitorPhoneReturnEnabled

Configuring Orders

What are the default passwords you want to use for Cisco Unity or Cisco Unified Communications Manager accounts?

- DefaultCallManagerPassword
- DefaultCallManagerPIN
- DefaultUnitySubscriberPassword

Do you want emails sent when an order is rejected or completed? You have the option of not sending any emails.



Note

You must enable both EmailSender and MailHost for email features to work in Provisioning Manager.

- EmailSender
- MailHost
- OrderProvisionedEmailTemplate
- OrderRejectedEmailTemplate

Is authorization required for any type of order?

- IsAuthorizationRequiredForAddOrder
- IsAuthorizationRequiredForCancelOrder
- IsAuthorizationRequiredForChangeOrder

How do you handle phone assignment, shipping, and receiving?

- PhoneAssignmentDoneBy
- PhoneReceiptDoneBy
- PhoneShippingDoneBy

When a voicemail and/or email account is canceled, should messages in the canceled voicemail and/or email accounts be removed as well?

- PurgeUponUmRemoval

Configuring Business Rules

When you change business rules, you must first select the domain. You can change the values for the rules and whether they are enabled. You cannot change the rule names or descriptions.

All business rules have the following properties. You can modify the Data and Enabled fields.

Property	Description
Rule Name	Name of the rule
Description	Detailed description of the rule
Data	Value to be specified for the rule
Enabled	Specifies if the rule is applied. Valid values are true or false.


**Note**

You must review the documentation for each business rule carefully to ensure that you set the Data and Enabled properties appropriately.

**Caution**

Provisioning Manager does not have a default reset capability for business rules. If you change a business rule's settings and later want to return to the default settings, you will have to manually change the settings.

The following procedure uses the AssignSoftPhoneNumber rule as an example of how to change rule properties.

- Step 1** Select **Advanced Setup > Policies > Rules**. The Rule Configuration page appears.
- Step 2** Select the domain that you want to change the rule for. The Select Rule list appears.
- Step 3** Select the rule. The rule information is displayed.
- Step 4** Click the Edit icon (). The Data and Enabled fields become active.
- Step 5** Make the required changes.
- Step 6** Click **Save**. The changes are added to the AssignSoftPhoneNumber rule.

Configuring Provisioning Attributes

Provisioning Manager enables you to configure product attribute settings using provisioning attributes. Provisioning attributes are configuration settings that are applied to a product during activation. You can assign and configure provisioning attributes throughout different levels within Provisioning Manager. At order time Provisioning Manager will take into account the configured provisioning attribute assignments in addition to the service area settings to determine the final product configuration to be provisioned.

Provisioning attributes are assigned at three levels, in the following order:

- Service area
- Subscriber type
- Domain

This means that the provisioning attributes that are defined for a service area will override the provisioning attributes defined for a subscriber type, which override the attributes defined for a domain. You can override the order of precedence by using the Advance Order Options on the Order Entry page (see [Ordering Products and Services, page 3-2](#)). Any provisioning attribute changes you make using Advance Order Options take precedence over the provisioning attributes set for service area, subscriber type, or Domain (to use the Advance Order Options, you must be assigned the advance order role; see [Managing Authorization Roles, page 2-11](#)).

**Note**

You must have administration privileges to configure the content of the provisioning attributes (see [Managing Authorization Roles, page 2-11](#)).

Table 6-1 describes all possible provisioning attributes. Depending on your Provisioning Manager setup, all attributes may not be available to you.

Table 6-2 describes at which level (domain, subscriber type, or service area) each provisioning attribute can be assigned.

Step 1 Select **Advanced Setup > Policies > Provisioning Attributes**. The Launching Provisioning Attributes Management page appears.

Step 2 Do one of the following:

- Click **Domain**; then, from the Choose a Domain dialog box, select the domain for which you want to configure the provisioning attributes.
- Click **Service Area**; then, from the Choose a Service Area dialog box, select the service area for which you want to configure the provisioning attributes.
- Choose a subscriber role:
 - a. From the Subscriber Role list, choose the domain or domain template where the subscriber exists.
 - b. Click **Choose Subscriber Role**. The Choose a Subscriber Role dialog box appears.
 - c. Click the desired subscriber role.

A Provisioning Attribute Management page appears. The specific page that appears depends on which option you chose. Table 6-1 list all possible provisioning attributes. Depending on your Provisioning Manager setup, and the version of your Call Processor or Unified Message Processors, all attributes may not be available to you. Table 6-3 and Table 6-4 list which attributes are available for each version of the Call Processors and Unified Message Processors, respectively.





Note

The Provisioning Attribute Management page for each object (domain, service area, and subscriber role), also can be accessed when configuring the respective object. For more information, see the following:

- [Editing Provisioning Attributes for a Subscriber Role Type, page 2-8](#)
 - [Editing a Domain's Provisioning Attributes, page 5-15](#)
 - [Editing a Service Area's Provisioning Attributes, page 5-20](#)
-

Step 3 Click the plus sign next to the attribute headings that contain the provisioning attributes that you want to configure. The attributes are displayed.

Step 4 Do one of the following:

- If you want to change the attribute settings, click the Edit icon () and make the appropriate changes.
- If you want to delete the attribute, click the Delete icon ()

Step 5 When finished, click **Done**.

Table 6-1 Provisioning Attribute Descriptions

Attribute	Description
AAR Calling Search Space	Automated alternate routing (AAR) calling search space.
AAR Group	Automated alternate routing (AAR) group.
Authentication Server URL	The URL that the phone uses to validate requests that are made to the phone web server.
Auto Answer	Set auto-answer options.
Auto Line Select	Enable automatic line selection.
Busy Trigger	The maximum number of calls to be presented at the line before incurring a busy signal or being sent to call forwarding.
Built in Bridge	Enable or disable the built-in conference bridge for the barge feature.
Call Pickup Group	Directory number that allows users to pick up incoming calls within their own group.
Forward All	Forward all calls.
Forward Busy External	Forwards the calls when the line is in use and the busy trigger setting is reached. This is for external calls.
Forward No Answer External	Forwards the call when the phone is not answered and it reaches the configured no answer ring duration. Also, if the destination is unregistered. This is for external calls.
Forward Busy Internal	Forwards the calls when the line is in use and the busy trigger setting is reached.
Forward No Answer Internal	Forwards the call when the phone is not answered and it reaches the configured no answer ring duration. Also, if the destination is unregistered.
Forward No Coverage External	Forwards the call when either it exhausts or times out, and the associated hunt-pilot for coverage specifies Use Personal Preferences for its final forwarding. This is for External calls.
Forward No Coverage Internal	Forwards the call when either it exhausts or times out, and the associated hunt-pilot for coverage specifies Use Personal Preferences for its final forwarding. This is for internal calls.
Forward Unregistered External	Reroutes calls placed to a temporarily unregistered destination. This is for External calls.
Forward Unregistered Internal	Reroutes calls placed to a temporarily unregistered destination. This is for internal calls.
Calling Search Space	Specifies the partitions that devices can search when attempting to complete a call.
CME Line Configuration Template	Free-form text field to input Cisco IOS commands that will be executed in Line configuration mode on the Cisco Unified Communications Manager Express.
CME Phone Configuration Template	Free-form text field to input Cisco IOS commands that will be executed in Phone configuration mode on the Cisco Unified Communications Manager Express.

Table 6-1 Provisioning Attribute Descriptions (continued)

Attribute	Description
Common Device Configuration	Configuration of common device settings, such as the softkey template and user locale. Note This attribute is not available when using the Edit Provisioning Attributes link (see Editing a Service Area's Provisioning Attributes, page 5-20) or through the Provisioning Attribute Management page . You can only update it in the Update Service Area page (see Configuring Service Areas, page 5-18).
CUE User Configuration Template	Free-form text field to input CLI commands for the EXEC and configuration modes for Cisco Unity Express. Include the appropriate CLI commands to enter and exit the configuration mode.
CUE Voicemail Configuration Template	Free-form text field to input CLI commands for the mailbox configuration mode for Cisco Unity Express.
Description	Description to identify the purpose of device.
Device Pool	Device pool to be used by device.
Device Security Mode	The security mode (authentication or encryption) to be used between the device and the Cisco Unified Communications Manager.
Directory URL	URL of the server from which the phone obtains directory information.
Disable Speakerphone	Disable device speakerphone.
Disable Speakerphone And Headset	Disable device speakerphone and headset.
Forward All - Calling Search Space ¹	Call-forward all call search space.
Enable Mobile Voice Access	Enable mobile voice access for the subscriber on the currently selected CallProcessor.
Enable Mobility	Enable mobility feature for the subscriber on the currently selected CallProcessor.
Forwarded Call Information - Caller Name	Causes the caller name to display upon call forward.
Forwarded Call Information - Dialed Number	Causes the number that was redirected to display upon call forward.
Forwarded Call Information - Dialed Number	Causes the caller number to display upon call forward.
Forwarded Call Information - Redirected Number	Causes the original dialed number to display upon call forward.
Forwarding Delay	Indicates whether the internal switch begins forwarding packets between the PC port and the switch port on the phone when the phone becomes active.
Idle URL	The URL that the phone displays when the phone has not been used for the time specified in the Idle URL timer.

Table 6-1 Provisioning Attribute Descriptions (continued)

Attribute	Description
Generic CLI Commands	Free-form text field to input CLI commands that will be executed on the applicable processor.
Generic IOS Commands	Free-form text field to input Cisco IOS commands that will be executed on the applicable processor.
Gratuitous ARP	Disable the acceptance of Gratuitous ARP packets, which devices use to announce the presence of the device on the network.
Idle Timer	Amount of time, in seconds, that elapses before the URL specified in the Idle URL option appears.
Information URL	The URL of the help text that appears on the phone.
Location	Location to use. Specifies the total bandwidth that is available for calls to and from this location.
Max Desk Pickup Wait Time	Maximal desk pickup wait time.
Maximum Number of Calls	Determines the maximum number of calls to be presented at the line.
Media Resource Group List	Media Resource Group List to use, otherwise phone defaults to that specified in device pool. A Media Resource Group List comprises a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, from the available media resources according to the priority order that is defined in a Media Resource Group List.
Message Lamp Waiting Policy	Configures the handset lamp illumination policy.
Messages	Configures the messages URL.
MLPP Calling Search Space	The calling search space to associate with the alternate party target (destination) number.
MLPP Domain	Multilevel Precedence and Preemption (MLPP) domain that is associated with this device.
MLPP Indication	Specifies whether a device that is capable of playing precedence tones will use the capability when it places an MLPP precedence call.
MLPP No Answer Ring Duration	Alternate-party no-answer ring duration.
MLPP Preemption	Specifies whether devices in the device pool that are capable of preempting calls in progress will use the capability when the devices place an MLPP precedence call.
MLPP Target	Alternate-party no-answer target.
Module 1	Expansion module to use with device.
Module 1 Load Name	Expansion module 1 load name.
Module 2	Expansion module to use with device.
Module 2 Load Name	Expansion module 2 load name.
Network Hold Audio Source	The audio source that plays when the network initiates a hold action.

Table 6-1 Provisioning Attribute Descriptions (continued)

Attribute	Description
Network Locale	Network location associated with the phone user. The network location identifies a set of detailed information that supports the phone in a specific location, including definitions of the tones and cadences used by the phone.
PC Port	Indicates whether the PC port on the phone is enabled or disabled.
PC Voice VLAN Access	Indicates whether the phone allows a device attached to the PC port to access the voice VLAN. Setting this option to No (disabled) prevents the attached PC from sending and receiving data on the voice VLAN.
Phone Load Name	The custom software for the Cisco IP Phone. Value overrides the default value for the current model.
Port Ranges for IP Communicator	Port ranges for IP Communicator.
Privacy	Enable or disable the capability of users with phones that share the same line to view call status and to interrupt the call.
Proxy Server URL	URL used to proxy HTTP requests for access to non-local host addresses from the phone HTTP client.
Remote Destination Limit	Maximal number of remote destinations for the subscriber on the currently selectedCallProcessor.
Retry Video Call As Audio	Applies only to video endpoints that receive a call. If this phone receives a call that does not connect as video, the call tries to connect as an audio call.
Ring Setting (Phone Active)	The ring setting that is used when a phone has another active call on a different line.
Ring Setting (Phone Idle)	The ring setting that is used when a phone has another active call on a different line.
Route Partition	The partition to which the directory number belongs. Note This attribute is not available when using the Edit Provisioning Attributes link (see Editing a Service Area's Provisioning Attributes, page 5-20) or through the Provisioning Attribute Management page . You can only update it in the Update Service Area page (see Configuring Service Areas, page 5-18).
Services URL	URL for Cisco IP Phone Services.
Settings Access	Device settings access.
Softkey Template	Softkey template that determines the configuration of the softkeys on Cisco IP Phones.
Speed Dial Info	Speed dial settings on device.
Subscriber CoS without TTS enabled	Class of service template used when disabling Unified Messaging on subscriber account in the Unified Message Processor.

Table 6-1 Provisioning Attribute Descriptions (continued)

Attribute	Description
Subscriber CoS with TTS Enabled	Class of service template used when enabling Unified Messaging subscriber account in the Unified Message Processor.
Subscriber Template without TTS Enabled	Subscriber template used when disabling Unified Messaging on subscriber account in the Unified Message Processor.
Subscriber Template with TTS Enabled	Subscriber template used when enabling Unified Messaging on subscriber account in the Unified Message Processor.
User Hold Audio Source	The audio source that plays when a user initiates a hold action.
User Locale	User location associated with the phone user. The user locale identifies a set of detailed information to support users, including language, font, date and time formatting, and alphanumeric keyboard text information.
Video Capabilities	Indicates whether the phone can participate in video calls when connected to an appropriately equipped PC.
Voicemail Profile	Voicemail profiles assigned to a directory number.
Web Access	Indicates whether the phone's internal web server is enabled (Yes) or disabled (No). When disabled, you cannot access a phone's web pages.

1. This attribute is not available when using the Edit Provisioning Attributes link (see [Editing a Service Area's Provisioning Attributes, page 5-20](#)) or through the Provisioning Attribute Management page. You can use the Update Default Settings button on the Service Area Configuration page (see [Configuring Service Areas, page 5-18](#)) to configure the attribute, or you can use the Advanced Order Options button when placing an order (see [Ordering Products and Services, page 3-2](#)).

Table 6-2 Provisioning Attribute Assignment Levels

Products	Provisioning Attributes	Domain	User Type	Service Area
Enable Mobility Support	Enable Mobile Voice Access	x	x	x
	Enable Mobility	x	x	x
	Max Desk Pickup Wait Time	x	x	x
	Remote Destination Limit	x	x	x

Table 6-2 Provisioning Attribute Assignment Levels (continued)

Products	Provisioning Attributes	Domain	User Type	Service Area
Extension Mobility Line	AAR Group			x
	Auto Answer	x	x	x
	Busy Trigger	x	x	x
	Call Pickup Group			x
	Calling Search Space			
	Display (Internal Caller ID)			
	External Phone Number Mask	x	x	
	Forward All - Calling Search Space			x
	Forward All - Destination	x	x	x
	Forward All - Voicemail	x	x	x
	Forward Busy - Calling Search Space			x
	Forward Busy - Destination	x	x	x
	Forward Busy - Voicemail	x	x	x
	Forward No Answer - Calling Search Space			x
	Forward No Answer - Destination	x	x	x
	Forward No Answer - Voicemail	x	x	x
	Forwarded Call Information - Caller Name			x
	Forwarded Call Information - Caller Number			x
	Forwarded Call Information - Dialed Number			x
	Forwarded Call Information - Redirected Number			x
	Line Text Label			
	Maximum Number of Calls	x	x	x
	Message Waiting Policy	x	x	x
	MLPP Calling Search Space			x
	MLPP No Answer Ring Duration	x	x	x
	MLPP Target	x	x	x
	Network Hold Audio Source			x
	No Answer Ring Duration	x	x	x
	Ring Setting (Phone Active)			x
	Ring Setting (Phone Idle)			x
	User Hold Audio Source			x
	Voicemail Profile			x
Route Partition				
Network Locale	x	x	x	
Settings Access	x	x	x	
User Hold Audio Source			x	

Table 6-2 *Provisioning Attribute Assignment Levels (continued)*

Products	Provisioning Attributes	Domain	User Type	Service Area
Extension Mobility Access	MLPP Domain	x	x	x
	MLPP Indication	x	x	x
	MLPP Preemption	x	x	x
	Expansion Module 1	x	x	x
	Expansion Module 2	x	x	x
	Privacy	x	x	x
	Softkey Template			x
	Speed Dial Info	x	x	x
	User Hold Audio Source			x
	User Locale	x	x	x

Table 6-2 Provisioning Attribute Assignment Levels (continued)

Products	Provisioning Attributes	Domain	User Type	Service Area
Line	AAR Group			x
	Auto Answer	x	x	x
	Busy Trigger	x	x	x
	Call Pickup Group			x
	Calling Search Space			
	Display (Internal Caller ID)			
	External Phone Number Mask	x	x	
	Forward All			x
	Forward All - Calling Search Space			x
	Forward All - Destination	x	x	x
	Forward All - Voicemail	x	x	x
	Forward Busy - External			x
	Forward Busy - Calling Search Space			x
	Forward Busy - Destination	x	x	x
	Forward Busy - Voicemail	x	x	x
	Forward No Answer - External			x
	Forward No Answer - Calling Search Space			x
	Forward No Answer - Destination	x	x	x
	Forward No Answer - Voicemail	x	x	x
	Forwarded Call Information - Caller Name			x
	Forwarded Call Information - Caller Number			x
	Forwarded Call Information - Dialed Number			x
	Forwarded Call Information - Redirected Number			x
	Generic Line IOS Commands	x	x	x
	Line Text Label			
	Maximum Number of Calls	x	x	x
	Message Waiting Policy	x	x	x
	MLPP Calling Search Space			x
	MLPP No Answer Ring Duration	x	x	x
	MLPP Target	x	x	x
	Network Hold Audio Source			x
	No Answer Ring Duration	x	x	x
	Ring Setting (Phone Active)			x
	Ring Setting (Phone Idle)			x
	User Hold Audio Source			x
	Voicemail Profile			x
	Route Partition			x

Table 6-2 Provisioning Attribute Assignment Levels (continued)

Products	Provisioning Attributes	Domain	User Type	Service Area
Phone	AAR Calling Search Space			X
	Authentication Server URL	X	X	X
	Auto Line Select	X	X	X
	Built in Bridge	X	X	X
	Calling Search Space			
	Common Device Configuration			X
	Description			
	Device Pool			
	Device Security Mode			X
	Directory URL	X	X	X
	Disable Speakerphone	X	X	X
	Disable Speakerphone and Headset			X
	Enable Extension Mobility Feature	X	X	X
	Expansion Module 1	X	X	X
	Expansion Module 2	X	X	X
	Forwarding Delay	X	X	X
	Gratuitous ARP	X	X	X
	Generic Phone IOS Commands	X	X	X
	Idle URL	X	X	X
	Idle Timer	X	X	X
	Information	X	X	X
	Location			
	Media Resource Group List			X
	Messages	X	X	X
	MLPP Domain	X	X	X
	MLPP Indication	X	X	X
	MLPP Preemption	X	X	X
	Module 1 Load Name	X	X	X
	Module 2 Load Name	X	X	X
	Network Hold Audio Source			X
	Network Locale			X
	PC Port	X	X	X
PC Voice VLAN Access	X	X	X	

Table 6-2 Provisioning Attribute Assignment Levels (continued)

Products	Provisioning Attributes	Domain	User Type	Service Area
Phone (continued)	Phone Load Name	x	x	x
	Port Ranges for IP Communicator	x	x	x
	Privacy	x	x	x
	Proxy Server URL	x	x	x
	Retry Video Call as Audio	x	x	x
	Settings Access	x	x	x
	Softkey Template			x
	Speed Dial Info	x	x	x
	User Hold Audio Source			x
	User Locale	x	x	x
	Video Capabilities	x	x	x
	Web Access	x	x	x
Voice Mail	CUE User Configuration Template			x
	CUE Voicemail Configuration Template			x
Unified Messaging	UM Disabling Class Of Service Template			x
	UM Enabling Class Of Service Template			x
	UM Disabling Subscriber Template			x
	UM Enabling Subscriber Template			x

Table 6-3 Supported Call Processor Provisioning Attributes

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Extension Mobility Line	AAR Group	N/A	Y	Y	Y	Y	Y	Y
	Auto Answer	N/A	Y	Y	Y	Y	Y	Y
	Busy Trigger	N/A	Y	N	Y	Y	Y	Y
	Call Pickup Group	N/A	Y	Y	Y	Y	Y	Y
	Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Display (Internal Caller ID)	N/A	Y	Y	Y	Y	Y	Y
	External Phone Number Mask	N/A	Y	Y	Y	Y	Y	Y
	Forward All - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward All - Destination	N/A	Y	Y	Y	Y	Y	Y
Forward All - Voicemail	N/A	Y	Y	Y	Y	Y	Y	

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Extension Mobility Line (continued)	Forward Busy - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - Destination	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - Voicemail	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Destination	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Voicemail	N/A	Y	Y	Y	Y	Y	Y
	Forwarded Call Information - Caller Name	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Caller Number	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Dialed Number	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Redirected Number	N/A	N	Y	Y	Y	Y	Y
	Maximum Number of Calls	N/A	Y	Y	Y	Y	Y	Y
	Message Waiting Policy	N/A	Y	Y	Y	Y	Y	Y
	MLPP Calling Search Space	N/A	N	N	N	Y	Y	Y
	MLPP No Answer Ring Duration	N/A	N	N	N	Y	Y	Y
	MLPP Target	N/A	N	N	N	Y	Y	Y
	Network Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
	No Answer Ring Duration	N/A	Y	Y	Y	Y	Y	Y
	Route Partition	N/A	Y	Y	Y	Y	Y	Y
	Ring Setting (Phone Active)	N/A	Y	Y	Y	Y	Y	Y
	Ring Setting (Phone Idle)	N/A	Y	Y	Y	Y	Y	Y
	User Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
	Voicemail Profile	N/A	Y	Y	Y	Y	Y	Y
	Expansion Module 1	N/A	Y	Y	Y	Y	Y	Y
	Expansion Module 2	N/A	Y	Y	Y	Y	Y	Y
	MLPP Domain	N/A	Y	Y	Y	Y	Y	Y
	MLPP Indication	N/A	Y	Y	Y	Y	Y	Y
	MLPP Preemption	N/A	Y	Y	Y	Y	Y	Y
	Network Locale	N/A	Y	Y	Y	Y	Y	Y
	Privacy	N/A	N	N	N	Y	Y	Y
	Settings Access	N/A	Y	Y	Y	Y	Y	Y
Speed Dial Info	N/A	Y	Y	Y	Y	Y	Y	

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Extension Mobility Line (continued)	Softkey Template	N/A	N	Y	Y	Y	Y	Y
	User Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
	User Locale	N/A	N	Y	Y	Y	Y	Y

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Line	AAR Group	N/A	Y	Y	Y	Y	Y	Y
	Auto Answer	N/A	Y	Y	Y	Y	Y	Y
	Busy Trigger	N/A	Y	N	Y	Y	Y	Y
	Call Pickup Group	N/A	Y	Y	Y	Y	Y	Y
	Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Display (Internal Caller ID)	N/A	Y	Y	Y	Y	Y	Y
	External Phone Number Mask	N/A	Y	Y	Y	Y	Y	Y
	Forward All	N/A	Y	Y	Y	Y	Y	Y
	Forward All - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward All - Destination	N/A	Y	Y	Y	Y	Y	Y
	Forward All - Voicemail	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - External	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - Destination	N/A	Y	Y	Y	Y	Y	Y
	Forward Busy - Voicemail	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - External	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Destination	N/A	Y	Y	Y	Y	Y	Y
	Forward No Answer - Voicemail	N/A	Y	Y	Y	Y	Y	Y
	Forwarded Call Information - Caller Name	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Caller Number	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Dialed Number	N/A	N	Y	Y	Y	Y	Y
	Forwarded Call Information - Redirected Number	N/A	N	Y	Y	Y	Y	Y
	CME Line Configuration Template	Y	N/A	N/A	N/A	N/A	Y	Y
	Maximum Number of Calls	N/A	N	N	N	N	Y	Y
	Message Waiting Policy	N/A	Y	Y	Y	Y	Y	Y
	MLPP Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	MLPP No Answer Ring Duration	N/A	Y	Y	Y	Y	Y	Y
	MLPP Target	N/A	Y	Y	Y	Y	Y	Y
	Network Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
No Answer Ring Duration	N/A	Y	Y	Y	Y	Y	Y	

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Line (contined)	Route Partition	N/A	Y	Y	Y	Y	Y	Y
	Ring Setting (Phone Active)	N/A	Y	Y	Y	Y	Y	Y
	Ring Setting (Phone Idle)	N/A	Y	Y	Y	Y	Y	Y
	User Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
	Voicemail Profile	N/A	Y	Y	Y	Y	Y	Y

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Phone	AAR Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	Authentication Server URL	N/A	Y	Y	Y	Y	Y	Y
	Auto Line Select	N/A	Y	Y	Y	Y	Y	Y
	Built in Bridge	N/A	Y	Y	Y	Y	Y	Y
	Calling Search Space	N/A	Y	Y	Y	Y	Y	Y
	CME Phone Configuration Template	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Common Device Configuration	N/A	N	N	N	N	N	Y
	Description	N/A	Y	Y	Y	Y	Y	Y
	Device Pool	N/A	Y	Y	Y	Y	Y	Y
	Device Security Mode	N/A	Y	Y	Y	N	Y	Y
	Directory URL	N/A	Y	Y	Y	Y	Y	Y
	Disable Speakerphone	N/A	Y	Y	Y	Y	Y	Y
	Disable Speakerphone and Headset	N/A	Y	Y	Y	Y	Y	Y
	Expansion Module 1	N/A	Y	Y	Y	Y	Y	Y
	Expansion Module 2	N/A	Y	Y	Y	Y	Y	Y
	Forwarding Delay	N/A	Y	Y	Y	N	Y	Y
	Generic IOS Commands	Y	N/A	N/A	N/A	N/A	N/A	N/A
	Gratuitous ARP	N/A	Y	Y	Y	Y	Y	Y
	Idle URL	N/A	Y	Y	Y	Y	Y	Y
	Idle Timer	N/A	Y	Y	Y	Y	Y	Y
	Information	N/A	Y	Y	Y	Y	Y	Y
	Location	N/A	Y	Y	Y	Y	Y	Y
	Media Resource Group List	N/A	Y	Y	Y	Y	Y	Y
	Messages	N/A	Y	Y	Y	Y	Y	Y
	MLPP Domain	N/A	Y	Y	Y	Y	Y	Y
	MLPP Indication	N/A	Y	Y	Y	Y	Y	Y
	Module 1 Load Name	N/A	Y	Y	Y	Y	Y	Y
	Module 2 Load Name	N/A	Y	Y	Y	Y	Y	Y
	MLPP Preemption	N/A	Y	Y	Y	Y	Y	Y
	Network Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
Network Locale	N/A	N	N	Y	Y	Y	Y	

Table 6-3 Supported Call Processor Provisioning Attributes (continued)

Products	Provisioning Attributes	Cisco Unified Communications Manager Express	Cisco Unified Communications Manager					
			4.0.x	4.1.x	4.2.x	5.0.x	5.1.x	6.0.x
Phone (continued)	PC Port	N/A	Y	Y	Y	Y	Y	Y
	PC Voice VLAN Access	N/A	Y	Y	Y	Y	Y	Y
	Phone Load Name	N/A	Y	Y	Y	Y	Y	Y
	Port Ranges for IP Communicator	N/A	Y	Y	Y	Y	Y	Y
	Privacy	N/A	Y	Y	Y	Y	Y	Y
	Proxy Server URL	N/A	Y	Y	Y	Y	Y	Y
	Retry Video Call as Audio	N/A	Y	Y	Y	Y	Y	Y
	Services	N/A	Y	Y	Y	Y	Y	Y
	Settings Access	N/A	Y	Y	Y	Y	Y	Y
	Softkey Template	N/A	Y	Y	Y	Y	Y	Y
	Speed Dial Info	Y	Y	Y	Y	Y	Y	Y
	User Hold Audio Source	N/A	Y	Y	Y	Y	Y	Y
	User Locale	N/A	N	Y	Y	Y	Y	Y
	Video Capabilities	N/A	Y	Y	Y	Y	Y	Y
Web Access	N/A	Y	Y	Y	Y	Y	Y	

Table 6-4 Supported Unified Message Processor Provisioning Attributes

Product Group	Provisioning Attribute	Cisco Unity Express			Cisco Unity			Unity Connection
		2.1.x	2.2.x	2.3.x	4.0.x	4.1.x	5.0.x	
Voicemail	CUE User Configuration Template	Y	Y	Y	N/A	N/A	N/A	N/A
	CUE Voicemail Configuration Template	Y	Y	Y	N/A	N/A	N/A	N/A
Unified Messaging	UM Disabling Class Of Service Template	N/A	N/A	N/A	Y	Y	Y	Y
	UM Enabling Class Of Service Template	N/A	N/A	N/A	Y	Y	Y	Y
	UM Disabling Subscriber Template	N/A	N/A	N/A	Y	Y	Y	Y
	UM Enabling Subscriber Template	N/A	N/A	N/A	Y	Y	Y	Y

**Note**

Unless certain Phone provisioning attributes are configured when placing an order, they will display *Not Set*. But when you view the phone in the Cisco Unified Communications Manager user interface, the attributes will appear as being set to a default value. This occurs because the Cisco Unified Communications Manager AXL interface does not return default values to Provisioning Manager for these attributes when provisioning a phone.

This applies to the following provisioning attributes:

- Auto Line Select
 - Disable Speakerphone
 - Disable Speakerphone and Headset
 - Forwarding Delay
 - Gratuitous ARP
 - PC Port
 - PC Voice VLAN Access
 - Port Ranges for IP Communicator
 - Retry Video Call as Audio
 - Settings Access
 - Video Capabilities
 - Web Access
-



CHAPTER 7

Administering Provisioning Manager

This chapter includes the following topics:

- [Viewing Licensing Information, page 7-1](#)
- [Launching Cisco Unified Operations Manager IP Phone Details, page 7-3](#)
- [Managing Log Files, page 7-4](#)
- [Maintaining Data, page 7-5](#)
- [Scheduling Synchronizations, page 7-12](#)
- [Searching Inventory, page 7-13](#)
- [Viewing System Reports, page 7-21](#)

Viewing Licensing Information

The License Status Information page displays the following:

- Unavailable features—Any features in Provisioning Manager that you do not have access to, because you do not have the appropriate license or because you have reach the limit for the use of the feature.
- Features in overdraft state—Any features that you are using that have exceeded their allowable use limit.
- All valid features—List of features and their corresponding use limit (Available), overuse allowed (Overdraft), current use (Used) and date of expiration (Expiry).

Step 1 Select **System Administration > License Information**. The License Status Information page appears.

Licensing Process

The Provisioning Manager license file includes support for at least 1,000 phones. You can purchase incremental licenses for additional phone support and register up to 30,000 phones with a single Provisioning Manager. For each incremental license that you purchase, you will receive a PAK, and you must use that PAK to obtain a license file.

This process applies to new installations and license upgrades.

1. Obtain a Product Authorization Key (PAK)—The PAK is used to register Provisioning Manager, and any additional device support that you might purchase for Provisioning Manager, on Cisco.com, and it contains resource limitations. See [Obtaining a PAK, page 7-2](#).
2. Obtain a license file—A license file is sent to you after you register the PAK on Cisco.com. See [Obtaining a License File, page 7-2](#).
3. Copy the license file to the server where Provisioning Manager is to be installed. If Provisioning Manager is already installed and you are upgrading your license file, you must register the license file with Provisioning Manager. See [Registering a License File with Provisioning Manager, page 7-2](#).

Obtaining a PAK

The PAK is located on the software claim certificate that is shipped with the Provisioning Manager product CD.

Obtaining a License File

-
- Step 1** Register the PAK and the MAC address of the system where Provisioning Manager is installed with Cisco.com at <http://www.cisco.com/go/license>. You will be asked to log in. You must be a registered user of Cisco.com to log in.



Note

The MAC address is required because licensing uses node-locking technology. The license file can only be used with the MAC address that you supply. The license file will be emailed to you. After you obtain a license file, register the license with the Provisioning Manager server.

The license file will be emailed to you. After you obtain a license file, register the license with the Provisioning Manager server.

Registering a License File with Provisioning Manager

-
- Step 1** Copy the license file to the Provisioning Manager server, in the folder <Installation directory>\license. The system validates the license file and updates the license. The updated licensing information appears on the Licensing Status Information page.
- Step 2** The license should automatically take effect in a few minutes. If it does not, select **System Administration > License Information**.
- Step 3** Click **PERFORM AUDIT**. You will see the phones that you are licensed to update.
- Step 4** If you purchased more than one license, repeat [Step 1](#) to install each additional license.
-

Launching Cisco Unified Operations Manager IP Phone Details

If you have purchased Cisco Unified Operations Manager (Operations Manager) and are running it, you can setup Provisioning Manager to launch the IP Phone Details dialog box from Operations Manager. The IP Phone Details dialog box is launched from a subscriber record.

Before using this feature, you must first configure Provisioning Manager (see [Configuring Provisioning Manager to Open Cisco Unified Operations Manager IP Phone Details, page 7-3](#)).

After performing the configuration procedure, a Details button appears on the subscriber record. The Details button launches the IP Phone Details dialog box from Operations Manager (see [Opening the Cisco Unified Operations Manager IP Phone Details Dialog Box, page 7-3](#)).

Configuring Provisioning Manager to Open Cisco Unified Operations Manager IP Phone Details

Step 1 On the Provisioning Manager system, go to the <Installation directory>/sep folder.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 2 Open the ipt.properties file.

Step 3 In the ipt.properties file change the following properties:

- `dfc.ipt.operationsmanager.host: <hostname>`—Enter the Operations Manager system host name or IP address.
- `dfc.ipt.operationsmanager.port: <port>`—Enter the port number that Operations Manager uses.

Step 4 Save and close the file.

Step 5 Stop Provisioning Manager. On the Provisioning Manager system, select **Start > All Programs > Cisco Unified Provisioning Manager > Stop Cisco Unified Provisioning Manager**.

Step 6 Start Provisioning Manager (**Start > All Programs > Cisco Unified Provisioning Manager > Start Cisco Unified Provisioning Manager**).

Opening the Cisco Unified Operations Manager IP Phone Details Dialog Box

Step 1 Open the subscriber record for the desired subscriber (see [Accessing a Subscriber Record, page 3-1](#)).

Step 2 Click the Phone that you want to see the details for. The Details button is one of the buttons displayed.

Step 3 Click the **Details** button. The Operations Manager login page appears. Valid Operations Manager credentials are required to view the IP Phone Details dialog box.

Step 4 Log into Operations Manager. The IP Phone Details dialog box from Operations Manager appears.

Managing Log Files

Provisioning Manager writes application log files for the Service Enabling Platform (SEP) module (sep.log) and the Network Interface and Configuration Engine (NICE) service (nice.log). The log files are located in the <Installation Directory>/sep/logs folder.

You cannot disable logging. However, you can:

- Collect more data when needed by increasing the logging level
- Return to the default logging level (NORMAL)

Following are the available logging levels:

- DETAIL (provides the most information)
- LOW
- NORMAL
- HIGH
- EMERGENCY

Log files are backed up every hour, or when they reach their maximum log size limit. The default size limit is 20 Mb (see [Changing the Maximum Log File Size, page 7-5](#)). The files are saved in the format sep.log.<date stamp>-<timestamp>.



Tip

The log files are not automatically purged. To save space, it is recommended that you periodically delete the old log files.

Changing the Log Level

Step 1 On the Provisioning Manager system, go to the <Installation directory>/sep folder.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 2 Open the dfc.properties file.

Step 3 Change the dfc.log.level property to the desired level. Following are the available logging levels:

- DETAIL
- LOW
- NORMAL
- HIGH
- EMERGENCY

Step 4 Save the changes.

Step 5 Restart the Provisioning Manager services. Changes will not take effect until Provisioning Manager is restarted.

- a. On the Windows desk top, select **Start > Control Panel > Administrative Tools > Services** the Services window appears.

- b. Right-click the following services and select **Start**.
 - cupm JBossService
 - cupm NiceService
-

Changing the Maximum Log File Size

Step 1 On the Provisioning Manager system, go to the <Installation directory>/sep folder.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 2 Open the dfc.properties file.

Step 3 Change the dfc.log.maxsize property to the desired size (default is 20 Mb).

Step 4 Save the changes.

Step 5 Restart the Provisioning Manager services. Changes will not take effect until Provisioning Manager is restarted.

- a. On the Windows desk top, select **Start > Control Panel > Administrative Tools > Services** the Services window appears.
 - b. Right-click the following services and select **Start**.
 - cupm JBossService
 - cupm NiceService
-

Maintaining Data

Enabling Data Purging

You can configure Provisioning Manager to purge data at a scheduled interval.

Provisioning Manager retains the following types of data:

- **Order**—When an order is placed for any product provisioning (for example; phone, line, voicemail or any bundle), an order data object is created and stored in the system.
- **ServiceAction**—Are objects that get created during when the application communicate with the device for product provisioning.
- **Workflow**—After an order is placed for a product, it goes through a workflow (approval, shipping, and receiving) before going to the service activator.



Note Data will be purged when the retention time or retention count criteria is met. For example, if the data is older than the retention time it will be removed. Also, if the data amount exceeds the retention count, it will be removed.

-
- Step 1** Select **System Administration > Data Maintenance**. The Data Maintenance Configuration page appears.
- Step 2** Select the checkbox in the row for the data you want to schedule for purging.
- Step 3** In the Retention Time column, change the number of days for which you want to retain the data (default is seven days).
- Step 4** In the Retention Count column, select the amount of data that you want to retain.



Note Retention count is the number of objects that you want Provisioning Manager to keep and not purge. For example, if there are 1000 total orders and the retention count is 100, Provisioning Manager will purge 900 orders and keep the latest 100 orders.

The default settings for the Retention Count are:

- Orders—100
- ServiceAction—100
- Workflow—50

- Step 5** (Optional) If you want to export the purged data to a file before it is removed, in the Export Before Purge field select **Yes**, then enter a directory location at which to store the data.



Note Only Orders and Workflow data is exported. ServiceAction data cannot be exported.

- Step 6** Select a purge interval (the default is 24 hours).
The Purging Information pane displays the time of the next scheduled purge and the last purge.
- Step 7** Click **Update**.
-

Maintenance Mode

You can put the Provisioning Manager into maintenance mode to perform user-impacting actions that are not available in normal mode, such as deleting domains, processors and service areas.

-
- Step 1** Select **System Administration > Maintenance Mode**. The Application Mode page appears.
- Step 2** Click **Enter Maintenance Mode**. All users except users with administrative rights will be logged out. A warning will appear on the login page notifying users that system use is limited to users with administrative privileges. Maintenance options that are not available in normal mode, such as deleting domains, will become available in the Provisioning Manager.
- Step 3** Perform any maintenance activities, such as deleting a domain.
- Step 4** When you have completed maintenance activities, select **System Administration > Maintenance Mode**. The Application Mode page appears.
- Step 5** Click **Enter Normal Mode**. The warning on the login page will be removed and users can now login as usual. Maintenance options such as deleting domains will no longer be available in the Provisioning Manager.

Provisioning Manager Database Backup and Restore

There are two backup and restore scenarios; select the set of procedures that matches your scenario:

- Backup and restore on a single machine, with the same install or a new install. For this scenario, see [Backing up the Single Machine Provisioning Manager Database, page 7-7](#) and [Restoring the Single Machine Provisioning Manager Database, page 7-8](#).
- Backup and restore for a distributed database scenario, for the same install, a new install with the same IP address, or a new install with a new IP address. For this scenario, see [Backing up Provisioning Manager for a Distributed Database, page 7-9](#) and [Restoring Provisioning Manager for a Distributed Database, page 7-10](#).



Note

When backing up files, you should place the files on a different file server. Also, you should burn the backup data onto a CD.

Backing up the Single Machine Provisioning Manager Database



Note

This procedure requires postgres administrator level access.

Step 1

On the Provisioning Manager system, stop the following services:

- Apache
 - cupm JBossService
 - cupm NiceService
- a. On the Windows desktop, select **Start > Control Panel > Administrative Tools > Services**.
 - b. Right-click each of the services and click **Stop**.

Step 2

On the Windows desktop, select **Start > All Programs > PostgreSQL8.2 > Command Prompt**. A command prompt opens in the <Install directory>\pgsql\bin directory.



Note

If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 3

In the command prompt, run the following command and enter the postgres admin password when prompted.

```
pg_dumpall -o -U<username> >[path and fileForBackup]
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.



Note

Enter the password each time that you are prompted.

This command is used to backup the database, by storing the database information in a file.

Step 4

If you are backing up on the same install, proceed to the next step. If you are backing up for a new install, make backup copies as described in this step.

- a. In a backup folder, make copies of the following files and directories:
 - <installLocation>/install.log

- <installLocation>/sep/dfc.properties
- <installLocation>/sep/dfc.keystore
- <installLocation>/jboss-4.0.3SP1/server/cupm/conf/login-config.xml

Step 5 Start the following services:

- Apache
 - cupm JBossService
 - cupm NiceService
- a. On the Windows desktop, select **Start > Control Panel > Administrative Tools > Services**.
 - b. Right-click each of the services and click **Start**.

Restoring the Single Machine Provisioning Manager Database

If you are restoring to a new install, have the system with the new install up and running before beginning this procedure.



Note This procedure requires postgres administrator level access.

Step 1 Stop Provisioning Manager services (for information on which services to stop, see [Step 1, On the Provisioning Manager system, stop the following services:](#)).

Step 2 On the Windows desktop, select **Start > All Programs > PostgreSQL8.2 > Command Prompt**.

A command prompt opens in folder <Install directory>\pgsql\bin.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 3 To enter the postgres prompt, run the following command and enter the postgres administrator password for the current install when prompted:

```
psql.exe -U<username>
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.

Step 4 Before restoring the database, you must drop the database name and role. In the command prompt, run the following commands exactly as shown, one at a time in the following order:

- **DROP DATABASE cupm;**

Where *cupm* is the database name to be removed.

Expected output: DROP DATABASE

- **DROP ROLE <rolename>;**

Where <rolename> is the username for the SEP database user. If you accepted the default, the username is *cupm*.

Expected output: DROP ROLE

- **ALTER ROLE <username> WITH PASSWORD '<password>';**

Where *username* is the username of the postgres administrator user, and *password* should be the password set for the postgres administrator with backed up data. If you accepted the default administrator username, the username is *postgres*.

Expected output: ALTER ROLE

Step 5 Enter \q to quit the postgres prompt.

Step 6 From the command line, run the following command, entering the password set in the previous step for the postgres user when prompted:

```
psql.exe -U<username> -d postgres < [path and fileToRestoreFrom]
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.

This command restores the database.

Step 7 If you are restoring to the same install, proceed to the next step. If you are restoring to a new install, complete the following step to copy the backed up files.

- a. Copy back the following backed up files:
 - <installLocation>/install.log
 - <installLocation>/sep/dfc.properties
 - <installLocation>/sep/dfc.keystore
 - <installLocation>/jboss-4.0.3SP1/server/cupm/conf/login-config.xml

Step 8 Start the following services:

- Apache
 - cupm JBossService
 - cupm NiceService
- a. On the Windows desktop, select **Start > Control Panel > Administrative Tools > Services**.
 - b. Right-click each of the services and click **Start**.

Backing up Provisioning Manager for a Distributed Database



Note This procedure requires postgres administrator level access.

Step 1 On the system where Provisioning Manager is running, stop the following services:

- Apache
 - cupm JBossService
 - cupm NiceService
- a. On the Windows desktop where Provisioning Manager is running, select **Start > Control Panel > Administrative Tools > Services**.
 - b. Right-click each of the services and click **Stop**.

Step 2 On the Windows desktop where the Provisioning Manager database is running, select **Start > All Programs > PostgreSQL8.2 > Command Prompt**. A command prompt opens in the <Install directory>\pgsql\bin directory.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 3 In the command prompt, run the following command and enter the postgres admin password when prompted.

```
pg_dumpall -o -U<username> > [path and fileForBackup]
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.



Note Enter the password each time that you are prompted.

This command is used to backup the database, by storing the database information in a file.

Step 4 If you are backing up on the same install, proceed to the next step. If you are backing up for a new install, either with the same or new IP address, make backup copies as described in this step.

- a. On the machine where Provisioning Manager is running, in a backup folder, make copies of the following files and directories:
 - <installLocation>/install.log
 - <installLocation>/sep/dfc.properties
 - <installLocation>/sep/dfc.keystore
 - <installLocation>/jboss-4.0.3SP1/server/cupm/conf/login-config.xml

Step 5 Start the following services:

- Apache
 - cupm JBossService
 - cupm NiceService
- a. On the Windows desktop, select **Start > Control Panel > Administrative Tools > Services**.
 - b. Right-click each of the services and click **Start**.
-

Restoring Provisioning Manager for a Distributed Database

If you are restoring to a new install, either with the same or a new IP address, have the system with the new install up and running before beginning this procedure.



Note This procedure requires postgres administrator level access.

Step 1 On the system where Provisioning Manager is running, stop the Provisioning Manager services (for information on which services to stop, see [Step 1, On the system where Provisioning Manager is running, stop the following services:](#)).

Step 2 On the Windows desktop where the Provisioning Manager database is running, select **Start > All Programs > PostgreSQL8.2 > Command Prompt**.

A command prompt opens in folder <Install directory>\pgsql\bin.



Note If you accepted the default location during installation, the installation directory is C:\CUPM.

Step 3 To enter the postgres prompt, run the following command and enter the postgres administrator password for the current install when prompted:

```
psql.exe -U<username>
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.

Step 4 Before restoring the database, you must drop the database name and role. In the command prompt, run the following commands exactly as shown, one at a time in the following order:

- **DROP DATABASE cupm;**

Where *cupm* is the database name to be removed.

Expected output: DROP DATABASE

- **DROP ROLE <rolename>;**

Where <rolename> is the username for the SEP database user. If you accepted the default, the username is *cupm*.

Expected output: DROP ROLE

- **ALTER ROLE <username> WITH PASSWORD '<password>;'**

Where <username> is the username of the postgres administrator, and *password* is the password set for the postgres administrator with backed up data. If you accepted the default administrator username, the username is *postgres*.

Expected output: ALTER ROLE

Step 5 Enter \q to quit the postgres prompt.

Step 6 From the command line, run the following command, entering the password set in the previous step for the postgres user when prompted:

```
psql.exe -U<username> -d postgres < [path and fileToRestoreFrom]
```

Where <username> is the username of the postgres administrator. If you accepted the default, the administrator username is *postgres*.

This command restores the database.

Step 7 If you are restoring to the same install, proceed to the [Step 9](#). If you are restoring to a new install, either with the same or new IP address, complete the following step to copy the backed up files.

- a. Copy back the following backed up files on the machine where Provisioning Manager is running:
 - <installLocation>/install.log
 - <installLocation>/sep/dfc.properties
 - <installLocation>/sep/dfc.keystore
 - <installLocation>/jboss-4.0.3SP1/server/cupm/conf/login-config.xml

Step 8 If you are restoring to the same IP address, proceed to [Step 9](#). If you are restoring to a new install with a new IP address, complete this step.

- a. On the system where Provisioning Manager is running, in the file `<installLocation>\sep\dfc.properties`, find the property `dfc.postgres.host`, and change it to:
`dfc.postgres.host=<New DB Server IP Address>`
- a. On the Windows desktop of the machine where the database is running, go to **Start > Programs > PostgreSQL 8.2 > pgAdmin III**.
- b. Double click on `cupmPostgreSQL` and login using the postgres administrator password.
- c. Click on the SQL menu item at the top of the query window, and in the top right window pane enter the following command:
`delete from nicesyseng where host='<Old NICE Server IP Address>'`
- d. Click on the **Execute Query** button at the top of the query window.
- e. In the Output Pane at the bottom of the screen, confirm that the result message says the query was returned successfully.
- f. Exit the query window.
- g. Exit the pgAdminIII window.
- h. Restart Postgres on the machine where the database is running.
 - On the Windows desktop, select **Start > Control Panel > Administrative Tools > Services**.
 - Right-click the service `cupmPostgreSQL` and click **Start**.

Step 9 On the system where Provisioning Manager is running, start the following services:

- Apache
 - `cupm JBossService`
 - `cupm NiceService`
- a. On the Windows desktop, select **Start > Control Panel > Administrative Tools > Service**.
 - b. Right-click each of the services and click **Start**.



Scheduling Synchronizations

Besides running synchronizations on demand through the appropriate Provisioning Manager functional area, you can set up scheduled synchronizations. You schedule synchronizations for the following:

- Call Processors (see [Synchronizing Call Processors, page 5-4](#))
- Unified Message Processors (see [Synchronizing Unified Message Processors, page 5-8](#))
- Domains (see [Synchronizing Domains, page 5-13](#))

You do not use Provisioning Manager to set up scheduled synchronizations. You must use the Scheduled Tasks functionality that comes with your Windows system.

- Step 1** On the Windows desktop, select **Start > Programs > Accessories > System Tools > Scheduled Tasks**. The Scheduled Tasks window opens.
- Step 2** Double-click **Add Scheduled Task**. The Scheduled Task wizard appears.
- Step 3** Click **Next**.
- Step 4** In the next page, click **Browse**.

- Step 5** Browse to the file C:\CUPM\sep\build\bin\sync.bat (this is the correct location if you accepted the default location during installation).
- Step 6** Select how often you want the synchronization to run. Click **Next**.
- Step 7** Select the time and day when you want the synchronization task to start. Click **Next**.
-  **Note** You should run synchronizations during off-peak network usage periods.
- Step 8** Enter the password (and confirm) for the system's administrator user. Click **Next**.
- Step 9** Click **Finish**. The new scheduled task appears in the Scheduled Tasks window.
- Step 10** Right-click the new scheduled task and select **Properties**.
- Step 11** In the Run field, at the end of the string (after *sync.bat*), enter one or more of the following commands:
- **callprocessor**—Runs infrastructure and subscriber synchronizations for all Call Processors in the system.
 - **messageprocessor**—Runs infrastructure and subscriber synchronizations for all Unified Message Processors in the system.
 - **domain**—Runs synchronizations for all the domains in the system. The order of Domains synchronizations depends on the value set on the syncPrecedence property for the corresponding domain instances.
 - **all**—Runs infrastructure and subscriber synchronizations for all Call Processors and Unified Message Processors. The order of synchronizations is callprocessor, messageprocessor, and domain.
-  **Note** You can also use these commands in a command prompt to start a synchronization. Run the commands at the following location: <CUPM_DIR>/sep/build/bin/sync.bat.
- Step 12** Click **OK**.

Searching Inventory

If you are assigned the Administration authorization role you can browse the Provisioning Manager network and service inventory. You can view different types of network or service related data in a tree-base selector.

The following objects appear in the selector:

- **Global Resources**—List infrastructure data stored in Provisioning Manager. Some examples are, Route Partition, Call Search Space, Call Pickup Group.
- **Product Catalog**—Lists the products present in Provisioning Manager.
- **Subscribers**—List all subscribers and their locations in Provisioning Manager.
- **Domain specific directory numbers, phones, rules and Services Areas.**

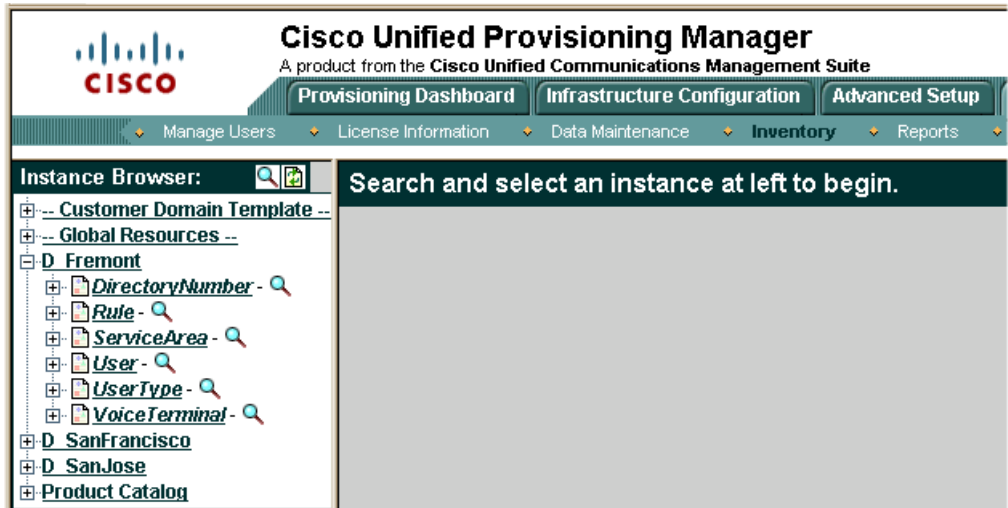
This section provides information for browsing and searching Provisioning Manager inventory, using the Instance Browser and search functionality of the Inventory Manager.

- [Using Inventory Search, page 7-14](#)

- [Creating Search Reports, page 7-20](#)

Figure 7-1 shows an example of the Inventory Search page.

Figure 7-1 *Inventory Search*



Step 1 Select **System Administration > Inventory**. A new page appears.

Step 2 Do one of the following:

- If you want to browse Provisioning Manager's inventory, click **Browse**. The Instance Browser appears. For information on the Instance Browser, see [Using Inventory Search, page 7-14](#).
- If you want to perform a search of Provisioning Manager's inventory, click **Search**. The Search Reports page appears. In this page you can do the following:
 - Perform a search using a sample report.
 - Create a new Search report to perform a search.

Using Inventory Search

You can search for inventory objects using basic or advanced searches. You use basic searches to find instances of an object based on its properties. Advanced searches are used to specify more detailed search criteria. You can include multiple constraints, such as customers, properties, associations, and namespaces, to limit the search results. You can also specify what properties you want the search to return. You can save advanced searches as reports, and organize them into categories. Reports can be created only by Administrators.

The following sections describe how to run basic and advanced searches:

- [Performing Basic Searches, page 7-15](#)
- [Performing Advanced Searches, page 7-15](#)
- [Return Values, page 7-19](#)

Performing Basic Searches

Using the Instance Browser, you can run a basic search for instances of a particular object. In a basic search, the search parameters are based on the properties of the class.

The first step to searching for an instance is specifying the class that it is based on. You can specify search criteria and how the results are displayed by:

- Specifying a keyword or partial keyword. You can use asterisks (*) as wildcards.
- Specifying whether the results are displayed according to the class name or label property.
- Restricting the search to a particular domain.
- Including and/or excluding abstract, association, and interface classes.

After you have located the class that the instance is based on, you can narrow your search by specifying search criteria based on the class properties. The number of searchable properties varies from class to class.

-
- Step 1** Select **System Administration > Inventory**. A new page appears.
- Step 2** Click **Browse**. The Instance Browser appears.
- Step 3** Click the Search icon (🔍). The Class Search dialog box appears.
- Step 4** Either enter a class or choose a class from the list. The Instance Search screen appears.
- Step 5** Complete the fields if you have search parameters you want to specify.
- Step 6** Click Search. The results appear in the Found matches section.
-

Performing Advanced Searches

You can perform advanced searches to find inventory instances within a specified object class. An advanced search can be saved for future use.

Performing advanced searches consists of the following steps:

-
- Step 1** Select **System Administration > Inventory**. A new page appears.
- Step 2** Do one of the following:
- Click Browse, select a class using a basic search, then click Advanced.
 - Click Search, click the New icon (📄), and then select a class.
- Step 3** Add any applicable constraints. You can constrain searches using properties, associations, namespaces, or customers.
- Step 4** Create a list of properties to return in the search from a list of available properties. The search results include only those instances that contain the selected properties.
- Step 5** Specify associated properties to return in the search, if applicable, by building the path to the properties. The search results will include only those instances with the selected properties.
- Step 6** Specify associated objects to return in the search, if applicable, by building the path to the objects. The search results will include only those instances with the selected objects.

- Step 7** Specify whether to include or exclude Namespaces and Object Classes in the search results.
- Step 8** Run the search. The search results are displayed.
-

Detailed instructions for selecting the above constraints and return objects and properties can be found in the following sections:

- [Constraints, page 7-16](#)
- [Defining Property Constraints, page 7-16](#)
- [Defining Association Constraints, page 7-17](#)
- [Defining Namespace Constraints, page 7-18](#)
- [Associated Properties to Return, page 7-19](#)
- [Associated Objects to Return, page 7-20](#)

Constraints

Use the Add Constraint section to define the constraints for the search.

The following constraints are available for advanced searches:

- **Properties**—To restrict the results to objects that meet specified property criteria. You can set the properties constraint to be case sensitive or case insensitive. You can specify that either all or part of the value must be matched to return results.
- **Associations**—To restrict the results to objects that are (or are not) associated with other objects using a specified association path. Association paths allow the relation between the source object and the queried objects to span multiple association classes.
- **Namespaces**—To restrict the results to objects contained (or not contained) in specified namespaces.
- **Customers**—To restrict the results to objects that are associated with specific customers.

Defining Property Constraints

You can define searches to select only the objects that meet specified property constraints. For example, you can define a constraint in which only instances that have a specific model number are included in the search results. In this case, the property constraint acts as a filter when searching for a specific object property.

When defining property constraints, the following conditions are available:

- **Equals**—To specify a value that is equivalent in value to the selected property.
- **Contains**—To specify a value that is contained within the value of the selected property.
- **Not equal to**—To specify a value that is not equivalent in value to the selected property.
- **Does not contain**—To specify a value that is not contained within the value of the selected property.
- **In range**—To specify a value that has a Date property that is within the specified range. This operator can only be used when Date properties have been specified for an object, and where `reportable=true` is set in the class definition properties.

After you select the operator, you can either specify a value, or leave the field blank. If you specify a value, it becomes the default value, although users who execute the search can change the value if required. Leaving the field blank allows a user who is executing the search at a later time to specify a value for that property constraint.

To define property constraints:

-
- Step 1** In the advanced Instance Search screen, select a property from the Add Constraint list.
 - Step 2** Click **Add**. The available conditions appear in a list.
 - Step 3** From the available conditions list, select the appropriate operator and click **Add**. The Property list appears in the Add Constraint section.
 - Step 4** Select the appropriate property. The Value field appears in the Add Constraint section.
 - Step 5** In the Value field, do one of the following:
 - Specify a default value for the constraint.
 - Leave the field blank so that users can specify their own constraints.
 - Step 6** If you want the search to be case-insensitive, enable **Ignore Case**.
 - Step 7** Click **Add**. The constraint appears in the Selected Constraints section.
 - Step 8** Repeats Steps 1 through 7 to add additional constraints.
 - Step 9** If you have defined multiple constraints, specify the *and* or *or* operands as required in the Operand column.
-

Defining Association Constraints


You can define searches to select objects that are, or are not, associated with other objects. For example, you can define a search for Lines that are associated with Voice Terminals of a certain type, excluding Voice Terminals of another type. Additionally, you can sort within a range; for example, you can search for all Phones with 2 to 6 Lines.


When defining association constraints, the following conditions are available:

- Associated with—Used to specify the object instance and association path associating the search class with another object instance.
- Not associated with—Used to specify the object instance to *not* associate with for the search class.
- Associated with range—Used to specify the range of object instances to associate with the search class. If you select this condition, you must complete the appropriate association, condition, and quantity information.

After the operator is selected, you must select an object instance for the constraint. Each operator has a different procedure for selecting object instances to associate with.

To define constraints using the *associated with* operator:

-
- Step 1** From the Add Constraint list, select **Associations**.
 - Step 2** Click **Add**. The available conditions appear in a list.
 - Step 3** From the available conditions list, select **Associated with**.
 - Step 4** Click **Add**. The constraint is added to the Add Constraint section.
 - Step 5** In the Add Constraint section, in the Instance field, click the Search icon (). The Instance and Association Path dialog box appears.
 - Step 6** In the To Class list, select the class that the object instance is associated with, and click **Apply**.

- Step 7** In the By Association list, select the appropriate association, and then click **Apply**. The Participating As list appears.
- Step 8** Select the appropriate role for the class, and then click **Apply**. To Class appears.
- Step 9** To specify another class in the To Class field, repeat Steps 6 through 8.
- Step 10** To restrict the constraint to a specific object instance, click the Search icon () and search for that instance. By default, the constraint is not restricted to a particular instance.
- Step 11** Click **Add** to save your selections. The selected path is displayed.
- Step 12** To add the constraint as defined, click **Add**. The Selected Constraints section displays the Instance and Association Path information.
- Step 13** If you have defined multiple constraints, select the *and* or *or* operands as required in the Operand column.

To define constraints using the *associated with range* operator:

-
- Step 1** From the Add Constraint list, select **Associations**.
- Step 2** Click **Add**. The available conditions appear in a list.
- Step 3** From the available conditions list, select the **Associated with range** condition, then click **Add**. The constraint is added to the Add Constraint section.
- Step 4** From the Association list, select the association class that you want to search with.
- Step 5** From the Condition list, select the condition to satisfy in the search.
- Step 6** In the Quantity field, enter the number of instances the condition must meet, then click **Add**. The constraint is displayed in the Selected Constraints section.
- Step 7** Repeat Steps 1 through 6 to add additional constraints.
- Step 8** If you have defined multiple constraints, select the *and* or *or* operands as required in the Operand column.
-

Defining Namespace Constraints

Use namespace constraints to restrict the search to or exclude specific namespaces.

-
- Step 1** From the Add Constraint list, select namespace, then click **Add**. Namespace appears in the Add Constraint section.
- Step 2** Do one of the following:
- To specify a namespace to search in, select **Equals**.
 - To exclude a namespace from the search, select **Not Equal To**.
- Step 3** The Value list appears, displaying the available namespaces.
- Step 4** From the Value list, select the namespace, then click **Add**. The constraint appears in the Selected Constraints section.

- Step 5** Repeats Steps 1 through 4 to add additional constraints.
- Step 6** If you have defined multiple constraints, select the *and* or *or* operands as required in the Operand column.
-

Return Values

By default, the namespace, object class, and object values for each instance are displayed in the results of an advanced search. In addition to the default values, you can select other values for the advanced search to display.

Properties to Return

The Properties to Return section lists the available properties of the object class being searched, and those properties that you want the search to return. Using the Properties to Return section, you can expand the search to display a list of property values.

- Step 1** In the Properties to Return section, from the Available list, select a property then click **Add**. These properties are displayed in the Selected list.
- Step 2** After adding all the desired properties, click **Apply**.
-

Associated Properties to Return

The Associated Properties to Return section identifies the associated object class properties that you want the search to return. Using the Associated Properties to Return section, you can extend the search to include a list of associated object property values.

- Step 1** In the Associated Properties section, click **Add**. The Associated Property Path screen appears.
- Step 2** In the To Class list, select the object class.
- Step 3** Click **Apply**. The By Association list appears.
- Step 4** Select the appropriate association. Click **Apply**. The Participating as list appears.
- Step 5** Select the appropriate role for the class. Click **Apply**. The Select Property of lists appear.
- Step 6** Do one of the following:
- From the To Class list, select the object class. Click **Apply**. Repeat Steps 2 and 3 after you have added the classes that you require.
 - From the Select Property of list, select the properties of the class that you chose in Step 2. Click **Apply**.

The Associated Property Path screen appears with the selected path displayed.

- Step 7** Click **Add**. The new associated property is displayed in the search screen.



Tip

To remove a property, select the Remove checkbox, then click the **Remove** button.

Associated Objects to Return

The Associated Objects to Return section identifies the associated object classes that you want the search to return. Using the Associated Objects to Return section, you can extend the search to include a list of associated objects of a specific class.

-
- Step 1** Click **Add** in the Associated Objects section. The Associated Object Class Path window appears.
- Step 2** In the To Class list, select the object class, then click **Apply**. The By Association list appears.
- Step 3** Select the appropriate association, then click **Apply**. The Participating as list appears.
- Step 4** Select the appropriate role for the class, then click **Apply**. The To Class list appears.
- Step 5** Do one of the following:
- If you need to continue the path, repeat Steps 2 through 4.
 - If you are done, click **Add**.

The new associated property is displayed in the search screen.




Tip

To remove a property, select the Remove checkbox, then click the Remove button.

Creating Search Reports

You can save advanced searches (see [Performing Advanced Searches, page 7-15](#)) for future use. These are called Search Reports. Also, Provisioning Manager provides you with sample search reports that you can use, or you can create your own. The sample search reports are not editable.

You can save an advanced search at any time.


-
- Step 1** Select **System Administration > Inventory > Search**. The Search Reports page appears.
- Step 2** Click the New icon (). The Class Search dialog box appears.
- Step 3** Either enter a class in the search field or click one of the displayed classes. The Instance Search page appears.
- Step 4** Enter the desired search criteria. For instructions on using the Instance Search page, see [Performing Advanced Searches, page 7-15](#).
- Step 5** Click **Save**. The Save Search page appears.
- Step 6** Enter a name for the report and choose a category for it.
- Step 7** Click **Save**. You are returned to the Advanced Search page, where you can initiate the search.
-

Running Search Reports


Once you have saved a search as a Search report, you can run it. Before running a Search report, you can choose to have the search results displayed in the current browser window or in a new window.

-
- Step 1** Select **System Administration > Inventory > Search**. The Search Reports page appears.
- Step 2** Click the report that you want to run. Either one of the sample search reports, or a search report that you created. The Inventory Search page appears, displaying the constraints that have been defined.
- Step 3** Change the constraint values if required.
- Step 4** To display the search results in a separate browser window, select **Open results in a new window**.
- Step 5** Do one of the following:
- To execute the search and display the search results, click **Search**.
 - To execute the search and write the search results to an Excel spreadsheet, click **Excel**.
- The search results are displayed as specified.
-

Editing Search Reports

-
- Step 1** Select **System Administration > Inventory > Search**. The Search Reports page appears.
- Step 2** Click the Edit icon () next to the Search report that you want to edit. The Instance Search for the report appears.
- Step 3** Make the appropriate changes. For instructions on using the Instance Search page, see [Performing Advanced Searches, page 7-15](#).
-

Deleting Search Reports

-
- Step 1** Select **System Administration > Inventory > Search**. The Search Reports page appears.
- Step 2** Click the Edit icon () next to the Search report that you want to delete. The Instance Search for the report appears.
- Step 3** In the Search Options section, click **Delete**.
- Step 4** In the confirmation box, click **OK**.
-

Viewing System Reports

Provisioning Manager contains a set of preconfigured reports. Following are the available reports:

- Service Area Report
- Resource Configuration Report
- Service Configuration Report

- Directory Number Inventory Report
-

Step 1 Select **System Administration > Reports**.

Step 2 Click one of the following available reports:

- Service Area Report
- Resource Configuration Report
- Service Configuration Report
- Directory Number Inventory Report

A report is displayed.



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