Cisco IP Manager Assistant With Proxy Line Support

The Cisco IP Manager Assistant (Cisco IPMA) feature enables managers and their assistants to work together more effectively. Cisco IPMA supports two modes of operation: proxy line support and shared line support. The Cisco IPMA service supports both proxy line and shared line support simultaneously in a cluster. For information about Cisco IPMA with shared line support, see Cisco IP Manager Assistant With Shared Line Support.

The feature comprises a call-routing service, enhancements to phone capabilities for the manager and the assistant, and assistant console interfaces that are primarily used by the assistant.

The service intercepts calls that are made to managers and routes them to selected assistants, to managers, or to other targets on the basis of preconfigured call filters. The manager can change the call routing dynamically; for example, by pressing a softkey on the phone, the manager can instruct the service to route all calls to the assistant and can receive status on these calls.

Cisco CallManager users comprise managers and assistants. The routing service intercepts manager calls and routes them appropriately. An assistant user handles calls on behalf of a manager.

This chapter provides the following information about Cisco IPMA:

- Introducing Cisco IPMA, page 2-1
- System Requirements for Cisco IPMA with Proxy Line Support, page 2-6
- Interactions and Restrictions, page 2-7
- Installing and Activating Cisco IPMA, page 2-10
- Configuring Cisco IPMA with Proxy Line Support, page 2-10
- Providing Information to Cisco IPMA Managers and Assistants, page 2-31
- Related Topics, page 2-33

Introducing Cisco IPMA

The following sections provide information about the Cisco IPMA feature:

- Cisco IPMA Architecture Overview, page 2-2
- Cisco IPMA Database Access Architecture, page 2-5
- Manager Interfaces, page 2-5
- Assistant Interfaces, page 2-5

- Softkeys, page 2-5
- Manager Assistant Administration Interface, page 2-6

Cisco IPMA Architecture Overview

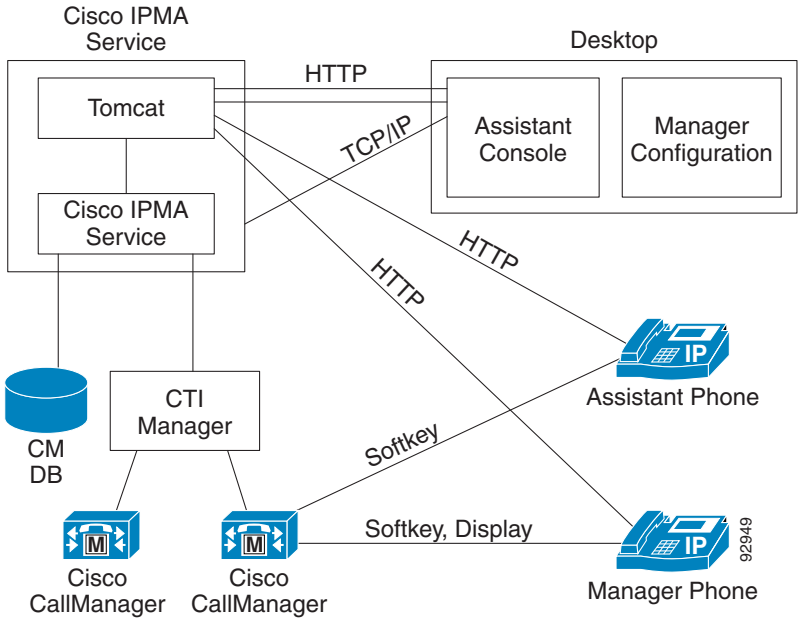
The Cisco IPMA feature architecture comprises the Cisco IPMA service, the assistant console interfaces, and the Cisco IP Phone interfaces. See Figure 2-1.

Cisco IPMA service routes calls that are presented to a CTI route point that is defined in the Cisco IP Manager Assistant service parameters. See the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.

Additional Information

See the "Related Topics" section on page 2-33.

Figure 2-1 Cisco IPMA Architecture



Cisco IPMA Service

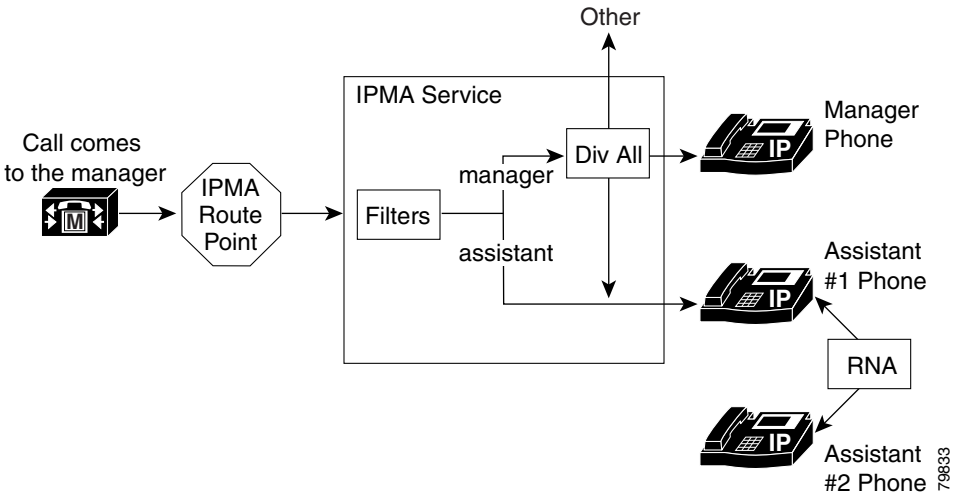
Cisco Tomcat loads the Cisco IPMA service, a servlet. Cisco Tomcat gets installed at Cisco CallManager installation.

The Cisco IPMA service gets installed on all Cisco CallManager servers in a cluster. After installation, the administrator activates the service from Serviceability, which automatically starts IPMA. When started, the IPMA service checks to see whether it is one of the IPMA servers that is configured in the clusterwide service parameter, Cisco IPMA Server (Primary) IP Address. If it is, the IPMA service attempts to become the active Cisco IPMA service. Currently, a Cisco CallManager cluster supports only one active Cisco IPMA service.

The Cisco IPMA service performs the following tasks:

- Hosts the HTTP services that run on the manager phone.
- Hosts the web pages that the manager uses for configuration.
- Contains the routing logic that applies filters on an incoming call for a manager. See Figure 2-2.
- Communicates to a Cisco CallManager cluster through the Cisco CTIManager for third-party call control. Cisco IPMA requires only one CTI connection for all users in a cluster.
- Accesses data from the database.
- Supports the Assistant Console application.

Figure 2-2 Cisco IPMA Routing Logic for Proxy Line Support

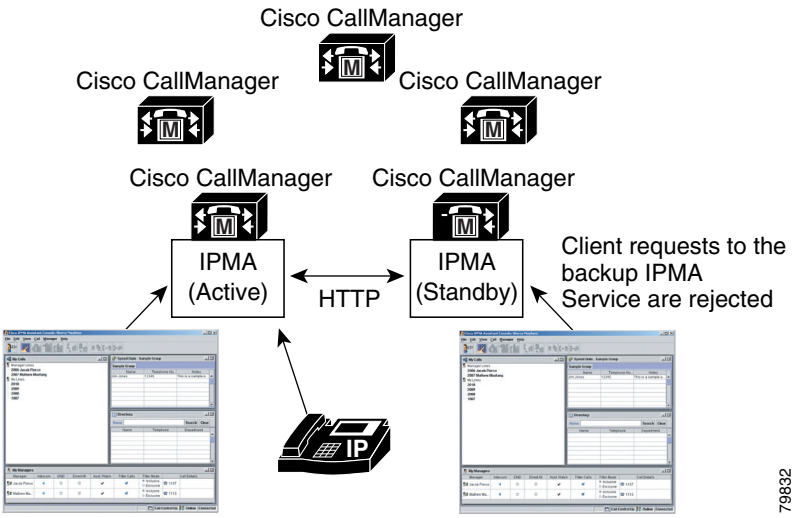


Cisco IPMA provides support for redundancy. To achieve redundancy, you must configure a second Cisco IPMA service in the same cluster.

IPMA implements redundancy by using an active/standby server model. At any time, only one IPMA server remains active and servicing all assistant console applications and phones. The other server stays in a standby mode and will detect failures on the active server. When it detects a failure, the backup server takes over and becomes the active server. All connections that were active get restored on the new server, and service continues uninterrupted to the users.

If the active server fails, the Assistant Console application fails over automatically to the backup server. The Cisco IPMA Assistant Console Heartbeat Interval service parameter (see the "Setting the Service Parameters for Cisco IPMA" section on page 2-18) determines the time that the application takes to detect failure. A shorter heartbeat interval leads to faster failover. See Figure 2-3.

Figure 2-3 Cisco IPMA Redundancy



The Cisco IPMA service includes built-in security to help prevent unauthorized access to its services. The user ID and password that are collected at the assistant console get encrypted before they are sent over the network. The Assistant Console blocks nonauthorized users who are posing as assistants.

Assistant Console Interface

Cisco IPMA supports the following assistant console interfaces for managers and assistants:

- Assistant Console (used for call control, log on, assistant preferences, monitoring managers call activity, keyboard shortcuts)
- Manager configuration (used to configure send all calls target, immediate divert target, and filters)

Administrators use Cisco CallManager Administration, End User Configuration, to configure Cisco IPMA for managers and assistants. See "Manager Assistant Administration Interface" section on page 2-6.

Cisco CallManager makes all Cisco IPMA manager features available through the Cisco IP Phone, except manager configuration, which is available by using a browser. Assistants use the Cisco IP Phone and the assistant console application. See "Manager Interfaces" section on page 2-5 and "Assistant Interfaces" section on page 2-5.

For more information about how to use the Cisco IPMA features, refer to the *Cisco IP Manager Assistant User Guide*.

Cisco IP Phone Interface

Assistants use softkeys to access the Cisco IPMA features, and managers use softkeys and the Cisco IP Phone Services button. For more information about how to use the Cisco IPMA Phone features, refer to the *Cisco IP Manager Assistant User Guide*.

See "Manager Interfaces" section on page 2-5 and "Assistant Interfaces" section on page 2-5.

Cisco IPMA Database Access Architecture

The database stores all Cisco IPMA configuration information. When the manager or assistant logs in, the IPMA service retrieves all data that is related to the manager or assistant from the database and stores it in memory.

Manager Interfaces

The manager phone makes all manager features available with the exception of Manager Configuration. Cisco IPMA automatically logs a manager into the IPMA service when the Cisco IPMA service starts.

The manager can change selected assistants by using the Cisco IP Phone Services button.

The manager accesses the Cisco IPMA features Assistant Watch, Do Not Disturb, Immediate Divert, Intercept Call, and Transfer to Voice Mail from the Cisco IP Phone softkeys.

The state of the features Assistant Watch, Do Not Disturb, Divert All Calls, and Filtering displays in the Status Window on the Cisco IP Phone.

You can enable filtering and choose filter mode by using the Cisco IP Phone Services button. Configuration of the filters occurs by using Manager Configuration. You can access the Manager Configuration on the assistant console by using a web browser (see the "Manager Configuration" section on page 2-32).

Refer to the *Cisco IP Manager Assistant User Guide* for more information.

Assistant Interfaces

The assistant accesses the Cisco IPMA features by using the Assistant Console application and the Cisco IP Phone. The Assistant Console, an application, provides call-control functions such as answer, divert, transfer, and hold. The assistant uses the Assistant Console to log on and log off, to set up assistant preferences, and to display the manager configuration window that is used to configure manager preferences.

The Assistant Console displays the assistant lines and the manager proxy lines. A proxy line specifies a phone line that appears on the assistant Cisco IP Phone. Assistants use the proxy lines to manage calls that are intended for a manager. For more information on setting up proxy lines, see the "Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant" section on page 2-28.

When the assistant logs in from the Assistant Console, the softkeys Immediate Divert and Transfer to Voice Mail become active for the proxy lines. Refer to the *Cisco IP Manager Assistant User Guide* for more information.

Softkeys

The Cisco IPMA feature supports softkeys such as Immediate Divert, Transfer to Voice Mail, and Do Not Disturb on the Cisco IP Phone. Softkeys appear in their appropriate call state; for example, Transfer to Voice Mail does not appear if no active calls exist.

Cisco IPMA supports the following softkey templates:

- Standard IPMA Manager—Supports manager for proxy mode
- Standard IPMA Shared Mode Manager—Supports manager for shared mode
- Standard IPMA Assistant—Supports assistant in proxy or shared mode

Additionally, the system makes call-processing (such as hold and dial) softkeys available with the Standard User template. The administrator configures the appropriate softkey template for the devices that managers and assistants use.

Note The default process assigns call-processing softkey templates to devices.

Administrators can create custom softkey templates in addition to using the standard softkey templates that are included in Cisco CallManager. Use Softkey Template configuration in Cisco CallManager Administration to associate softkey templates with Cisco IPMA devices and to create custom softkey templates. See Softkey Template Configuration in the *Cisco CallManager Administration Guide*.

Manager Assistant Administration Interface

The administrator uses the End User Configuration window in Cisco CallManager Administration to configure the manager and assistant. The administrator chooses the device for the manager and assistant, chooses an incoming intercom line for the manager and assistant, and assigns a proxy line for a manager on the assistant phone.

See the "Manager and Assistant Configuration" section on page 2-24.

System Requirements for Cisco IPMA with Proxy Line Support

Cisco IPMA with proxy line support requires the following software components to operate:

- Cisco CallManager 5.0
- Microsoft Internet Explorer or Netscape Navigator:
  - Cisco IPMA administration (using Cisco CallManager Administration) supports Microsoft Internet Explorer (IE) 6.0 or later and Netscape 7.1 or later.
  - The Assistant Console application installation program supports Microsoft Internet Explorer (IE) 6.0 or later and Netscape 7.1 or later. (See the "Interactions and Restrictions" section on page 2-7 for more information.)
  - The Assistant Console application supports Microsoft Windows 2000 and Microsoft Windows XP.
  - The Manager Configuration application supports Microsoft Internet Explorer (IE) 6.0 or later.
- Bulk Administration Tool (BAT) if bulk adding of managers and assistants is planned.

The following SCCP phones support Cisco IPMA:

- Cisco IP Phone model 7970/71
- Cisco IP Phone model 7960/61
- Cisco IP Phone model 7940/41 (see the "Restrictions" section on page 2-9)

Note Cisco IP Phone model 7960/61 and 7970/71 that are running Cisco IPMA may be equipped with a Cisco model 7914 Expansion Module.

Because Cisco IPMA is installed automatically on the same server with Cisco CallManager, you do not require an additional server.

Interactions and Restrictions

The following sections describe the interactions and restrictions for Cisco IPMA with proxy line support:

- Interactions, page 2-7
- Restrictions, page 2-9

Interactions

The following sections describe how Cisco IPMA with proxy line support interacts with Cisco CallManager applications and call processing:

- Bulk Administration Tool, page 2-7
- Extension Mobility, page 2-7
- Reporting Tools, page 2-8
- Multilevel Precedence and Preemption (MLPP), page 2-9
- Time-of-Day Routing, page 2-9

Bulk Administration Tool

The administrator can use the Bulk Administration Tool (BAT) to add many users (managers and assistants) at once instead of adding users individually. Refer to the *Cisco CallManager Bulk Administration Guide* for more information.

Additional Information

See the "Related Topics" section on page 2-33.

Extension Mobility

A manager who uses the Cisco CallManager Extension Mobility feature can simultaneously use Cisco IPMA. The manager logs into the Cisco IP Phone by using extension mobility and then chooses the Cisco IPMA service. When the IPMA service starts, the manager can access assistants and all IPMA features (such as call filtering and Do Not Disturb).

To have access to Cisco CallManager Extension Mobility with IPMA, the administrator checks the Mobile Manager check box in the Cisco IPMA Manager Configuration window in Cisco CallManager Administration (which is accessed from the End User Configuration window). See the "Configuring a Manager and Assigning an Assistant for Proxy Line Mode" section on page 2-25. For more information

about configuring device profiles, see Configuring a New User Device Profile in the *Cisco CallManager Administration Guide*. For more information about Cisco CallManager Extension Mobility, see Chapter 1, "Cisco CallManager Extension Mobility."

Reporting Tools

Cisco IPMA provides statistical information in the CDR Analysis and Reporting (CAR) tool and provides a summary of changes to configurations in a change log. The following sections describe these reporting tools.

CDR Analysis and Reporting

Cisco IPMA supports call-completion statistics for managers and assistants and inventory reporting for managers and assistants. The CDR Analysis and Reporting (CAR) tool supports call-completion statistics. Cisco CallManager Serviceability supports inventory reporting. Refer to the *Cisco CallManager Serviceability System Guide*, the *Cisco CallManager Serviceability Administration Guide*, and the *CDR Analysis and Reporting Administration Guide* for more information.

IPMA_ChangeLog

The administrator can view a summary of changes that are made to the Manager or Assistant Configurations. A manager can change defaults by accessing the Manager Configuration from a URL.

An assistant can change the manager defaults from the Assistant Console.

Note Refer to the *Cisco IP Manager Assistant User Guide* for information about the URL and Manager Configuration.

When changes are made, the information gets sent to a log file that is called ipma_changeLogxxx.log. The log file resides on the server that runs the IPMA service at the following location:

file get activelog tomcat/logs/ipma/log4j

The administrator can download this file from the server by using the Trace Collection Tool in the Serviceability Real-Time Monitoring Tool (RTMT). Refer to the *Cisco CallManager Serviceability Administration Guide* for more information.

The log file contains the following fields:

- LineNumber—The line in the log file with information about changes
- TimeStamp—The time that the configuration changed
- for Manager/Assistant—Designation of whether the change is for the manager or the assistant
- for Userid—The userid of the manager or assistant that is being changed
- by Manager/Assistant—Designation of whether the manager or the assistant made the change
- by Userid—The userid of the manager or assistant who made the change
- Parameter Name—What changed; for example, divert target number
- Old Value—The value of the information before the change
- New Value—The value of the information after the change

Because the information in the log file is comma delimited, the administrator can open the log file by using a spreadsheet application such as Microsoft Excel. Use the following procedure to save the log file contents to the Microsoft Excel application.

Procedure

Step 1 Start the Microsoft Excel application.

Step 2 To open the ConfigChange*.log file, choose **File > Open**.

Step 3 Choose the Original data type, file type as Delimited, and click **Next**.

Step 4 Choose Delimiters as Comma and click **Next**.

Step 5 When complete, click **Finish**.

Multilevel Precedence and Preemption (MLPP)

The following points describe the interactions between Cisco IPMA with proxy line support and MLPP:

- IPMA preserves call precedence in the handling of calls. For example, when an assistant diverts a call to a manager, IPMA preserves the precedence of the call.
- Filtering of precedence calls occurs in the same manner as all other calls. The precedence of a call will not affect whether a call is filtered.
- Because IPMA does not perceive the precedence of a call, it does not provide any additional indication of the precedence of a call on the assistant console.

Time-of-Day Routing

Time-of-Day routing routes calls to different locations based on the time that the call gets made; for example, during business hours, calls get routed to a manager office, and after hours, the calls go directly to voice-messaging service.

Partitions specify the time schedule and time zone that Time-of-Day routing uses. IPMA partitions and partitions in IPMA calling search spaces support Time-of-Day routing.

For more information about Time-of-Day routing, see Time-of-Day Routing in the *Cisco CallManager System Guide*.

Restrictions

The following restrictions apply to Cisco IPMA:

- Cisco IPMA does not support Cisco IP SIP phones.
- One manager can have up to 10 assigned assistants.
- One assistant can support up to 33 managers (if each manager has one IPMA-controlled line).
- Cisco IPMA supports up to 1024 managers and 1024 assistants per Cisco CallManager cluster.
- Cisco IPMA Assistant Console does not support hunt groups/queues.
- Cisco IPMA Assistant Console does not support record and monitoring.
- Cisco IPMA Assistant Console does not support onhook transfer (the ability to transfer a call by pressing the Transfer softkey and going onhook to complete the transfer).
- Cisco IPMA Assistant Console does not support the one-touch Call Pickup feature.
- Cisco IP Phone model 7940 supports only two lines or speed-dial buttons.

- To install the Assistant Console application on a computer with Microsoft IE version 6 on Windows XP, install the Microsoft Java Virtual Machine (JVM) with Windows XP Service Pack 1 before the Assistant Console installation.

Installing and Activating Cisco IPMA

Cisco Tomcat loads the Cisco IPMA, a servlet. Cisco Tomcat gets installed and started at Cisco CallManager installation. For more information, see the "Cisco IPMA Service" section on page 2-2.

The administrator performs three steps after installation to make Cisco IPMA available for system use:

1. Use Cisco CallManager Serviceability Service Activation, located on the Tools menu, to activate the Cisco IP Manager Assistant service. Refer to the *Cisco CallManager Serviceability Administration Guide*.
2. Configure the applicable service parameters for the Cisco IP Manager Assistant service. See the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.
3. Use Serviceability Control Center Feature Service web page to stop and start the Cisco IPMA service. See the "Starting the Cisco IPMA Service" section on page 2-20.

Note If the managers and assistants will require Cisco IPMA features to display (on the phone and assistant console) in any language other than English, verify that the locale installer is installed before configuring Cisco IPMA. Refer to the Cisco IP Telephony Locale Installer documentation.

Configuring Cisco IPMA with Proxy Line Support

For successful configuration of Cisco IPMA, review the steps in the configuration checklist, perform the system, user, and device configuration requirements, and configure the managers and assistants.

Note Cisco IPMA with proxy line support coexists in the same Cisco CallManager cluster with Cisco IPMA with shared line support. For configuration information about shared line support, see Configuring Cisco IPMA with Shared Line Support.

The following sections provide configuration information:

- Configuration Checklist for Cisco IPMA with Proxy Line Support, page 2-11
- System Configuration with Proxy Line Support, page 2-13
- Setting the Service Parameters for Cisco IPMA, page 2-18
- Security Considerations, page 2-20
- Starting the Cisco IPMA Service, page 2-20
- Cisco IP Phone Service Configuration, page 2-20
- Manager and Assistant Phone Configuration, page 2-21
- Manager and Assistant Configuration, page 2-24

Configuration Checklist for Cisco IPMA with Proxy Line Support

Table 2-1 shows the logical steps for configuring the Cisco IP Manager Assistant feature in Cisco CallManager.

Before You Begin

The information in the checklist assumes that you have already configured the phones and the users and have associated the devices to the users. Refer to Adding an End User, Associating Devices to an End User, and Configuring Cisco IP Phones in the *Cisco CallManager Administration Guide*.

Table 2-1 Cisco IP Manager Assistant Configuration Checklist with Proxy Line Support

Configuration Steps		Related Procedures and Topics
Step 1	Using Cisco CallManager Serviceability, Service Activation, activate Cisco IP Manager Assistant service.	*Cisco CallManager Serviceability Administration Guide*
Step 2	Configure system administration parameters: • Add three partitions. • Add two calling search spaces. • Add the CTI route point for IPMA. You can have only one route point per server. • Configure IPMA service parameters. **Tip** To automatically configure these system administration parameters, use the Cisco IPMA Configuration Wizard. For more information, see the "Cisco IPMA Configuration Wizard" section on page 2-13.	Calling Search Space and Partitions, page 2-16 Configuring a Partition, *Cisco CallManager Administration Guide* Configuring a Calling Search Space, *Cisco CallManager Administration Guide* Cisco IPMA Route Point, page 2-17 Configuring a CTI Route Point, *Cisco CallManager Administration Guide* Cisco IPMA Configuration Wizard, page 2-13 Setting the Service Parameters for Cisco IPMA, page 2-18 Service Parameters Configuration, *Cisco CallManager Administration Guide*
Step 3	• Configure the application user CAPF profile (optional). • Configure IPMA service parameters for security (optional).	Setting the Service Parameters for Cisco IPMA, page 2-18 Security Considerations, page 2-20
Step 4	Using the Serviceability Control Center Feature Services, stop and start the Cisco IPMA service.	Starting the Cisco IPMA Service, page 2-20
Step 5	Configure phone parameters: • Add IPMA service as a Cisco IP Phone service. • Configure Cisco IP Phone.	Cisco IP Phone Service Configuration, page 2-20 Configuring a Cisco IP Phone Service, *Cisco CallManager Administration Guide* Configuring Phone Button Templates, *Cisco CallManager Administration Guide*
Step 6	Configure manager and assistant Cisco IP Phone parameters: • Set up manager phone. • Set up assistant phone.	Configuring Cisco IP Phones, *Cisco CallManager Administration Guide*

Table 2-1 Cisco IP Manager Assistant Configuration Checklist with Proxy Line Support (continued)

Configuration Steps		Related Procedures and Topics
Step 7	Configure manager phone settings: • Assign a softkey template. • Add a primary line. • Set up voice-mail profile on primary line. • Add incoming intercom line. • Add speed dial for outgoing intercom targets. • Subscribe to Cisco IP Phone Service, Cisco IPMA. • Set user locale. • Reset the phone. **Tip** To automatically configure some of the manager phone settings, choose the automatic configuration check box on the Cisco IPMA Manager Configuration window. For more information, see the "Manager Phones" section on page 2-22.	Manager and Assistant Phone Configuration, page 2-21 Finding a Phone, *Cisco CallManager Administration Guide* Deleting a Phone, *Cisco CallManager Administration Guide* Directory Number Configuration Overview, *Cisco CallManager Administration Guide* Configuring Speed-Dial Buttons, *Cisco CallManager Administration Guide* Cisco IP Phone Service Configuration, page 2-20 Configuring Cisco IP Phone Services, *Cisco CallManager Administration Guide* Resetting a Phone, *Cisco CallManager Administration Guide*
Step 8	Configure assistant phone settings: • Assign a softkey template. • Add a Cisco 14-button expansion module (7914) (optional). • Assign the Standard IPMA Assistant phone button template. • Add a primary line. • Add proxy lines for each configured manager. Add a voice-mail profile that is the same as the voice-mail profile on the manager primary line. • Add incoming intercom line. • Add speed dial to the incoming intercom line for each configured manager. • Set user locale. • Reset the phone. **Tip** To automatically configure some assistant phone settings, choose the Automatic Configuration check box on the Cisco IPMA Assistant Configuration window. For more information, see the "Assistant Phones" section on page 2-23.	Manager and Assistant Phone Configuration, page 2-21 Finding a Phone, *Cisco CallManager Administration Guide* Deleting a Phone, *Cisco CallManager Administration Guide* Directory Number Configuration Overview, *Cisco CallManager Administration Guide* Configuring Speed-Dial Buttons, *Cisco CallManager Administration Guide* Resetting a Phone, *Cisco CallManager Administration Guide*
Step 9	Configure Cisco IP Manager Assistant application: • Create a new manager. • Configure lines for manager. • Assign an assistant to a manager. • Configure lines for the assistant.	Configuring a Manager and Assigning an Assistant for Proxy Line Mode, page 2-25 Deleting Cisco IPMA Information from the Manager, page 2-26 Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant, page 2-28

Table 2-1 Cisco IP Manager Assistant Configuration Checklist with Proxy Line Support (continued)

Configuration Steps		Related Procedures and Topics
Step 10	Configure the dial rules for the assistant.	Dial Rules Configuration, page 2-31
Step 11	Install the Assistant Console application.	Installing the Assistant Console Application, page 2-32
Step 12	Configure the manager and assistant console applications.	*Cisco IP Manager Assistant User Guide*

System Configuration with Proxy Line Support

Because the Cisco IPMA service intercepts calls that are made to managers who are using proxy line mode, it requires configuration of partitions, calling search spaces, and route points. For more information on configuring Cisco IPMA, see the "Configuration Checklist for Cisco IPMA with Proxy Line Support" section on page 2-11.

You must perform the following configurations before you configure devices and users for Cisco IPMA:

- Calling Search Space and Partitions, page 2-16
- Cisco IPMA Route Point, page 2-17

Cisco IPMA provides a one-time-use configuration wizard that helps the administrator configure partitions, calling search spaces, a route point, and the IPMA phone service. The Cisco IPMA Configuration Wizard also creates the Cisco IP Manager Assistant service parameters in the IPMA Device Configuration Defaults section. For more information on the Cisco IPMA Configuration Wizard, see the "Cisco IPMA Configuration Wizard" section on page 2-13.

Note This document provides specific information about IPMA configuration. For more information about configuring Calling Search Spaces, Partitions, and CTI Route Points, refer to the *Cisco CallManager Administration Guide*.

Cisco IPMA Configuration Wizard

With the Cisco IPMA Configuration Wizard, IPMA configuration takes less time and eliminates errors. The partitions, calling search spaces, and route point automatically get created when the administrator successfully runs and completes the configuration wizard. The wizard also creates BAT templates for the IPMA manager phone, the IPMA assistant phone, and all other user phones. The administrator can use the BAT templates to configure the managers, assistants, and all other users. Refer to the *Cisco CallManager Bulk Administration Guide*.

Note The Cisco IPMA Configuration Wizard only creates the Cisco IP Manager Assistant service parameters in the IPMA Device Configuration Defaults section of the Service Parameters Configuration window. You must enter the remaining service parameters manually. For service parameter information, see the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.

The Cisco IPMA Configuration Wizard provides windows for each configuration parameter. The windows provide the administrator with preconfigured information. If the administrator prefers to use other configuration information (for example, partition names), the administrator can change the preconfigured information to the appropriate information.

Perform the following procedure to configure the Cisco IPMA system parameters by using the Cisco IPMA Configuration Wizard.

Before You Begin

Ensure that the configuration wizard runs from the same server (the Cisco CallManager server) as the Bulk Administration Tool (BAT).

Procedure

Step 1 From the Cisco CallManager Administration window, choose **Application > Cisco IPMA Configuration Wizard**.

The Cisco IPMA Configuration Wizard Overview window displays and provides a description of the configuration wizard process.

Note You can use the Cisco IPMA Configuration Wizard only once in a Cisco CallManager cluster configuration. The feature verifies the number of times that the configuration wizard has been run (zero or 1). If the configuration wizard has been run once, the summary window automatically displays. The summary window displays the details and status of the configuration wizard that was previously run. If the configuration has not been run, the configuration process continues.

Step 2 To begin the IPMA wizard process, click the **Next** button.

The Partition for Managers window displays.

Step 3 Enter a name in the partition name field and provide a description; otherwise, use the default partition name and description.

Step 4 Click the **Next** button.

The Partition for IPMA window displays.

Step 5 Enter a name in the partition name field and provide a description; otherwise, use the default partition name and description.

Step 6 Click the **Next** button.

The Partition for All Users window displays.

Step 7 Enter a name in the partition name field and provide a description; otherwise, use the default partition name and description.

Step 8 Click the **Next** button.

The Manager Calling Search Space window displays.

Step 9 Enter a name in the calling search space name field and provide a description; otherwise, use the default calling search space name and description.

The Available Partitions and Selected Partitions boxes under the Route Partitions for this Calling Search Space automatically list Partitions for the Manager Calling Search Space. If the defaults that are provided are not wanted, the administrator can choose the applicable partition from the Available Partitions box. Use the up and down arrows to move partitions from one box to the other.

Step 10 Click the **Next** button.

The IPMA Calling Search Space window displays.

Step 11 Enter a name in the calling search space name field and provide a description; otherwise, use the default calling search space name and description.

The Available Partitions and Selected Partitions boxes under the Additional Route Partitions for This Calling Search Space automatically list Partitions for the IPMA Calling Search Space. If the defaults that are provided are not wanted, the administrator can choose the applicable partition from the Available Partitions box. Use the up and down arrows to move partitions from one box to the other.

Step 12 Click the **Next** button.

If you have existing calling search spaces that are configured in the system, the Existing Calling Search Spaces window displays; otherwise, the Existing Calling Search Spaces window does not display (proceed to Step 13).

Cisco IPMA requires that existing calling search spaces add the prefix Generated_IPMA and Generated_IPMA_Everyone partitions. The Available and Selected Partitions boxes under the Calling Search Spaces Configured with IPMA Partitions automatically list these partitions. Use the up and down arrows to move partitions from one box to the other.

Note The prefix that is added to the existing calling search spaces may change if the administrator has changed the names of the partitions in Steps 5 and 7.

Step 13 Click the **Next** button.

The IPMA CTI Route Point window displays.

Step 14 Enter a name in the CTI route point name field; otherwise, use the default CTI route point name.

Step 15 From the drop-down selection list box, choose the appropriate device pool.

Step 16 Enter a route point directory number; otherwise, use the default route point directory number.

Step 17 Click the **Next** button.

The IPMA Phone Service window displays.

Step 18 Enter the IPMA Phone Service name; otherwise, use the default IPMA Phone Service name.

Step 19 From the drop-down selection list box, choose the primary IPMA server or enter a server name or IP address in the Enter Server Name/IP Address field.

Step 20 Click the **Next** button.

The Cisco IPMA Configuration Wizard Confirmation window displays. It provides all the information that the administrator chose while using the configuration wizard. If the information is not correct, the administrator can cancel the configuration process or return to the previous configuration windows.

Step 21 To allow the configuration process to execute, click the **Finish** button; otherwise, to cancel the configuration process, click the **Cancel** button.

Upon completion, a final status window displays. The window shows the success or failure of each part of the wizard.

Any errors that the configuration wizard generates get sent to the trace file that is located in /var/log/active/tomcat/logs/ccmadmin/log4j/ccmadmin*.log.

This file can be accessed by using the following CLI command:

```
file get activelog tomcat/logs/ccmadmin/log4j
```

With the data that is collected from the configuration windows, the wizard automatically creates the partitions, calling search spaces, a route point, and the IPMA phone service. The wizard populates the Cisco IP Manager Assistant service parameters in the IPMA Device Configuration Defaults section of the Service Parameters Configuration window. Additionally, the wizard creates the IPMA manager

phone template, the IPMA assistant phone template, and the Everyone phone template that BAT uses to configure phones for use with Cisco IPMA. Refer to the *Cisco CallManager Bulk Administration Guide* for information about configuring the manager and assistant devices.

Calling Search Space and Partitions

A Cisco IPMA route point intercepts calls for the managers and determines where to route them; therefore, all calls for the managers should flow through the route point first.

To accomplish the call flow, Cisco IPMA uses calling search spaces. Calls from lines that the Cisco IPMA service must route or act upon should have a calling search space that has the route point partition (you can call this partition IPMA) that is configured as the primary partition, and you can call the secondary partition the Everyone partition. See the following example.

Note For a manager who has multiple lines and who uses proxy line support, those lines must fall in the range covered by the route point (for example, a route point of 1xxx means that manager lines must fall in 1000 - 1999 range).

Example

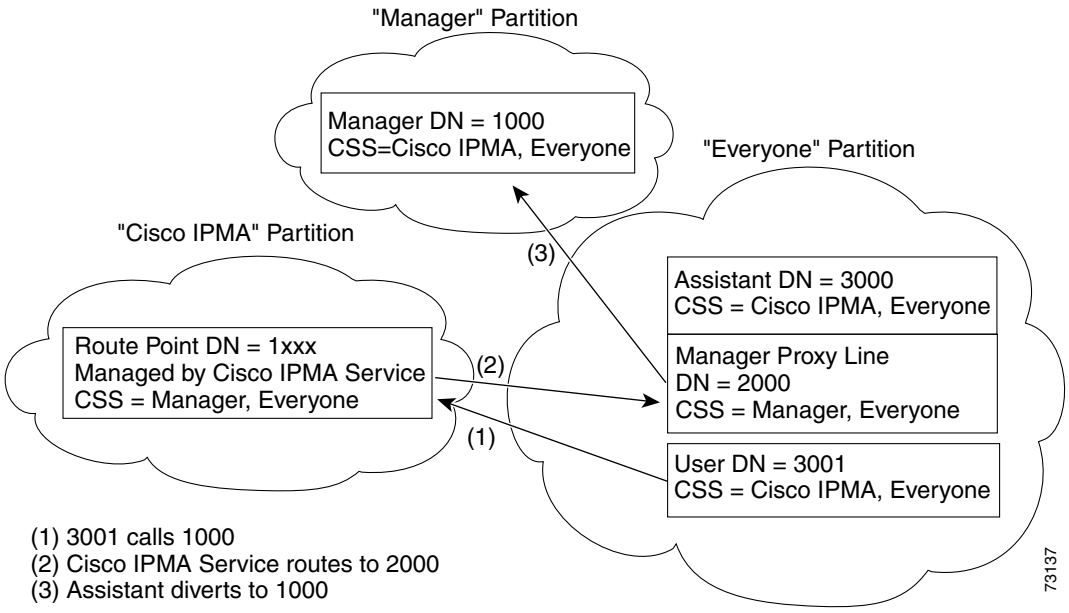
A user (in Everyone partition) places a call to a manager primary line (in Manager partition). Because the partition for the originating call does not include the manager primary line, the manager line number gets searched through the calling search space. The order of priority of the partitions in the calling search space provides basis for the search. Because the user line has a calling search space that comprises IPMA and Everyone, the search for the manager primary line begins with the IPMA partition. Because the Cisco IPMA route point matches the manager primary number, the call gets presented to the route point. The Cisco IPMA service that is monitoring the route point gets the call and routes the call by using the manager settings.

All lines that have calls that should go through a route point should have a calling search space that is called IPMA and Everyone. Examples of lines that require this calling search space configuration include manager primary and private lines, assistant primary line, and all other user lines.

All lines that have calls that should go directly to the manager without having the routing logic applied on them should have a calling search space that is called Managers and Everyone. Examples of lines that require this calling search space configuration include Cisco IPMA route point and assistant proxy lines.

See Figure 2-4 for an example of the calling search space and partition configuration.

Figure 2-4 Cisco IPMA Calling Search Space and Partition Configuration Example for Proxy Line Support



Configuration Tips

- Create three partitions that are called Cisco IPMA, Manager, and Everyone.
- Create a calling search space that is called CSS-M-E, which contains the partitions Manager and Everyone.
- Create a calling search space that is called CSS-I-E, which contains the partitions Cisco IPMA and Everyone
- Configure the manager primary and private directory numbers (DN) in the partition that is called Manager.
- Configure all assistants lines and other users lines in the partition that is called Everyone.
- Configure the Cisco IPMA route point in the partition that is called Cisco IPMA.

Cisco IPMA Route Point

You can have only one Cisco IPMA route point for each server. The directory numbers of Cisco IPMA route points must match the primary and private directory numbers of the manager; otherwise, the Cisco IPMA service routes calls inappropriately. Cisco recommends the use of wild cards to satisfy this condition.

Configuration Tips

- Create a route point that is called IPMA_RP.
- Configure the directory numbers of the route point to match the primary and private directory numbers of the managers (for example, for managers whose primary directory numbers are 1000-1999, create a route point DN as 1xxx for line 1; for managers whose primary directory numbers are 2000-2999, create a route point DN as 2xxx for line 2). Configure the directory numbers in the Cisco IPMA partition with a calling search space of CSS-M-E.

- Configure Call Forward No Answer with Destination Internal/External as Route Point DN (for example, CFNA as 1xxx for the Route Point DN 1xxx) with a calling search space of CSS-M-E. Call Forward No Answer forwards the call to the manager if the IPMA service is not available.

Setting the Service Parameters for Cisco IPMA

Service Parameters for the Cisco IPMA service comprise two categories: general and clusterwide. Specify clusterwide parameters once for all Cisco IPMA services. Specify general parameters for each Cisco IPMA service that is installed.

Set the Cisco IPMA service parameters by using Cisco CallManager Administration to access the service parameters (**System > Service Parameters**). Choose the server where the Cisco IPMA application resides and then choose the Cisco IP Manager Assistant service.

Cisco IPMA includes the following service parameters that must be configured:

- Clusterwide
  - Cisco IPMA Server (Primary) IP Address—No default. Administrator must manually enter this IP address.
  - Cisco IPMA Server (Backup) IP Address—No default. Administrator must manually enter this IP address.
  - Cisco IPMA Server Port—Default specifies Port 2912.
  - Cisco IPMA Assistant Console Heartbeat Interval—Default specifies 30 seconds. This interval timer specifies how long it takes for the failover to occur on the assistant console.
  - Cisco IPMA Assistant Console Request Timeout—Default specifies 30 seconds.
  - Cisco IPMA RNA Forward Calls—Default specifies False. If the parameter is set to True, an assistant phone that does not get answered will forward to another assistant phone.
  - Cisco IPMA RNA Timeout—Default specifies 10 seconds. RNA timeout specifies how long an assistant phone can go unanswered before the call is forwarded to another assistant phone. If Call Forward No Answer (CFNA) and RNA timeout are both configured, the first timeout occurrence takes precedence.
  - CTIManager Connection Security Flag—This service parameter indicates whether security for Cisco IPMA service CTIManager connection is enabled or disabled. If enabled, Cisco IPMA will open a secure connection to CTIManager by using the Application CAPF profile that is configured in the CAPF Profile Instance Id for Secure Connection to CTIManager service parameter.
- Cisco IPMA Service Parameters for each server
  - CTIManager (Primary) IP Address—No default. Enter the IP address of the primary CTIManager that will be used for call control.
  - CTIManager (Backup) IP Address—No default. Administrator must manually enter this IP address.
  - Route Point Device Name for Proxy Mode—No default. Choose the Cisco IPMA route point device name (that you configure by using **Device > CTI Route Point**).
  - CAPF Profile Instance Id for Secure Connection to CTIManager—This service parameter specifies the Instance Id of the Application CAPF Profile for the Application User IPMASecureSysUser that this Cisco IPMA server will use to open a secure connection to CTIManager. You must configure this parameter if CTIManager Connection Security Flag is enabled.

Cisco IPMA includes the following clusterwide parameters that must be configured if you want to use the IPMA automatic configuration for managers and assistants:

- Softkey Templates
  - Assistant Softkey Template—Default specifies Standard IPMA Assistant softkey template. This parameter specifies the softkey template that is assigned to the assistant device during IPMA assistant automatic configuration.
  - Manager Softkey Template for Proxy Mode—Default specifies Standard IPMA Manager softkey template. This parameter specifies the softkey template that is assigned to the manager device during IPMA manager automatic configuration.
  - Manager Softkey Template for Shared Mode—Default specifies Standard IPMA Shared Mode Manager. This service parameter does not apply to proxy line support.
- IPMA Device Configuration Defaults
  - Manager Partition—No default. This parameter specifies the partition that the IPMA automatic configuration assigns to the manager line(s) that IPMA handles on the manager device. Enter a partition that exists in the system. If you run the Cisco IPMA Configuration Wizard, the wizard populates this value.
  - All User Partition—No default. This parameter specifies the partition that the IPMA automatic configuration assigns to the proxy line(s) and the intercom line on the assistant device as well as the intercom line on the manager device. Enter a partition that exists in the system. If you run the Cisco IPMA Configuration Wizard, the wizard populates this value.
  - IPMA Calling Search Space—No default. This parameter specifies the calling search space that the IPMA automatic configuration assigns to the manager line(s) that IPMA handles and the intercom line on manager device as well as the assistant intercom line on assistant device. Enter a calling search space that exists in the system. If you run the Cisco IPMA Configuration Wizard, the wizard populates this value.
  - Manager Calling Search Space—No default. This parameter specifies the calling search space that the IPMA automatic configuration assigns to the proxy line(s) on the assistant device. Enter a calling search space that exists in the system. If you run the Cisco IPMA Configuration Wizard, the wizard populates this value.
  - Cisco IPMA Phone Service—No default. This parameter specifies the IPMA phone service that the automatic configuration assigns to the manager device. If you run the Cisco IPMA Configuration Wizard, the wizard populates this value.
- Proxy Directory Number Range
  - Starting Directory Number—No default. The Starting Directory Number and the Ending Directory Number parameters provide a range of proxy numbers that are available for the IPMA assistant configuration. The Starting Directory Number parameter specifies the first directory number in the range. The next available number in the range displays in the Proxy Line field in the User Configuration window when you are configuring an assistant.
  - Ending Directory Number—No default. The Starting Directory Number and the Ending Directory Number parameters provide a range of proxy numbers that are available for the IPMA assistant configuration. The Ending Directory Number parameter specifies the last directory number in the range. If you enter a smaller value in the Ending Directory Number field than you do in the Starting Directory Number field, an error displays when you access the IPMA configuration of an assistant in the User Configuration window.

- Proxy Directory Number Prefix
  - Number of Characters to be Stripped from Manager Directory Number—Default specifies 0. This parameter specifies the number of characters that Cisco CallManager strips from a manager IPMA directory number (DN) in the process of generating a proxy DN. You can use this parameter along with the Prefix for Manager Directory Number parameter to generate a proxy DN. For example, if you strip 2 digits from a manager DN of 2002 and add a prefix of 30 (specified in the Prefix for Manager Directory Number service parameter), Cisco CallManager generates a proxy DN of 3002. You can strip 0 to 24 characters.
  - Prefix for Manager DN—No default. This parameter specifies the prefix that Cisco CallManager adds to a manager DN in the process of generating the proxy DN. For example, if manager DN is 1001, number of characters to be stripped is 0, and the prefix is *, Cisco CallManager generates a proxy DN of *1001. The maximum prefix length equals 24.

Security Considerations

Cisco IPMA supports a secure connection to CTI (transport layer security connection).

The administrator must configure a CAPF profile (one for each IPMA node) by choosing **User Management > Application User CAPF Profile**. From the Application User drop-down list box that is on the Application User CAPF Profile Configuration window, the administrator chooses IPMASecureSysUser.

For more information about configuring security for IPMA, see the information on the CTIManager Connection Security Flag and the CAPF Profile Instance Id for Secure Connection to CTIManager service parameters in the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.

The *Cisco CallManager Security Guide* provides detailed security configuration procedures for CTI applications.

Starting the Cisco IPMA Service

Cisco IPMA service runs as an application on Cisco Tomcat. To start or stop the Cisco IPMA service, use the Serviceability Control Center Feature Services window.

Cisco IP Phone Service Configuration

Add the Cisco IPMA service as a new Cisco IP Phone Service. Configure a name, description, and the URL for the Cisco IPMA service. The name and description that you enter should be in the local language because it displays on the manager Cisco IP Phone. For more information, see Cisco IP Phone Services Configuration in the *Cisco CallManager Administration Guide*.

Provide a URL by using the format
http://<server-ipaddress>:8080/ma/servlet/MAService?cmd=doPhoneService&Name=#DEVICENAME#

For example
http://123.45.67.89:8080/ma/servlet/MAService?cmd=doPhoneService&Name=#DEVICENAME#

Configuration Tips

To provide redundancy for the Cisco IP Phone Service, create a Cisco IP Phone Service that uses the host name rather than the IP address. The host name in DNS should resolve to both IPMA primary and backup IP addresses. The phone functionality for softkeys and filtering, as well as the phone service, will fail over automatically in the case of a failover.

Manager and Assistant Phone Configuration

You must configure devices for each IPMA manager and assistant. Before you begin, complete the following tasks, depending on the phone type.

Cisco IP Phone Model 7940/41, Model 7960/61, and Model 7970/71S

- Add a Cisco IP Phone model 7940/41, model 7960/61, or model 7970/71 for each manager and assistant that will be using Cisco IPMA. To add these phones, use one of the following methods:
  - Manually (**Device > Phone**)
  - Auto registration
  - BAT
- Assign the Standard IPMA Assistant phone button template for each assistant.

Cisco IP Phone Model 7940/41

You can use the Cisco IP Phone model 7940/41 for IPMA, but certain restrictions apply.

- Add a Cisco IP Phone model 7940/41 for each manager with the following items configured:
  - Two lines, one for the primary line and one for the intercom
  - Softkey template for manager with shared line support
- Add a Cisco IP Phone model 7940/41 for each assistant with the following items configured:
  - Two lines, one for the primary line and one for the intercom
  - Softkey template for assistant

Note Cisco supports the Cisco IP Phone model 7940/41 for IPMA but recommends the Cisco IP Phone model 7960/61 or model 7970/71 because they provide more functionality.

After you complete these tasks, configure the phones as described in the following sections:

- Manager Phones, page 2-22
- Assistant Phones, page 2-23
- Nonmanager and Nonassistant Phones, page 2-24

Manager Phones

The following section describes the IPMA requirements and tips for configuring a manager phone.

Manager Phone Configuration

Configure the manager Cisco IP Phones with the following settings:

- Standard IPMA Manager softkey template (must include the Immediate Divert and Transfer to Voice Mail softkeys)
- Primary line
- Additional lines if required
- Voice-messaging profile on primary line
- Incoming intercom line to support the auto answer with speakerphone or headset option
- Speed dial for outgoing intercom targets
- Subscribe to Cisco IP Phone Service, Cisco IPMA
- Set user locale

You can automate some of these settings by choosing the Automatic Configuration check box on the Cisco IPMA Manager Configuration window when you configure the manager. Automatic Configuration sets the following items for the manager device or device profile:

- Softkey template
- Subscription to IPMA phone service
- Calling search space and partition for IPMA-controlled selected lines and intercom line
- Auto answer with speakerphone for intercom line

Before you can automatically configure a manager phone, you must set the Cisco IPMA service parameters in the IPMA Device Configuration Defaults section. These parameters specify information such as which partition and calling search space to use for a manager line. You can enter these parameters manually, or you can populate the parameters by using the Cisco IPMA Configuration Wizard. For more information about these parameters, see the "Setting the Service Parameters for Cisco IPMA" section on page 2-18. For more information on the Cisco IPMA Configuration Wizard, see the "Cisco IPMA Configuration Wizard" section on page 2-13.

After you enter the appropriate service parameters, you can automatically configure a manager phone by choosing the **Automatic Configuration** check box on the Cisco IPMA Manager Configuration window and clicking **Save**. For step-by-step instructions, see the "Configuring a Manager and Assigning an Assistant for Proxy Line Mode" section on page 2-25.

Configuration Tips for Manager

- Do not configure Call Forward All Calls on the manager primary DN because the manager cannot intercept calls that are routed to the assistant proxy DN when Call Forward All Calls is set.
- Configure primary lines (IPMA-controlled lines) and assign DNs; use the Managers partition and the CSS-I-E calling search space for these lines if not using the automatic configuration.
- Configure an incoming intercom line and assign a DN; use the Everyone partition and the CSS-I-E calling search space if not using the automatic configuration.

IPMA supports the Cisco IP Phone model 7940. For more information, see the "Cisco IP Phone Model 7940/41" section on page 2-21.

Assistant Phones

The following section describes the IPMA requirements for configuring an assistant phone and provides tips on configuring an assistant phone.

Assistant Phone Configuration

Configure the assistant Cisco IP Phones with the following settings:

- Standard IPMA Assistant softkey template (must include the Immediate Divert and Transfer to Voice Mail softkeys)
- Default 14-button expansion module (optional for Model 7960 only)
- Standard IPMA Assistant phone button template (if using the 14-button expansion module)
- Primary line
- Proxy lines for each configured manager with a voice-mail profile that is the same as the manager voice-mail profile
- Incoming intercom line to support the auto answer with speakerphone or headset option
- Speed dial to incoming intercom line for each configured manager
- Set user locale

You can automate some of these settings by choosing the Automatic Configuration check box on the Cisco IPMA Assistant Configuration window when you configure the assistant. Automatic Configuration sets the following items for the assistant device or device profile:

- Softkey template
- Phone button template
- Calling search space and partition for existing proxy lines and intercom line
- Auto answer with speakerphone for intercom line
- Autogenerated proxy lines creation, if chosen

Before you can automatically configure an assistant phone, you must set the Cisco IPMA service parameters in the Device Configuration Defaults section. These parameters specify information such as which partition and calling search space to use for assistant proxy and intercom lines. You can enter these parameters manually, or you can populate the parameters by using the Cisco IPMA Configuration Wizard. For more information about these parameters, see the "Setting the Service Parameters for Cisco IPMA" section on page 2-18. For more information on the Cisco IPMA Configuration Wizard, see the "Cisco IPMA Configuration Wizard" section on page 2-13.

After you have entered the appropriate service parameters, you can automatically configure an assistant phone by choosing the **Automatic Configuration** check box on the Cisco IPMA Assistant Configuration window. For step-by-step instructions, see the "Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant" section on page 2-28.

Automatic configuration allows you to create a proxy line automatically (with the required calling search space and partition information) on the assistant phone. The autogenerated proxy numbers get generated from the values that you enter for the Proxy Directory Number Range and Proxy Directory Number Prefix service parameters as described in the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.

Autogenerated numbers appear along with lines on the assistant device in the Proxy Line drop-down list box on the Cisco IPMA Assistant Configuration window when you configure the assistant. "Line" appears before existing lines on the assistant phone. "Auto" appears before each autogenerated number until the system adds that proxy line to an assistant phone. The system sets the calling search space and

partition for the proxy line and the intercom line, if any, on the basis of the Cisco IPMA service parameter settings. For step-by-step instructions, see the "Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant" section on page 2-28.

Configuration Tips for Assistant

- Configure an incoming intercom line and assign a DN; use the Everyone partition and the CSS-I-E calling search space if you are not using the automatic configuration.
- Configure a proxy line and assign a DN for each manager that the assistant will support; use the Everyone partition and the CSS-M-E calling search space if you are not using the automatic configuration.

IPMA supports the Cisco IP Phone model 7940. For more information, see the "Cisco IP Phone Model 7940/41" section on page 2-21.

Nonmanager and Nonassistant Phones

In addition to configuring manager and assistant devices, configure all other users in the Cisco CallManager cluster. Proper configuration allows managers and assistants to make calls to and receive calls from all other users in the cluster.

Configuration Tips for Nonmanager and Nonassistant

- Use the Everyone partition for all other users.
- Use the CSS-I-E calling search space for all other users.
- If you use auto registration, perform the following tasks:
  - On the Device Pool Configuration window (**System > Device Pool**), choose CSS-I-E from the Calling Search Space for Auto-registration field.
  - On the Cisco CallManager Configuration window (**System > Cisco CallManager**), choose Everyone from the Partition field.
- If you use BAT, you can use the Everyone template that the Cisco IPMA Configuration Wizard created to add phones in the Everyone partition and the CSS-I-E calling search space.

Manager and Assistant Configuration

From the Cisco CallManager End User Configuration window, configure the settings for the managers and assistants who use the Cisco IPMA feature. You can configure IPMA in proxy line or shared line mode. To configure the manager and assistant for proxy line mode, see the "Configuring a Manager and Assigning an Assistant for Proxy Line Mode" section on page 2-25. To configure the manager and assistant for shared line mode, see the "Configuring a Manager and Assigning an Assistant for Shared Line Mode" section on page 3-16.

From the End User Configuration window, perform the following functions:

- Choose manager and assistant devices
- Automatically configure a manager or assistant device, if you want one
- Choose the local language in which the User Information window displays.

- Choose the Cisco IPMA Manager or Cisco IPMA Assistant configuration window to configure the following IPMA settings:
  - Set up primary and incoming intercom lines for intercom capability. For example, configure extension 3102 as the intercom line for the manager. This line will receive intercom calls from the assistant; for example, the assistant line 1 (1102) and line 2 (1103) display on the assistant console, and the assistant answers them.
  - Configure assistants for managers.
  - Set up proxy lines for each manager on the assistant phone. For example, assistant lines 4 and 5 take calls from manager lines 1102 and 1103.

The following sections provide details about configuring the manager and assistant settings:

- Configuring a Manager and Assigning an Assistant for Proxy Line Mode, page 2-25
- Deleting Cisco IPMA Information from the Manager, page 2-26
- Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant, page 2-28
- Deleting the Cisco IPMA Information from the Assistant, page 2-29

Configuring a Manager and Assigning an Assistant for Proxy Line Mode

Perform the following procedure to configure a Cisco IPMA manager and assign an assistant to the manager. To configure a new user, see "Adding an End User" in the *Cisco CallManager Administration Guide*.

Tip Configure Cisco IPMA manager information before configuring Cisco IPMA information for an assistant.

Procedure

Step 1 To configure the IPMA manager and to assign an assistant to an existing user, choose **User Management > End User**.

Step 2 To find the user that will be the IPMA manager, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

Step 3 To display user information for the chosen manager, click the user name.

The End User Configuration window displays.

Step 4 To configure IPMA information for the manager, choose the **Cisco IPMA Manager** from the Related Links drop-down list box and click Go.

Step 5 The Cisco IPMA Manager Configuration window displays and contains manager information, assistant information, and IPMA-controlled lines for the chosen user.

Tip To view existing assistant configuration information, click the assistant name in the Associated Assistants list and click the **Edit Assistant** link. The Cisco IPMA Assistant IPMA Configuration information displays. To return to the manager configuration information, click the manager name in the Associated Managers list on the Cisco IPMA Assistant Configuration window.

Step 6 To associate a device name or device profile with a manager, choose the device name or device profile from the Device Name/Profile selection box. Extension Mobility can optionally use device profiles. For information about using Cisco CallManager Extension Mobility with Cisco IPMA, see the "Extension Mobility" section on page 2-7.

Note If the manager telecommutes, click the Mobile Manager check box and optionally choose Device Profile. When Device Profile is chosen, the manager must log on to the phone by using extension mobility before accessing IPMA.

Step 7 From the Intercom Line selection box, choose the intercom line appearance for the manager, if applicable.

Step 8 To assign an assistant to the manager, choose an assistant from the Available Assistants list and click the down arrow to move the chosen assistant to the Associated Assistants list.

Step 9 From the Available Lines selection box, choose a line that you want Cisco IPMA to control, and click the down arrow to make the line display in the Selected Lines selection box. Configure up to five IPMA-controlled lines.

To remove a line from the Selected Lines selection box and from Cisco IPMA control, click the up arrow.

Step 10 To automatically configure the softkey template, subscription to the IPMA phone service, calling search space and partition for IPMA-controlled selected lines and intercom line, and auto answer with speakerphone for intercom line for the manager phone based on the IPMA service parameters, check the **Automatic Configuration** check box.

Step 11 Click the **Save** button.

The update takes effect immediately.

If you checked the Automatic Configuration check box and the service parameters are invalid, a message displays.

Upon successful completion of the automatic configuration, the manager device resets. If you configured a device profile, the manager must log out and log in to the device for settings to take effect.

Note When non-IPMA changes such as name, user locale, or PIN, are made to a user, the user (manager or assistant) must log out of Cisco IPMA and log in before the changes occur.

Additional Information

See the "Related Topics" section on page 2-33.

Deleting Cisco IPMA Information from the Manager

Perform the following procedure to delete Cisco IPMA information for a manager. To delete non-IPMA information for a manager, see the "Adding an End User" section in the *Cisco CallManager Administration Guide*.

Procedure

Step 1 To search for the manager for whom you want to delete IPMA information, choose **User Management > End User** from Cisco CallManager Administration.

Step 2 From the Find and List Users window, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

A list of configured users displays.

Step 3 Choose the manager whose Cisco IPMA information you want to delete.

Step 4 From the Related Links drop-down list box, click **Cisco IPMA Manager**.

The Cisco IPMA Manager Configuration window displays and contains IPMA manager configuration information.

Step 5 Click the **Delete** button.

The update takes effect immediately.

Additional Information

See the "Related Topics" section on page 2-33.

Updating the Manager Cisco IPMA Configuration

Perform the following procedure to update Cisco IPMA information for a manager. To update non-IPMA information for a manager, see the "Adding an End User" section in the *Cisco CallManager Administration Guide*.

Procedure

Step 1 To search for the manager for whom you want to update IPMA information, choose **User Management > End User** from Cisco CallManager Administration.

Step 2 From the Find and List Users window, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

A list of configured users displays.

Step 3 Choose the manager whose Cisco IPMA information you want to update.

Step 4 From the Related Links drop-down list box, click **Cisco IPMA Manager**.

The Cisco IPMA Manager Configuration window displays and contains IPMA manager configuration information.

Step 5 Update the information that you want changed such as device name, IPMA-controlled lines, or intercom line appearance.

Note The system automatically configures the softkey template, subscription to the IPMA phone service, calling search space and partition for IPMA-controlled selected lines and intercom line, and auto answer with speakerphone for intercom line for the manager phone based on the IPMA service parameters when the **Automatic Configuration** check box is checked.

Step 6 Click the **Save** button.

The update takes effect immediately.

Note When non-IPMA changes such as name, user locale, or PIN are made to a user, the user (manager or assistant) must log out of Cisco IPMA and log in for the changes to occur.

Additional Information

See the "Related Topics" section on page 2-33.

Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant

Use the Cisco IPMA Assistant Configuration of the End User Configuration window to configure the following items:

- Device name of the assistant phone
- Intercom line that the assistant uses to answer the manager calls (optional)
- Primary line to make outgoing calls (optional)
- Proxy line of the assistant phone that is associated with the manager, the manager name, and the manager line. For example, the assistant phone line 3 gets used to answer manager Mary Smith phone line 2.

A proxy line specifies a phone line that appears on the assistant Cisco IP Phone. Cisco IPMA uses proxy lines to manage calls that are intended for a manager; for example, manager1. If the call-routing software determines that the call should be presented to the assistant because manager1 cannot accept the call, the call routes to the proxy line that is configured for manager1 on the assistant Cisco IP Phone.

You can manually configure a line on the assistant phone to serve as the proxy line, or you can use automatic configuration to generate a DN and to add the line to the assistant phone.

For information about configuring shared and intercom lines for Cisco IPMA with shared line mode, see the "Configuring Shared and Incoming Intercom Lines for the Assistant" section on page 3-18.

When you display IPMA information for the assistant, the system generates DNs on the basis of IPMA service parameter entries in the Proxy Directory Number Range and Proxy Directory Prefix sections. For more information about these service parameters, see the "Setting the Service Parameters for Cisco IPMA" section on page 2-18.

Perform the following procedure to configure the proxy and incoming intercom line appearances for an assistant. To configure a new user, see the "Adding an End User" section in the *Cisco CallManager Administration Guide*.

Tip Before configuring the Cisco IPMA information for an assistant, you must configure the Cisco IPMA manager information and assign an assistant to the manager. See "Configuring a Manager and Assigning an Assistant for Proxy Line Mode" section on page 2-25.

Before You Begin

If you want to automatically configure the proxy line on the assistant phone, configure the IPMA service parameters in the Proxy Directory Number Range and Proxy Directory Number Prefix sections.

Procedure

Step 1 To configure IPMA for an assistant and assign proxy and incoming intercom lines, choose **User Management > End User**.

Step 2 To find the user that will be the IPMA assistant, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

Step 3 To display user information for the chosen assistant, click the user name.

The End User Configuration window displays.

Step 4 To configure IPMA information for the assistant, choose **Cisco IPMA Assistant** from the Related Links drop-down list box and click Go.

The Cisco IPMA Assistant Configuration window displays.

Step 5 From the Device Name selection box, choose the device name to associate with the assistant.

Step 6 From the Intercom Line Appearance selection box, choose the incoming intercom line appearance for the assistant.

Step 7 Use the selection boxes in the Manager Association to Assistant Line area to assign and associate manager line numbers to the assistant line numbers.

Step 8 In the Available Lines selection box, choose the assistant line. The word "Auto" precedes the autogenerated proxy lines. If you want Cisco CallManager to create an autogenerated proxy line on the assistant phone, choose an autogenerated proxy line and ensure that the **Automatic Configuration** check box is checked.

Note The system automatically sets the softkey template as well as the calling search space and partition for existing proxy lines and intercom line on the basis of the Cisco IPMA service parameter settings when the Automatic Configuration check box is checked. Additionally, the system sets auto answer with speakerphone for intercom line.

Step 9 In the Manager Name selection box, choose the manager for whom this proxy line will apply.

Step 10 In the Manager Line selection box, choose the manager line for which this proxy line will apply.

Step 11 Click the **Save** button.

The update takes effect immediately. If you chose automatic configuration, the assistant device automatically resets.

Additional Information

See the "Related Topics" section on page 2-33.

Deleting the Cisco IPMA Information from the Assistant

Perform the following procedure to delete Cisco IPMA information for an assistant. To delete non-IPMA information for an assistant, see the "Adding an End User" section in the *Cisco CallManager Administration Guide*.

Procedure

Step 1 To search for the assistant for whom you want to delete IPMA information, choose **User Management > End User** from Cisco CallManager Administration.

Step 2 From the Find and List Users window, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

A list of configured users displays.

Step 3 Choose the assistant whose Cisco IPMA information you want to delete.

Step 4 From the Related Links drop-down list box, click **Cisco IPMA Assistant**.

The Cisco IPMA Assistant Configuration window displays and contains IPMA assistant configuration information.

Step 5 Click the **Delete** button.

The update takes effect immediately.

Note When non-IPMA changes such as name, user locale, or PIN, are made to a user, the user (manager or assistant) must log out of Cisco IPMA and log in before the changes occur.

Additional Information

See the "Related Topics" section on page 2-33.

Updating the Assistant Cisco IPMA Configuration

Perform the following procedure to update Cisco IPMA information for an assistant. To update non-IPMA information for an assistant, see the "Adding an End User" section in the *Cisco CallManager Administration Guide*.

Procedure

Step 1 To search for the assistant for whom you want to update IPMA information, choose **User Management > End User** from Cisco CallManager Administration.

Step 2 From the Find and List Users window, click the **Find** button or enter the user name in the Search Options field and click the **Find** button.

A list of configured users displays.

Step 3 Choose the assistant whose Cisco IPMA information you want to update.

Step 4 From the Related Links drop-down list box, click **Cisco IPMA Assistant**.

The Cisco IPMA Assistant Configuration window displays and contains IPMA assistant configuration information.

Step 5 Update the information such as device name, intercom line, or manager association information that you want changed.

Note The system automatically configures the softkey template, subscription to the IPMA phone service, calling search space and partition for IPMA-controlled selected lines and intercom line, and auto answer with speakerphone for intercom line for the manager phone based on the IPMA service parameters when the **Automatic Configuration** check box is checked.

Step 6 Click the **Save** button.

The update takes effect immediately.

Note When non-IPMA changes such as name, user locale, or PIN, are made to a user, the user (manager or assistant) must log out of Cisco IPMA and log in before the changes occur.

Additional Information

See the "Related Topics" section on page 2-33.

Dial Rules Configuration

The administrator uses dial rules configuration to add and sort the priority of dialing rules. Dial rules for Cisco IPMA automatically strip numbers from or add numbers to telephone numbers that the assistant dials from the directory search window in the Assistant Console. For example, a dial rule can automatically add the digit 9 in front of a 7-digit telephone number to provide access to an outside line.

The following sections provide additional information on application dial rules:

- Application Dial Rules Configuration Design, *Cisco CallManager System Guide*
- Application Dial Rules Configuration Error Checking, *Cisco CallManager System Guide*

Providing Information to Cisco IPMA Managers and Assistants

Install the assistant console application for Cisco IPMA by accessing a URL. The administrator sends the URL, in the "Installing the Assistant Console Application" section on page 2-32, to the assistant.

Note The assistant console application installation program supports Netscape 7.1 or later and Microsoft Internet Explorer 6.0 or later.

Installing the Assistant Console Application

Note When upgrading from Cisco CallManager release 4.0 or 4.1 to release 5.0, you must reinstall the Assistant Console application.

Begin the installation by accessing the following URL:

https://<IPMA server>:8443/ma/Install/IPMAConsoleInstall.jsp

where

IPMA server specifies the IP address of the server that has the IPMA service running on it.

Tip You can localize the installer (with the proper localization pack) by including the proper parameter on the URL; for example, for French, you would include the following parameter at the end of the URL:?locale=fr_FR.

Assistant Console Dialog Options

The assistant console displays a dialog that contains the following options:

- Location to Install—The path of the directory where the assistant console software gets installed. The default specifies following path:

  c:\Program Files\Cisco\IPMA Assistant Console\

- Create Desktop Shortcut—Default specifies true. This parameter determines whether a shortcut is created on the assistant console.
- Create StartMenu Shortcut—Default specifies true. This parameter determines whether a shortcut is created in the Start menu (**Start > Programs > Cisco IPMA > IPMA Assistant Console**).
- Install JRE—Default specifies true. This parameter determines whether JRE is installed along with IPMA assistant console. If this option is turned off, the following configuration is required on the assistant console:
  - Install JRE 1.4.2_05 (international version) on the assistant console
  - Create an environment variable—IPMA_JRE on the assistant console, which gives the path to the JRE; for example, c:\Program Files\Jave\j2re1.4.2_05

Manager Configuration

Managers can customize their feature preferences from the Manager Configuration window by using the following URL:

https://<IPMA server>:8443/ma/desktop/maLogin.jsp

where

IPMA server specifies the IP address of the server that has the Cisco IPMA service running on it.

Note The Manager Configuration only supports Microsoft Internet Explorer 6.0 or later.

The administrator must send this URL to the manager.

Additional Information

See the "Related Topics" section on page 2-33.

Related Topics

- Softkey Templates, *Cisco CallManager System Guide*
- Cisco IP Manager Assistant With Shared Line Support
- Cisco IPMA Service, page 2-2

- Cisco IP Phone Interface, page 2-4
- Cisco IPMA Configuration Wizard, page 2-13
- Cisco IP Phone Service Configuration, page 2-20
- Nonmanager and Nonassistant Phones, page 2-24
- Configuring a Manager and Assigning an Assistant for Proxy Line Mode, page 2-25
- Deleting Cisco IPMA Information from the Manager, page 2-26
- Updating the Manager Cisco IPMA Configuration, page 2-27
- Configuring Proxy, Incoming Intercom, and Primary Lines for the Assistant, page 2-28
- Deleting the Cisco IPMA Information from the Assistant, page 2-29
- Adding an End User, *Cisco CallManager Administration Guide*
- Associating Devices to an End User, *Cisco CallManager Administration Guide*

Additional Cisco Documentation

- *Cisco IP Manager Assistant User Guide*
- *Cisco CallManager Administration Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco CallManager Serviceability System Guide*
- *Cisco CallManager Bulk Administration Guide*
- *Cisco CallManager Security Guide*