



Cisco CallManager Administration Guide

Release 3.1

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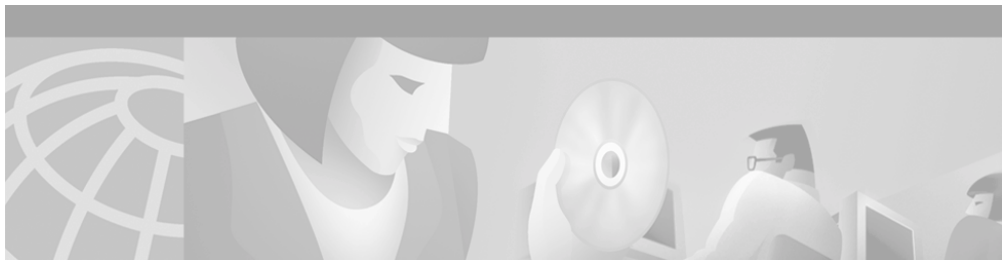
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Preface

This preface describes the purpose, audience, organization, and conventions of this guide, and provides information on how to obtain related documentation.

The preface covers these topics:

- [Purpose, page xxi](#)
- [Audience, page xxii](#)
- [Organization, page xxii](#)
- [Related Documentation, page xxiii](#)
- [Conventions, page xxiii](#)
- [Obtaining Documentation, page xxv](#)
- [Obtaining Technical Assistance, page xxvii](#)

Purpose

The *Cisco CallManager Administration Guide* provides instructions for administering the Cisco CallManager system. This guide includes descriptions of procedural tasks you complete using Cisco CallManager. It also provides references for commands to assist you in using Cisco CallManager. This book acts as a companion to the *Cisco CallManager System Guide* which provides conceptual information about the Cisco CallManager and its components as well as tips for setting up features using the Cisco CallManager Administration web pages.

Audience

The *Cisco CallManager Administration Guide* is written for network administrators responsible for managing the Cisco CallManager system. This guide requires knowledge of telephony and IP networking technology.

Organization

This guide is organized as shown in the following table:

Part	Description
Part 1	“Cisco CallManager” Contains information about general topics related to the configuration and operation of Cisco CallManager.
Part 2	“System Configuration” Contains information on how to configure the system parameters used by Cisco CallManager.
Part 3	“Route Configuration” Contains information on how to configure route plans in Cisco CallManager.
Part 4	“Service Configuration” Contains information on how to configure services used in conjunction with Cisco CallManager.
Part 5	“Feature Configuration” Contains information on how to configure user features.
Part 6	“Device Configuration” Contains information on how to configure devices in Cisco CallManager.
Part 7	“User Configuration” Contains information on how to configure user and directory information.

Part	Description
Part 8	“Application Configuration” Contains information on how to configure plugin applications and application interfaces.
Part 9	“Appendix” Contains information on how to configure Personal Directory.

Related Documentation

Refer to the following documents for further information about related Cisco IP telephony applications and products:

- *Installing Cisco CallManager Release 3.1*
- *Release Notes for Cisco CallManager Release 3.1*
- *Cisco CallManager System Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco IP Phone 7900 Family Administration Guide*
- *Balk Administration Tool Guide for Cisco CallManager*

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic</i> font	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

Convention	Description
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
→	This pointer highlights an important line of text in an example.
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords, are in angle brackets.

Notes use the following conventions:



Note

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

Timesavers use the following conventions:



Timesaver

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Tips use the following conventions:



Tips

Means *the information contains useful tips*.

Cautions use the following conventions:



Caution

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

Warnings use the following conventions:



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and familiar with standard practices for preventing accidents.

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

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Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

<http://www.cisco.com/tac>

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

<http://www.cisco.com/register/>

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

<http://www.cisco.com/tac/caseopen>

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.



PART 1

Cisco CallManager



Introduction

Cisco CallManager serves as the software-based call-processing component of the Cisco IP Telephony Solutions for the Enterprise, part of Cisco AVVID (Architecture for Voice, Video and Integrated Data). The Cisco IP Telephony Applications Server provides a high-availability server platform for Cisco CallManager call processing, services, and applications.

The Cisco CallManager system extends enterprise telephony features and functions to packet telephony network devices such as IP phones, media processing devices, Voice-over-IP (VoIP) gateways, and multimedia applications. Additional data, voice, and video services such as unified messaging, multimedia conferencing, collaborative contact centers, and interactive multimedia response systems interact through Cisco CallManager open telephony application programming interface (API).

Cisco CallManager provides signaling and call control services to Cisco integrated telephony applications as well as third-party applications. It performs the following primary functions:

- Call processing
- Signaling and device control
- Dial plan administration
- Phone feature administration
- Directory services

- Operations, administration, maintenance and provisioning (OAM&P)
- Programming interface to external voice-processing applications such as Cisco SoftPhone, Cisco IP Interactive Voice Recognition (IP IVR), Cisco Personal Assistant, and Cisco WebAttendant

Key Features and Benefits

The Cisco CallManager system includes a suite of integrated voice applications that perform voice conferencing and manual attendant console functions. This suite of voice applications means that no need exists for special-purpose voice-processing hardware. Supplementary and enhanced services such as hold, transfer, forward, conference, multiple line appearances, automatic route selection, speed dial, last-number redial, and other features extend to IP phones and gateways. Because Cisco CallManager is a software application, enhancing its capabilities in production environments only requires upgrading software on the server platform, thereby avoiding expensive hardware upgrade costs.

Distribution of Cisco CallManager and all Cisco IP phones, gateways, and applications across an IP network provides a distributed, virtual telephony network. This architecture improves system availability and scalability. Call admission control ensures that voice quality of service (QoS) is maintained across constricted WAN link and automatically diverts calls to alternate public switched telephone network (PSTN) routes when WAN bandwidth is not available.

A web-browsable interface to the configuration database provides the capability for remote device and system configuration. This interface also provides access to HTML-based online help for users and administrators.

Where to Find More Information

- *Cisco CallManager System Guide*
- *Cisco IP Telephony Network Design Guide*

http://www.cisco.com/univercd/cc/td/doc/product/voice/ip_tele/network/



PART 2

System Configuration



Server Configuration

Use server configuration to specify the address of the server where Cisco CallManager is installed. If your network uses Domain Name System (DNS) services, you can specify the DNS name of the server. If your network does not use DNS services, you must specify the Internet Protocol (IP) address of the server.



Note

You must update the DNS server with the appropriate Cisco CallManager name and address information before using that information to configure the Cisco CallManager server.

Use the following topics to add, update, or delete a server address in the Cisco CallManager database:

- [Adding a Server, page 2-2](#)
- [Updating a Server, page 2-3](#)
- [Deleting a Server, page 2-4](#)
- [Server Configuration Settings, page 2-5](#)

Adding a Server

This section describes how to add a server address to the Cisco CallManager database.

**Note**

Installing the Cisco CallManager software automatically configures server information in the database.

Procedure

-
- Step 1** Choose **System > Server**.
- Step 2** Enter the appropriate settings as described in [Table 2-1](#).
- Step 3** Click **Insert**.
-

Related Topics

- [Adding a Cisco CallManager, page 3-1](#)
- [Updating a Server, page 2-3](#)
- [Deleting a Server, page 2-4](#)
- [Server Configuration Settings, page 2-5](#)
- [Starting and Stopping Services, page 32-1](#)

Updating a Server

This section describes how to update server information in the Cisco CallManager database.

Procedure

- Step 1** Choose **System > Server**.
- Step 2** From the Servers list, choose the server you want to update.
- Step 3** Update the appropriate settings as described in [Table 2-1](#).
- Step 4** Click **Update** to save the changes in the database.

Changes to the server configuration do not take effect until you restart Cisco CallManager. For information on restarting the Cisco CallManager, see the [“Starting and Stopping Services” section on page 32-1](#).

Related Topics

- [Adding a Server, page 2-2](#)
- [Deleting a Server, page 2-4](#)
- [Server Configuration Settings, page 2-5](#)
- [Starting and Stopping Services, page 32-1](#)

Deleting a Server

This section describes how to delete a server from the Cisco CallManager database.

Before You Begin

You cannot delete a server that has a specific Cisco CallManager running on it. If you try to delete a server that is in use, Cisco CallManager displays an error message. Before deleting a server that is currently in use, you must perform at least one of the following tasks:

- Update the Cisco CallManager in question and assign it to a different server. See the [“Updating a Cisco CallManager” section on page 3-3](#).
- Delete the Cisco CallManager assigned to the server you want to delete. See the [“Deleting a Cisco CallManager” section on page 3-4](#).
- Deactivate the services running on that server. Refer to the [“Service Installation and Configuration” section in the *Cisco CallManager System Guide*](#).

Procedure

Step 1 Choose **System > Server**.

Step 2 In the Servers list, choose the server you want to delete.

Step 3 Click **Delete**.

If the server is not in use, Cisco CallManager deletes it. If it is in use, an error message displays.

Changes to the server configuration do not take effect until you restart Cisco CallManager. For information on restarting the Cisco CallManager, see the [“Starting and Stopping Services” section on page 32-1](#).

Related Topics

- [Adding a Server, page 2-2](#)
- [Updating a Server, page 2-3](#)

- [Server Configuration Settings, page 2-5](#)
- [Starting and Stopping Services, page 32-1](#)

Server Configuration Settings

[Table 2-1](#) describes the server configuration settings.

Table 2-1 Server Configuration Settings

Field	Description
DNS/IP Address	<p>If your network uses DNS services, you can enter the DNS name of the Cisco CallManager server. Otherwise, you must enter the full IP address of the server.</p> <p>Note You must update the DNS server with the appropriate Cisco CallManager name and address information before using that information here.</p>
MAC Address	<p>Enter the media access control (MAC) address of the network interface card (NIC) in the Cisco CallManager server. The MAC address is the permanent hardware address of the NIC. If you plan to move the server periodically to different locations on the network, Cisco recommends that you enter the MAC address so that other devices on the network can always identify the server. If you do not plan to relocate the server, you can omit the MAC address.</p>

Related Topics

- [Adding a Server, page 2-2](#)
- [Updating a Server, page 2-3](#)
- [Deleting a Server, page 2-4](#)



Cisco CallManager Configuration

Use Cisco CallManager configuration to specify the ports and other properties for each Cisco CallManager installed in the same cluster. A cluster comprises a set of Cisco CallManagers that share the same database.

Use the following topics to add, update, or delete a Cisco CallManager configuration or to view system component version information:

- [Adding a Cisco CallManager, page 3-1](#)
- [Updating a Cisco CallManager, page 3-3](#)
- [Deleting a Cisco CallManager, page 3-4](#)
- [Cisco CallManager Configuration Settings, page 3-5](#)
- [Viewing Cisco CallManager Component Versions, page 3-8](#)

Adding a Cisco CallManager

This section describes how to add a new Cisco CallManager to the database.



Note

Installing the Cisco CallManager automatically configures information in the database. After installing the software, you normally do not have to add a new Cisco CallManager configuration to the database, but you might want to update the configuration information for an existing Cisco CallManager. See the [“Updating a Cisco CallManager” section on page 3-3](#).

Before You Begin

Before adding a new Cisco CallManager to the database, perform the following tasks:

- Configure the address of the server where this Cisco CallManager is installed. See the [“Adding a Server” section on page 2-2](#).
- If you want to specify a partition for directory numbers used in auto-registration with this Cisco CallManager, configure that partition. See the [“Adding a Partition” section on page 12-3](#).

Procedure

Step 1 Choose **System > Cisco CallManager**.

Step 2 Use one of the following methods to add a Cisco CallManager:

- If there is an existing Cisco CallManager with settings that are similar to the one you want to add, choose the existing Cisco CallManager to display its settings, click **Copy**, and modify the settings as needed.
- To add a Cisco CallManager without copying an existing one, continue with [Step 3](#).

Step 3 Enter the appropriate settings as described in [Table 3-1](#).

Step 4 Click **Insert** to save the Cisco CallManager configuration in the database.

Related Topics

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Updating a Cisco CallManager, page 3-3](#)
- [Deleting a Cisco CallManager, page 3-4](#)
- [Cisco CallManager Configuration Settings, page 3-5](#)
- [Viewing Cisco CallManager Component Versions, page 3-8](#)

Updating a Cisco CallManager

This section describes how to update a Cisco CallManager configuration.

Procedure

- Step 1** Choose **System > Cisco CallManager**.
- Step 2** From the Cisco CallManagers list, choose the Cisco CallManager you want to update.
- Step 3** Update the appropriate settings as described in [Table 3-1](#).
Before saving the changes, you can click **Cancel Changes** to reset all fields to their original value.
- Step 4** Click **Update** to save the changes in the database.
Changes to the settings for auto-registration partition, external phone number mask, and voice message box mask do not take effect until you restart Cisco CallManager. Refer to the [“Starting and Stopping Services” section on page 32-1](#).



Caution

The **Restart Devices** button restarts all devices registered with this Cisco CallManager and can temporarily interrupt call processing for those devices. Use this button only if you have made configuration changes to most of the devices on this Cisco CallManager and you want to restart all of them at once. For configuration changes to smaller groupings of devices, restart only the affected devices. If possible, avoid restarting devices during peak hours.

Related Topics

- [Adding a Cisco CallManager, page 3-1](#)
- [Deleting a Cisco CallManager, page 3-4](#)
- [Cisco CallManager Configuration Settings, page 3-5](#)
- [Viewing Cisco CallManager Component Versions, page 3-8](#)

Deleting a Cisco CallManager

This section describes how to delete a Cisco CallManager configuration from the database.

Before You Begin

You cannot delete a Cisco CallManager while it is running. If you try to delete a Cisco CallManager that is in use, an error message displays. Before deleting a Cisco CallManager that is currently in use, you must perform either or both of the following tasks:

- Update the Cisco CallManager group so that it no longer contains the Cisco CallManager you want to delete. See the [“Updating a Cisco CallManager Group”](#) section on page 4-3.
- Delete the Cisco CallManager group that contains the Cisco CallManager you want to delete. See the [“Deleting a Cisco CallManager Group”](#) section on page 4-5.



Note

If you delete a Cisco CallManager configuration from the database, the Cisco CallManager service continues to run in background on the server. To deactivate the service, use the Cisco Service Configuration utility. Refer to the [“Service Installation and Configuration”](#) section in the *Cisco CallManager System Guide* for more information.

Procedure

-
- Step 1** Choose **System > Cisco CallManager**.
 - Step 2** From the Cisco CallManagers list, choose the Cisco CallManager you want to delete.
 - Step 3** Click **Delete**.
 - Step 4** When asked to confirm the delete operation, click either **OK** to delete or **Cancel** to cancel the delete operation.
-

Related Topics

- [Adding a Cisco CallManager, page 3-1](#)
- [Updating a Cisco CallManager, page 3-3](#)
- [Cisco CallManager Configuration Settings, page 3-5](#)
- [Viewing Cisco CallManager Component Versions, page 3-8](#)

Cisco CallManager Configuration Settings

Table 3-1 describes the Cisco CallManager configuration settings.

Table 3-1 *Cisco CallManager Configuration Settings*

Field	Description
Cisco CallManager Server	<p>Enter the IP address or DNS name of the server where this Cisco CallManager is installed.</p> <p>Note Assign each Cisco CallManager server address only once (that is, there can be only one Cisco CallManager per server). After you assign a server address to a particular Cisco CallManager, that address disappears from the list.</p>
Cisco CallManager Name	Enter the name you want to assign to this Cisco CallManager.
Description	Enter a description of the Cisco CallManager.
Starting Directory Number	Enter the first directory number to use for auto-registration of devices.
Ending Directory Number	<p>Enter the last directory number to use for auto-registration of devices.</p> <p>Specifying a valid range of directory numbers in the Starting Directory Number and Ending Directory Number fields automatically enables auto-registration.</p> <p>Setting the starting and ending directory numbers to the same value disables auto-registration.</p>

Table 3-1 Cisco CallManager Configuration Settings (continued)

Field	Description
Partition	<p>Choose the partition to which auto-registered directory numbers belong.</p> <p>If you are not using partitions, choose None.</p> <p>You must choose a range for auto-registration before you can choose a partition, external phone number mask, or voice message box mask.</p>
External Phone Number Mask	<p>Specify the mask used to format caller ID information for external (outbound) calls made from the auto-registered devices. The mask can contain up to 50 characters. Enter the literal digits that you want to appear in the caller ID information, and use Xs to represent the directory number of the auto-registered device.</p> <p>For example, if you specify a mask of 972813XXXX, an external call from extension 1234 displays a caller ID number of 9728131234 if the Use External Phone Number Mask option is checked on the route pattern used to make the external call.</p> <p>If you specify a mask of all literal digits, such as 9728135000 to represent a main attendant number, then that literal number (9728135000) displays as the caller ID for an external call from any auto-registered device.</p>
Voice Message Box Mask	<p>Specify the mask used to format the Voice Message Box number for auto-registered phones. When forwarding a call to voice mail from a directory line on an auto-registered phone, Cisco CallManager applies this mask to the number configured in the Voice Message Box field for that directory line.</p> <p>For example, if you enter 3XXXX in the Voice Message Box Mask field and you enter 4567 in the Voice Message Box field of a directory line on an auto-registered phone, Cisco CallManager identifies the voice message box for this directory line as 34567.</p>

Table 3-1 Cisco CallManager Configuration Settings (continued)

Field	Description
Auto-registration Disabled on this Cisco CallManager	<p>Cisco CallManager disables the auto-registration by default to prevent unauthorized connections to the network:</p> <ul style="list-style-type: none"> • Uncheck the Auto-registration Disabled check box to enable auto-registration for this Cisco CallManager. • Check the Auto-registration Disabled check box to disable auto-registration for this Cisco CallManager. <p>When auto-registration is disabled, you must configure the directory numbers manually whenever you add new devices to your network.</p> <p>Setting the Starting Directory Number and Ending Directory Number to the same value also disables auto-registration.</p> <p>If starting and ending directory numbers are currently specified when you disable auto-registration by checking this option, Cisco CallManager sets the starting and ending directory numbers to the same value.</p> <p>Cisco CallManager resets the partition, and external phone mask information fields are reset when Auto-registration is disabled.</p>
Ethernet Phone Port	<p>Cisco CallManager uses this TCP port to communicate with the Cisco IP phones on the network. Accept the default port of 2000 unless this port is already in use on your system. Ensure all port entries are unique. Valid port numbers range from 1024 to 49151.</p>
Digital Port	<p>Cisco CallManager uses this TCP port to communicate with Cisco Access Digital Trunk Gateways (such as the DT-24+ or DE-30+) on the network. Accept the default port of 2001 unless this port is already in use on your system. Ensure all port entries are unique. Valid port numbers range from 1024 to 49151.</p>

Table 3-1 Cisco CallManager Configuration Settings (continued)

Field	Description
Analog Port	Cisco CallManager uses this TCP port to communicate with Cisco Access Analog Gateways (such as the WS-6624 FXS) on the network. Accept the default port of 2002 unless this port is already in use on your system. Ensure all port entries are unique. Valid port numbers range from 1024 to 49151.
MGCP Listen Port	Cisco CallManager uses this TCP port to detect messages from its associated MGCP gateway. Accept the default port of 2427 unless this port is already in use on your system. Ensure all port entries are unique. Valid port numbers range from 1024 to 49151.
MGCP Keep-alive Port	Cisco CallManager uses this TCP port to exchange keep-alive messages with its associated MGCP gateway. Accept the default port of 2428 unless this port is already in use on your system. Ensure all port entries are unique. Valid port numbers range from 1024 to 49151.

Related Topics

- [Adding a Cisco CallManager, page 3-1](#)
- [Updating a Cisco CallManager, page 3-3](#)
- [Deleting a Cisco CallManager, page 3-4](#)
- [Viewing Cisco CallManager Component Versions, page 3-8](#)

Viewing Cisco CallManager Component Versions

The Cisco CallManager Component Versions page in Cisco CallManager Administration displays view-only software component version information for any Cisco CallManager server, lists servers in the cluster with out-of-sync software components, and displays latest installed component version information across all Cisco CallManager servers in the cluster.

Use the following procedure to display version information for system software components.

Procedure

- Step 1** Choose **Help > Component Versions**.
- Step 2** Choose a server from the Servers list to display component version information for that server.
- The information displayed includes the name of the component, the version number of the component, and the installation ID of the program that installed the component. The list will vary, depending on which components are currently installed on that server.
- Step 3** Click **Out of Sync** to locate any system components installed on Cisco CallManager servers in the cluster that do not match the latest installed component version in the cluster.
- Step 4** Click **Latest Installed Version** to list the most recent (highest numbered) installed version of each system component across all servers in the cluster.
-

Related Topics

- [Adding a Cisco CallManager, page 3-1](#)
- [Updating a Cisco CallManager, page 3-3](#)
- [Deleting a Cisco CallManager, page 3-4](#)
- [Cisco CallManager Configuration Settings, page 3-5](#)
- [Cisco CallManager Group Configuration, page 4-1](#)
- [Device Pool Configuration, page 8-1](#)
- [Device Defaults Configuration, page 6-1](#)



Cisco CallManager Group Configuration

A Cisco CallManager group specifies a prioritized list of up to three Cisco CallManagers. The first Cisco CallManager in the list serves as the primary Cisco CallManager for that group, and the other members of the group serve as secondary (backup) Cisco CallManagers.

Each device pool has one Cisco CallManager group assigned. When a device registers, it attempts to connect to the primary (first) Cisco CallManager in the group assigned to its device pool. If the primary Cisco CallManager is not available, the device tries to connect to the next Cisco CallManager listed in the group, and so on.

Cisco CallManager groups provide important features for your system:

- Redundancy—This feature enables you to designate a primary and backup Cisco CallManagers for each group.
- Call processing load balancing—This feature enables you to distribute the control of devices across multiple Cisco CallManagers.

For most systems, you need to assign a single Cisco CallManager to multiple groups to achieve better load distribution and redundancy.

Use the following topics to add, update, or delete a Cisco CallManager group:

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Updating a Cisco CallManager Group, page 4-3](#)
- [Copying a Cisco CallManager Group, page 4-4](#)

- [Deleting a Cisco CallManager Group](#), page 4-5
- [Cisco CallManager Group Configuration Settings](#), page 4-6

Adding a Cisco CallManager Group

This section describes how to configure a new Cisco CallManager group. You can also create a new Cisco CallManager group by copying an existing one. See the [“Copying a Cisco CallManager Group”](#) section on page 4-4 for more information.

Before You Begin

Before configuring a Cisco CallManager group, you must configure the Cisco CallManagers that you want to assign as members of that group. See the [“Adding a Cisco CallManager”](#) section on page 3-1 for more information.

Procedure

- Step 1** Choose **System > Cisco CallManager Group**.
- Step 2** Enter the appropriate settings as described in [Table 4-1](#).
- Step 3** Click **Insert** to save the Cisco CallManager group in the database.

Once you have configured the Cisco CallManager group, you can use it to configure device pools. Devices obtain their Cisco CallManager group list setting from the device pool to which they are assigned.

Related Topics

- [Updating a Cisco CallManager Group](#), page 4-3
- [Copying a Cisco CallManager Group](#), page 4-4
- [Deleting a Cisco CallManager Group](#), page 4-5
- [Cisco CallManager Group Configuration Settings](#), page 4-6

Updating a Cisco CallManager Group

This section describes how to update an existing Cisco CallManager group.

Procedure

- Step 1** Choose **System > Cisco CallManager Group**.
- Step 2** From the Cisco CallManager Group list, choose the group you want to update.
- Step 3** Update the appropriate settings as described in [Table 4-1](#). Before saving the changes, you can click **Cancel Changes** to reset all fields to their original value.



Note To designate a group as the default Auto-registration Cisco CallManager Group, check the Auto-registration Cisco CallManager Group check box.

If the currently selected group is the default group for auto-registration, you cannot change it by unchecking the Auto-registration Cisco CallManager Group check box. You must choose a different default auto-registration group. When you do so, the Cisco CallManager automatically changes the currently selected default auto-registration group.

- Step 4** Click **Update** to save the changes in the database.
- You must reset the devices that use the updated Cisco CallManager group to apply the changes. To reset all the devices that use this Cisco CallManager group, click **Reset Devices**.



Tips For your convenience in resetting devices, the **Reset Devices** button resets all devices in the device pool that uses this Cisco CallManager group.



Caution Resetting devices can cause them to drop calls.

Related Topics

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Copying a Cisco CallManager Group, page 4-4](#)
- [Deleting a Cisco CallManager Group, page 4-5](#)
- [Cisco CallManager Group Configuration Settings, page 4-6](#)

Copying a Cisco CallManager Group

Use the following procedure to add a new Cisco CallManager group by copying settings from an existing group.

Procedure

-
- Step 1** Choose **System > Cisco CallManager Group**.
 - Step 2** From the Cisco CallManager Group list, choose the name of the group you want to copy.
 - Step 3** Click **Copy**.
 - Step 4** In the Cisco CallManager Group field, enter the name of the new group. You must change the name of the group.
 - Step 5** Edit the fields you want to change as described in [Table 4-1](#).
 - Step 6** Click **Insert** to apply the changes and add the new Cisco CallManager group to the database.
-

Related Topics

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Updating a Cisco CallManager Group, page 4-3](#)
- [Deleting a Cisco CallManager Group, page 4-5](#)
- [Cisco CallManager Group Configuration Settings, page 4-6](#)

Deleting a Cisco CallManager Group

This section describes how to delete a Cisco CallManager group from the database.

Before You Begin

You cannot delete a Cisco CallManager group if it is assigned to any device pools or MGCP gateways or if it is the current Auto-registration Cisco CallManager Group for the cluster. If you try to delete a Cisco CallManager group that is in use, an error message displays. Before deleting a Cisco CallManager group that is currently in use, you must perform some or all of the following tasks:

- Assign a different Cisco CallManager group to the device pools that are currently using this Cisco CallManager group. See the [“Updating a Device Pool” section on page 8-4](#).
- Create or choose a different Cisco CallManager group to be the Auto-registration Cisco CallManager Group.

Procedure

- Step 1** Choose **System > Cisco CallManager Group**.
- Step 2** From the Cisco CallManager Group list, choose the group you want to delete.
- Step 3** Click **Delete**.
- Step 4** When asked to confirm the delete operation, click either **OK** to delete or **Cancel** to cancel the delete operation.
-

Related Topics

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Updating a Cisco CallManager Group, page 4-3](#)
- [Copying a Cisco CallManager Group, page 4-4](#)
- [Cisco CallManager Group Configuration Settings, page 4-6](#)

Cisco CallManager Group Configuration Settings

Table 4-1 describes the configuration settings for Cisco CallManager groups.

Table 4-1 Cisco CallManager Group Configuration Settings

Field	Description
Cisco CallManager Group	Enter the name of the new group.
Auto-registration Cisco CallManager Group	<p>Check the Auto-registration Cisco CallManager Group check box if you want this Cisco CallManager group to be the default Cisco CallManager group when auto-registration is enabled.</p> <p>Leave this check box unchecked if you do not want devices to auto-register with this Cisco CallManager group.</p> <p>Note Each Cisco CallManager cluster can have only one default auto-registration group. If you select a different Cisco CallManager group as the default auto-registration group, the previously chosen auto-registration group no longer serves as the default for the cluster.</p>

Table 4-1 Cisco CallManager Group Configuration Settings (continued)

Field	Description
Available Cisco CallManagers	<p>This field displays the list of available Cisco CallManager that are not a part of the Cisco CallManager group.</p> <p>Choose the Cisco CallManager names, and use the left and right arrows to move Cisco CallManagers between the <i>Selected</i> list and the <i>Available</i> list.</p>
Selected Cisco CallManagers	<p>This field displays the Cisco CallManagers that are in the Cisco CallManager group. The <i>Selected</i> list can contain up to three Cisco CallManagers. Cisco CallManagers in the <i>Selected</i> list become members of the group when you click Insert.</p> <p>Choose the Cisco CallManager names, and use the left and right arrows to move Cisco CallManagers between the <i>Selected</i> list and the <i>Available</i> list. Use the up and down arrows to arrange the groups in the <i>Selected</i> list in the order that you want.</p>

Related Topics

- [Adding a Cisco CallManager Group, page 4-2](#)
- [Updating a Cisco CallManager Group, page 4-3](#)
- [Copying a Cisco CallManager Group, page 4-4](#)
- [Deleting a Cisco CallManager Group, page 4-5](#)



Date/Time Group Configuration

Use Date/Time Groups to define time zones for the various devices connected to Cisco CallManager. Each device exists as a member of only one device pool, and each device pool has only one assigned Date/Time Group.

Installing Cisco CallManager automatically configures a default Date/Time Group called CMLocal. CMLocal synchronizes to the active date and time of the operating system on the server where Cisco CallManager is installed. After installing Cisco CallManager, you can change the settings for CMLocal as desired. Normally, adjust server date/time to the local time zone date and time.



Note

CMLocal resets to the operating system date and time whenever you restart Cisco CallManager or upgrade the Cisco CallManager software to a new release. Do not change the name of CMLocal.



Tips

For a worldwide distribution of Cisco IP phones, create one named Date/Time Group for each of the 24 time zones.

Use the following topics to add, update, or delete Date/Time Groups:

- [Adding a Date/Time Group, page 5-2](#)
- [Updating a Date/Time Group, page 5-2](#)
- [Deleting a Date/Time Group, page 5-3](#)
- [Date/Time Group Configuration Settings, page 5-4](#)

Adding a Date/Time Group

This section describes how to add a new date/time group to the Cisco CallManager database.

Procedure

- Step 1** Choose **System > Date/Time Group**.
- Step 2** To create a new date/time group from an existing group, choose the date/time group with settings that are similar to the group you want to create, and click **Copy**.
- Step 3** Enter or edit the appropriate settings as described in [Table 5-1](#).
- Step 4** Click **Insert** to save the new date/time group in the database.
-

Next Steps

After adding a new date/time group to the database, you can assign it to a device pool to configure the date and time information for that device pool. For more information, see “[Adding a Device Pool](#)” section on page 8-2.

Related Topics

- [Updating a Date/Time Group](#), page 5-2
- [Deleting a Date/Time Group](#), page 5-3
- [Date/Time Group Configuration Settings](#), page 5-4

Updating a Date/Time Group

This section describes how to update a date/time group.

Procedure

- Step 1** Choose **System > Date/Time Group**.
- Step 2** From the Date/Time Group list, choose the date/time group you want to update.

- Step 3** Update the appropriate settings as described in [Table 5-1](#).
- Step 4** Click **Update** to save the changes in the database.
- Step 5** To apply the changes, restart the devices in the device pool that uses this date/time group. See the [“Updating a Device Pool” section on page 8-4](#) for information on restarting devices.
-

Related Topics

- [Adding a Date/Time Group, page 5-2](#)
- [Deleting a Date/Time Group, page 5-3](#)
- [Date/Time Group Configuration Settings, page 5-4](#)

Deleting a Date/Time Group

This section describes how to delete a date/time group from the Cisco CallManager database.

Before You Begin

You cannot delete a date/time group that is used by any device pool. If you try to delete a date/time group that is in use, Cisco CallManager displays an error message. Before deleting a date/time group that is currently in use, you must perform either or both of the following tasks:

- Assign a different date/time group to any device pools that are using the date/time group you want to delete. See the [“Updating a Device Pool” section on page 8-4](#).
- Delete the device pools that are using the date/time group you want to delete. See the [“Deleting a Device Pool” section on page 8-5](#).

Procedure

- Step 1** Choose **System > Date/Time Group**.
- Step 2** From the Date/Time Group list, choose the date/time group you want to delete.

Step 3 Click **Delete**.

Step 4 When prompted to confirm the delete operation, click either **OK** to delete or **Cancel** to cancel the delete operation.

Related Topics

- [Adding a Date/Time Group, page 5-2](#)
- [Updating a Date/Time Group, page 5-2](#)
- [Date/Time Group Configuration Settings, page 5-4](#)

Date/Time Group Configuration Settings

Table 5-1 describes the date/time group configuration settings.

Table 5-1 *Date/Time Group Configuration Settings*

Field	Description
Group Name	Enter the name you want to assign to the new date/time group.
Time Zone	Choose the time zone for the group you are adding. The option “local time zone of CallManager” copies the time zone information from the operating system of the server where Cisco CallManager is installed.
Separator	Choose the separator character to use between the date fields.
Date Format	Choose the date format for the date displayed on the Cisco IP phones.
Time Format	Choose 12-hour or 24-hour time.

Related Topics

- [Adding a Date/Time Group, page 5-2](#)
- [Updating a Date/Time Group, page 5-2](#)
- [Deleting a Date/Time Group, page 5-3](#)



Device Defaults Configuration

Use device defaults to set the system-wide default characteristics of each type of device that registers with a Cisco CallManager. The system-wide device defaults for a device type apply to all auto-registered devices of that type within a Cisco CallManager cluster. You can set the following device defaults for each device type to which they apply:

- Device load
- Device pool
- Phone button template

When a device auto-registers with a Cisco CallManager, it acquires the system-wide device default settings for its device type. After a device registers, you can update its configuration individually to change the device settings.

Installing Cisco CallManager automatically sets device defaults. You cannot create new device defaults or delete existing ones, but you can change the default settings by using the following topics:

- [Updating Device Defaults, page 6-2](#)
- [Device Defaults Configuration Settings, page 6-3](#)
- [Finding Devices With Non-Default Firmware Loads, page 6-4](#)
- [Device Firmware Loads, *Cisco CallManager System Guide*](#)

Updating Device Defaults

This section describes how to modify the device defaults in the Cisco CallManager configuration database.

Before You Begin

Before updating the device defaults, perform any of the following tasks that apply to your system:

- Add new firmware files for the devices to the TFTP server. For each available firmware load, a .bin file exists in the Program Files\Cisco\TFTPPath folder on the Cisco CallManager server.

For example, for the firmware load P002A0305556, a file named P002A0305556.bin exists in the Program Files\Cisco\TFTPPath folder.

- Configure new device pools. See the [“Adding a Device Pool” section on page 8-2](#).
- If the device is a phone, configure new phone templates. See the [“Adding Phone Button Templates” section on page 43-2](#).

Procedure

- Step 1** Choose **System > Device Defaults**.
- Step 2** Update the appropriate settings for the device you want to change as described in [Table 6-1](#).
- Step 3** Click **Update** to save the changes in the Cisco CallManager configuration database.
- Step 4** Click the Reset icon to the left of the device name to reset all the devices of that type and load the new defaults on all Cisco CallManagers in the cluster.

If you choose not to reset all devices of that type, only new devices added after you change the device defaults receive the latest defaults.

Related Topics

- [Device Defaults Configuration Settings, page 6-3](#)
- [Finding Devices With Non-Default Firmware Loads, page 6-4](#)

Device Defaults Configuration Settings

[Table 6-1](#) describes the configuration settings for device defaults.

Table 6-1 *Device Defaults Configuration Settings*

Field Name	Description
Load Information	Enter the ID number of the firmware load used with a particular type of hardware device. If you install an upgrade or patch load, you must update the load information for each type of device that uses the new load.
Device Pool	Choose the device pool associated with each type of device. The device pool defines common characteristics for all devices in the pool.
Phone Template	Choose the phone button template used by each type of Cisco IP phone. The template defines that keys on the phone perform that function.

Related Topics

- [Updating Device Defaults, page 6-2](#)
- [Finding Devices With Non-Default Firmware Loads, page 6-4](#)

Finding Devices With Non-Default Firmware Loads

The Firmware Load Information page in Cisco CallManager Administration enables you to quickly locate devices that are not using the default firmware load for their device type.

Use the following procedure to locate devices that are not using the default firmware load.

Step 1 Select **Device > Firmware Load Information**.

The page updates to display a list of device types that require firmware loads. For each device type, the **Devices Not Using Default Load** column links to configuration settings for any devices that use a non-default load.

Step 2 Click view details in the **Devices Not Using Default Load** column to view a list of devices of that type that are using a non-default device load.

Related Topics

- [Updating Device Defaults, page 6-2](#)
- [Device Defaults Configuration, page 6-1](#)



Region Configuration

Use regions to specify the voice codec used for calls within a region and between existing regions. The voice codec determines the type of compression and maximum amount of bandwidth used per call.



Note

The default voice codec for all calls through Cisco CallManager is G.711. If you do not plan to use any other voice codec, you do not need to use regions.

Use the following procedures to add, update, or delete regions:

- [Adding a Region, page 7-2](#)
- [Updating a Region, page 7-3](#)
- [Deleting a Region, page 7-4](#)
- [Region Configuration Settings, page 7-5](#)

Refer to the “Regions” section in the *Cisco CallManager System Guide* for more information about configuring regions and selecting voice codecs.

Adding a Region

This section describes how to add a new region to the Cisco CallManager database.

Procedure

- Step 1** Choose **System > Region**.
- Step 2** In the Region Name field, enter the name you want to assign to the new region and click **Insert**.
- Step 3** Using the drop-down list boxes, choose the voice codec to use for calls within the new region and between the new region and existing regions. The voice codec determines the type of compression and the maximum amount of bandwidth allocated for these calls.
- See [Table 7-1](#) for a summary of the available codec types and bandwidth usage.
- Before saving the changes, you can click **Cancel Changes** to reset all fields to original values.
- Step 4** Click **Update** to save the new region in the database.
-

Next Step

After adding a new region to the database, you can use it to configure device pools. Devices acquire a region setting from the device pool to which they are assigned. See the [“Adding a Device Pool” section on page 8-2](#) for information on configuring device pools.

Related Topics

- [Updating a Region, page 7-3](#)
- [Deleting a Region, page 7-4](#)
- [Region Configuration Settings, page 7-5](#)
- [Adding a Device Pool, page 8-2](#)

Updating a Region

This section describes how to update the configuration for a region.

Procedure

- Step 1** Choose **System > Region**.
- Step 2** From the Region list, choose the region you want to update.
- Update the codec settings for calls within the region and between other regions. See [Table 7-1](#) for a summary of the available codec types and bandwidth usage.
- Before saving the changes, you can click **Cancel** to reset all fields to original values.
- Step 3** Click **Update** to save the changes in the database.
- Step 4** Click **Restart Devices** to apply the changes to all devices that use the updated region.
-

Related Topics

- [Adding a Region, page 7-2](#)
- [Deleting a Region, page 7-4](#)
- [Region Configuration Settings, page 7-5](#)

Deleting a Region

This section describes how to delete a region from the Cisco CallManager database.

Before You Begin

You cannot delete a region that is being used by any device pools. If you try to delete a region that is in use, Cisco CallManager displays an error message. Before deleting a region that is currently in use, you must perform either or both of the following tasks:

- Update the device pools to use a different region. See the [“Updating a Device Pool” section on page 8-4](#).
- Delete the device pools that are using the region you want to delete. See the [“Deleting a Device Pool” section on page 8-5](#).

Procedure

- Step 1** Choose **System > Region**.
- Step 2** From the Region list, choose the region you want to delete.
- Step 3** Click **Delete**.
-

Related Topics

- [Adding a Region, page 7-2](#)
- [Updating a Region, page 7-3](#)
- [Region Configuration Settings, page 7-5](#)

Region Configuration Settings

[Table 7-1](#) summarizes the available voice codecs that can be specified for regions. The total bandwidth used per call depends on the voice codec type as well as factors such as data packet size and overhead (packet header size). The bandwidth figures shown in [Table 7-1](#) apply for 30-ms data packets and include IP headers.

Table 7-1 Region Configuration Settings

Voice Codec	Bandwidth Used Per Call (Including IP Headers) With 30-ms Data Packets	Description
G.711	80 kbps	Default codec for all calls in Cisco CallManager.
G.723	24 kbps	Low-bit-rate codec supported for use with older Cisco IP Phone model 12 SP Series and Cisco IP Phone model 30 VIP.
G.729	24 kbps	Low bit-rate codec supported for Cisco IP Phone 7900 family models.
Wideband	272 kbps	High-quality, high-bandwidth voice codec for IP-phone to IP-phone calls supported by Cisco IP Phone 7900 family models.
GSM	29 kbps	The Global System for Mobile Communications (GSM) codec that enables the MNET system for GSM wireless handsets to interoperate with Cisco CallManager.

Related Topics

- [Adding a Region, page 7-2](#)
- [Updating a Region, page 7-3](#)
- [Deleting a Region, page 7-4](#)



Device Pool Configuration

Use device pools to define sets of common characteristics for devices. You can specify the following device characteristics for a device pool:

- Cisco CallManager group
- Date/time group
- Region
- Media resource group list
- Music On Hold (MOH) audio sources
- Calling search space for auto-registration
- Auto-answer enable for Cisco IP phones that support this feature

Use the following topics to add, update, or delete a device pool:

- [Adding a Device Pool, page 8-2](#)
- [Updating a Device Pool, page 8-4](#)
- [Deleting a Device Pool, page 8-5](#)
- [Device Pool Configuration Settings, page 8-6](#)

Refer to the “[System-Level Configuration Settings](#)” section in the *Cisco CallManager System Guide* for more information about device pools and the device settings that are assigned through device pools.

Adding a Device Pool

This section describes how to add a new device pool to the Cisco CallManager database. After adding a new device pool to the database, you can use it to configure devices such as Cisco IP phones, gateways, conference bridges, transcoders, media termination points, voice mail ports, CTI route points, and so on.

Before You Begin

Before configuring a device pool, you must configure the following items if you want to choose them for the device pool:

- Cisco CallManager group (required). See the [“Adding a Cisco CallManager Group” section on page 4-2](#).
- Date/time group (required). See the [“Adding a Date/Time Group” section on page 5-2](#).
- Region (required). See the [“Adding a Region” section on page 7-2](#).
- Media resource group list (optional). See the [“Adding a Media Resource Group List” section on page 29-2](#).
- MOH audio sources (optional). See the [“Adding a Music On Hold Audio Source” section on page 27-2](#).
- Calling search space for auto-registration (optional). See the [“Adding a Calling Search Space” section on page 13-3](#).

Procedure

- Step 1** Choose **System > Device Pool**.
- Step 2** To create a device pool from an existing device pool with settings that are similar to the one you want to configure, choose the existing device pool and click **Copy**.
- Step 3** Enter or edit the appropriate fields as described in the “[Device Pool Configuration Settings](#)” section on page 8-6.
- Step 4** Click **Insert** to save the device pool information in the database.
- Step 5** Click either **Auto Answer On** or **Auto Answer Off** to enable or disable the Auto Answer feature on all phones that support it in this device pool. For more information on configuring the Auto Answer feature, see the “[Configuring Directory Numbers](#)” section on page 42-27.
-

Related Topics

- [Device Defaults Configuration](#), page 6-1
- [Updating a Device Pool](#), page 8-4
- [Deleting a Device Pool](#), page 8-5
- [Device Pool Configuration Settings](#), page 8-6

Updating a Device Pool

This section describes how to modify the configuration of an existing device pool.

Procedure

- Step 1** Choose **System > Device Pool**.
- Step 2** In the Device Pools list, choose the device pool you want to update.
- Step 3** Update the appropriate settings as described in [Table 8-1](#). Before saving the changes, you can click **Cancel** to reset all fields to original values.
- Step 4** Click **Update** to save the changes in the database.
- Step 5** Restart the devices to apply the changes. To restart all the devices in the selected device pool, click **Restart Devices**.



Tips

For your convenience in restarting devices, the **Restart Devices** button restarts all devices in the selected device pool.



Caution

Restarting devices can cause them to drop calls.

Related Topics

- [Adding a Device Pool, page 8-2](#)
- [Deleting a Device Pool, page 8-5](#)
- [Device Pool Configuration Settings, page 8-6](#)

Deleting a Device Pool

This section describes how to delete a device pool from the Cisco CallManager database.

Before You Begin

You cannot delete a device pool if it has any devices assigned to it, if it is used for Device Defaults configuration, or if it is the only device pool in the database. If you try to delete a device pool that is in use, an error message displays. Before deleting a device pool that is currently in use, you must perform either or both of the following tasks:

- Update the devices to assign them to a different device pool. See the [“Updating a Phone” section on page 42-9](#).
- Delete the devices assigned to the device pool you want to delete. See the [“Deleting a Phone” section on page 42-10](#).

Procedure

- Step 1** Choose **System > Device Pool**.
- Step 2** In the Device Pools list, choose the device pool you want to delete.
- Step 3** Click **Delete**.
- Step 4** When prompted to confirm the delete operation, click either **OK** to delete or **Cancel** to cancel the delete operation.
-

Related Topics

- [Adding a Device Pool, page 8-2](#)
- [Updating a Device Pool, page 8-4](#)
- [Device Pool Configuration Settings, page 8-6](#)

Device Pool Configuration Settings

Table 8-1 lists and describes device pool configuration settings.

Table 8-1 Device Pool Configuration Settings

Field Name	Description
Device Pool Name	Enter the name of the new device pool you are creating.
Cisco CallManager Group	Choose the Cisco CallManager group to assign to devices in this device pool. A Cisco CallManager group specifies a prioritized list of up to three Cisco CallManagers. The first Cisco CallManager in the list serves as the primary Cisco CallManager for that group, and the other members of the group serve as backup Cisco CallManagers for redundancy.
Date/Time Group	Choose the date/time group to assign to devices in this device pool. The date/time group specifies the time zone and the display formats for date and time.
Region	Choose the Cisco CallManager region to assign to devices in this device pool. The Cisco CallManager region settings specify voice codec that can be used for calls within a region and between other regions.
Media Resource Group List	Choose a media resource group list from the drop-down list box. A media resource group list specifies a prioritized list of media resource groups. An application selects the required media resource (for example, a music on hold server, transcoder, or conference bridge) from the available media resource groups according to the priority order defined in a media resource group list.
User Hold MOH Audio Source	Choose the audio source to use for music on hold (MOH) when a user initiates a hold action.
Network Hold MOH Audio Source	Choose the audio source to use for music on hold (MOH) when the network initiates a hold action.

Table 8-1 Device Pool Configuration Settings (continued)

Field Name	Description
Calling Search Space for Auto-registration	Choose the calling search space to assign to devices in this device pool that auto-registers with Cisco CallManager. The calling search space specifies partitions devices that can search when attempting to complete a call.
Auto-Answer Feature Control	<p>Choose enable/disable for the auto-answer feature on Cisco IP phones that support this feature:</p> <ul style="list-style-type: none">• Auto Answer On enables auto-answer for all lines on all phones in the device pool.• Auto Answer Off disables auto-answer for all lines on all phones in the device pool. <p>The auto-answer feature automatically delivers calls to agents who are available and ready to take calls. Agents receive a notification that the call has arrived (for example, a zip tone or a beep tone) but do not have to press a button to answer the call.</p> <p>You must reset the phones to apply changes to Auto Answer settings.</p> <p>You can override the device pool setting for auto-answer when configuring individual lines (directory numbers) on the phones in the device pool.</p>

Related Topics

- [Adding a Device Pool, page 8-2](#)
- [Updating a Device Pool, page 8-4](#)
- [Deleting a Device Pool, page 8-5](#)



Enterprise Parameters Configuration

Enterprise parameters provide default settings that apply to all devices and services in the same cluster. (A cluster is a set of Cisco CallManagers that share the same database.) When you install a new Cisco CallManager, it uses the enterprise parameters to set the initial values of its device defaults. For more information on device defaults, see the [“Device Defaults Configuration” section on page 6-1](#) and refer to the [“System-Level Configuration Settings”](#) section of the *Cisco CallManager System Guide*.

You cannot add or delete enterprise parameters, but you can use the following procedure to update existing enterprise parameters.



Note

Many of the enterprise parameters rarely require change. Do not change an enterprise parameter unless you fully understand the feature that you are changing or unless the Cisco Technical Assistance Center (TAC) specifies the change.

Procedure

Step 1 Choose **System > Enterprise Parameters**.

Step 2 Update the appropriate parameter settings.

To view the description of a particular enterprise parameter, click on the parameter name. To view the descriptions of all the enterprise parameters, click the **i** button.

Step 3 Click **Update** to save the changes in the database.



Location Configuration

Use locations to implement call admission control in a centralized call processing system. Call admission control enables you to regulate voice quality by limiting the amount of bandwidth available for calls over links between the locations. For more information, refer to the “[Call Admission Control](#)” section in the *Cisco CallManager System Guide*.



Note

If you do not use call admission control to limit the voice bandwidth on an IP WAN link, an unlimited number of calls can be active on that link at the same time. This can cause the voice quality of each call to degrade as the link becomes oversubscribed.

In a centralized call processing system, a single Cisco CallManager cluster provides call processing for all locations on the IP telephony network. The Cisco CallManager cluster usually resides at the main (or central) location, along with other devices such as phones and gateways. The remote locations contain additional devices but no Cisco CallManager. IP WAN links connect the remote locations to the main location.

The following topics explain locations in more detail:

- [Adding a Location, page 10-2](#)
- [Updating a Location, page 10-3](#)
- [Deleting a Location, page 10-3](#)
- [Location Configuration Settings, page 10-5](#)
- [Locations, Cisco CallManager System Guide](#)

Adding a Location

This section describes how to add a new location to the Cisco CallManager database.

Before You Begin

Before configuring a location, you must configure the Cisco CallManagers that form the cluster. For details, see the [“Adding a Cisco CallManager” section on page 3-1](#)

Procedure

- Step 1** Choose **System > Location**.
- Step 2** If there is an existing location with settings that are similar to the new location you want to configure, click the existing location to display its settings. If you want to use a copy of the existing location to configure the new one, click **Copy**.
- Step 3** Enter the appropriate settings as described in [Table 10-1](#).
- Step 4** Click **Insert** to save the location information in the database.
-

Next Steps

After adding a new location to the database, you can assign devices to that location. For example, see:

- [Gateway Configuration, page 41-1](#)
- [Cisco IP Phone Configuration, page 42-1](#)

Related Topics

- [Updating a Location, page 10-3](#)
- [Deleting a Location, page 10-3](#)
- [Location Configuration Settings, page 10-5](#)

Updating a Location

This section describes how to modify the configuration of a location.

Procedure

- Step 1** Choose **System > Location**.
 - Step 2** From the Locations list, choose the location you want to update.
 - Step 3** Update the appropriate settings as described in [Table 10-1](#). Before saving the changes, you can click **Cancel** to reset all fields to original values.
 - Step 4** Click **Update** to save the changes in the database.
-

Related Topics

- [Adding a Location, page 10-2](#)
- [Deleting a Location, page 10-3](#)
- [Location Configuration Settings, page 10-5](#)

Deleting a Location

This section describes how to delete a location from the Cisco CallManager database.

Before You Begin

You cannot delete a location that has any devices assigned to it. If you try to delete a location that is in use, Cisco CallManager displays an error message. Before deleting a location that is currently in use, you must perform either or both of the following tasks:

- Update the devices to assign them to a different location.
- Delete the devices assigned to the location you want to delete.

**Note**

Deleting a location allocates infinite bandwidth for the links connected to that location and allows an unlimited number of calls on those links. Deleting a location can cause voice quality on the links to degrade.

Procedure

-
- Step 1** Choose **System > Location**.
- Step 2** From the Locations list, choose the location you want to delete.
- Step 3** Click **Delete**.
- Step 4** When prompted to confirm the delete operation, click either **OK** to confirm deletion or **Cancel** to cancel the delete operation.
-

Related Topics

- [Adding a Location, page 10-2](#)
- [Updating a Location, page 10-3](#)
- [Location Configuration Settings, page 10-5](#)

Location Configuration Settings

Table 10-1 describes the location configuration settings.

Table 10-1 Location Configuration Settings

Field	Description
Location Name	Enter the name of the new location you are creating
Bandwidth	<p>Enter the maximum amount of voice bandwidth (in kbps) available for all calls on the link between this location and other locations.</p> <p>For purposes of location bandwidth calculations only, assume that each call consumes the following amount of bandwidth:</p> <ul style="list-style-type: none">• G.711 call uses 80 kbps• G.723 call uses 24 kbps• G.729 call uses 24 kbps• GSM call uses 29 kbps• Wideband call uses 272 kbps <p>Note To improve voice quality, lower the bandwidth setting, so that fewer active calls are allowed on the link to this location. Entering a value of zero allocates infinite bandwidth and allows an unlimited number of calls on the link.</p>

Related Topics

- [Adding a Location, page 10-2](#)
- [Updating a Location, page 10-3](#)
- [Deleting a Location, page 10-3](#)



Auto-Registration Configuration

Use auto-registration if you want Cisco CallManager to assign directory numbers automatically to new phones as they connect to the IP telephony network. Once a phone has auto-registered, you can move it to a new location and assign it to a different device pool without affecting its directory number.

This section covers the following topics:

- [Enabling Auto-Registration, page 11-1](#)
- [Disabling Auto-Registration, page 11-3](#)
- [Auto-Registration Configuration Settings, page 11-4](#)
- [Reusing Auto-Registration Numbers, page 11-7](#)

Enabling Auto-Registration

This section describes how to enable auto-registration for new devices.



Caution

Cisco CallManager disables auto-registration by default. Enabling auto-registration carries a security risk in that “rogue” phones can automatically register with Cisco CallManager. You should enable auto-registration only for brief periods when you want to perform bulk phone adds.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **System > Cisco CallManager**.
- Step 3** From the list of Cisco CallManagers, choose the Cisco CallManager you want to enable for auto-registration.
- Step 4** Enter the appropriate Auto-registration Information, as described in [Table 11-1](#).
- Step 5** Click **Update** to save any changes in the database.
- Step 6** Repeat [Step 3](#) through [Step 5](#) for each Cisco CallManager that you want to enable for auto-registration. You can designate only one primary Cisco CallManager for auto-registration, but you can designate other Cisco Call Managers as backups for purposes of auto-registration. See the “[Redundancy](#)” section in the *Cisco CallManager System Guide*.
- Step 7** Choose **System > Cisco CallManager Group**.
- Step 8** From the list of Cisco CallManager groups, choose the group that is enabled for auto-registration. (In most systems, the name of this group is Default.) This group serves as the default Cisco CallManager group for devices that auto-register. Make sure the *Selected* list for this group contains the Cisco CallManagers you configured for auto-registration in [Step 3](#).
- Step 9** If you made any changes to the group configuration, click **Update** to save the changes in the database.
- Step 10** Choose **System > Device Pool**.
- Step 11** From the list of device pools, choose one of the default device pools assigned in the Device Defaults (see the “[Device Defaults Configuration](#)” section on [page 6-1](#)). Cisco CallManager assigns each auto-registered device to a default device pool based on the device type.
- Step 12** From the drop-down list box for Cisco CallManager Group, choose the Cisco CallManager group you configured for auto-registration in [Step 8](#). This step assigns the default device pool to the default Cisco CallManager group for auto-registration.
- Step 13** From the drop-down list box for Calling Search Space for Auto-Registration, choose the calling search space to assign to the devices in this device pool that auto-register with Cisco CallManager. The calling search space specifies the route partitions used by the devices in the pool.

- Step 14** Click **Update** to save the device pool changes in the database.
- Step 15** Repeat [Step 11](#) through [Step 14](#) for each device pool listed in the Device Defaults.
-

Related Topics

- [Disabling Auto-Registration, page 11-3](#)
- [Auto-Registration Configuration Settings, page 11-4](#)
- [Reusing Auto-Registration Numbers, page 11-7](#)

Disabling Auto-Registration

This section describes how to disable auto-registration.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **System > Cisco CallManager**.
- Step 3** From the Cisco CallManager list, choose the Cisco CallManager where you want to disable auto-registration.
- Step 4** Click the Auto-registration Disabled option to disable auto-registration for this Cisco CallManager (when this box is checked, auto-registration is disabled).



Note You can also disable auto-registration by setting the Starting Directory Number and Ending Directory Number to the same value.

- Step 5** Click **Update** to save the changes in the database.
- Step 6** Repeat [Step 3](#) through [Step 5](#) for each Cisco CallManager where you want to disable auto-registration.
-

Related Topics

- [Enabling Auto-Registration, page 11-1](#)
- [Auto-Registration Configuration Settings, page 11-4](#)
- [Reusing Auto-Registration Numbers, page 11-7](#)

Auto-Registration Configuration Settings

Table 11-1 describes the auto-registration configuration settings.

Table 11-1 Auto-Registration Configuration Settings

Field Name	Description
Starting Directory Number	<p>Enter the first directory number to use for auto-registration of devices.</p> <p>Specifying a range of directory numbers in the Starting Directory Number and Ending Directory Number fields automatically enables auto-registration.</p> <p>Setting the starting and ending directory numbers to the same value disables auto-registration.</p>
Ending Directory Number	<p>Enter the last directory number to use for auto-registration of devices.</p> <p>Specifying a range of directory numbers in the Starting Directory Number and Ending Directory Number fields automatically enables auto-registration.</p> <p>Setting the starting and ending directory numbers to the same value disables auto-registration.</p>
Partition	<p>Choose the partition to which auto-registered directory numbers belong. If you are not using partitions, choose None.</p> <p>You must choose a valid directory number range for auto-registration before you can choose a partition and external phone number mask.</p> <p>The partition field resets if you disable auto-registration.</p>

Table 11-1 Auto-Registration Configuration Settings (continued)

Field Name	Description
External Phone Number Mask	<p data-bbox="588 285 1240 479">Specify the mask used to format caller ID information for external (outbound) calls made from the auto-registered devices. The mask can contain up to 50 characters. Enter the literal digits that you want to appear in the caller ID information, and use Xs to represent the directory number of the auto-registered device.</p> <p data-bbox="588 495 1240 776">For example, if you specify a mask of 972813XXXX and enable the Use External Phone Number Mask option on the route pattern used to make the external call, an external call from extension 1234 displays a caller ID number of 9728131234. If you specify a mask of all literal digits (such as 9728135000) to represent a main attendant number, that literal number becomes the caller ID displayed for an external call from any auto-registered device.</p>

Table 11-1 Auto-Registration Configuration Settings (continued)

Field Name	Description
Voice Message Box Mask	<p>Enter a mask used to format the voice message box number for auto-registered phones. For example, if you specify a mask of 972813XXXX, then the voice message box number for directory number 7253 becomes 9728137253. If you do not enter a mask, then the voice message box number is the same as the directory number (7253 in this example).</p> <p>By default, Cisco CallManager sets the voice message box number to the same value as the directory number. You can change the voice message box number when configuring the directory number. See the “Configuring Directory Numbers” section on page 42-27 for more information.</p>
Auto-registration Disabled on this Cisco CallManager	<p>Cisco CallManager disables auto-registration by default to prevent unauthorized connections to the network. When auto-registration is disabled, you must configure the directory numbers manually whenever you add new devices to your network.</p> <ul style="list-style-type: none"> • Uncheck the auto-registration Disabled option to enable auto-registration for this Cisco CallManager. • Check the Auto-registration Disabled option to disable auto-registration for this Cisco CallManager. <p>You can disable auto-registration by setting the Starting Directory Number and Ending Directory Number to the same value.</p> <p>If starting and ending directory numbers are specified when you disable auto-registration by checking this option, Cisco CallManager sets the starting and ending directory numbers to the same value.</p> <p>The partition and external phone mask information fields also reset when you disable auto-registration.</p>

Related Topics

- [Enabling Auto-Registration, page 11-1](#)
- [Disabling Auto-Registration, page 11-3](#)
- [Reusing Auto-Registration Numbers, page 11-7](#)

Reusing Auto-Registration Numbers

When you connect a new device to the network, Cisco CallManager assigns the next available (unused) auto-registration directory number to that device. If you manually change the directory number of an auto-registered device, or if you delete that device from the database, Cisco CallManager can reuse the auto-registration directory number of that device.

When a device attempts to auto-register, Cisco CallManager searches the range of auto-registration numbers you specified and tries to find the next available directory number to assign to the device. It begins the search with the next directory number in sequence after the last one assigned. If it reaches the ending directory number in the range, Cisco CallManager continues to search from the starting directory number in the range.

You can use the following procedure to reset the range of auto-registration directory numbers and force Cisco CallManager to search from the starting number in the range.

Procedure

-
- Step 1** Open Cisco CallManager Administration.
 - Step 2** Choose **System > Cisco CallManager**.
 - Step 3** Choose the Cisco CallManager where you want to reset auto-registration.
 - Step 4** Write down the current settings for Starting Directory Number and Ending Directory Number.
 - Step 5** Click **Auto-registration Disabled on this Cisco CallManager**.

**Caution**

New phones cannot auto-register while auto-registration is disabled.

- Step 6** Click **Update**.
- Step 7** Set the Starting Directory Number and Ending Directory Number to their previous values (or to new values, if desired).
- Step 8** Click **Update**.
-

Related Topics

- [Enabling Auto-Registration, page 11-1](#)
- [Disabling Auto-Registration, page 11-3](#)
- [Auto-Registration Configuration Settings, page 11-4](#)



PART 3

Route Configuration



Partition Configuration

A partition contains a list of route patterns (directory number (DN) and route patterns). Partitions facilitate call routing by dividing the route plan into logical subsets based on organization, location, and call type. For more information about partitions, refer to “[Partitions and Calling Search Spaces](#)” in the *Cisco CallManager System Guide*.

Use the following topics to add or delete route partitions:

- [Finding a Partition, page 12-1](#)
- [Adding a Partition, page 12-3](#)
- [Updating a Partition, page 12-4](#)
- [Deleting a Partition, page 12-5](#)
- [Partition Configuration Settings, page 12-3](#)

Finding a Partition

Because you might have several partitions in your network, Cisco CallManager lets you locate specific partitions based on specific criteria. Use the following procedure to locate partitions.

Procedure

Step 1 Choose **Route Plan > Partition**.

The Find and List Partitions pane displays.

- Step 2** From the drop-down list box, choose one of the following criteria:
- begins with
 - contains
 - ends with
 - is exactly
- Step 3** Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all partitions registered in the database, click **Find** without entering any search text.

A list of discovered partitions displays by:

- Partition name
- Description



Note You can delete multiple partitions from the Find and List Partitions pane by checking the check boxes next to the appropriate partitions and clicking **Delete Selected**. You can delete all of the partitions on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

- Step 4** Click the partition from the list of records that matches your search criteria. The pane displays the partition you choose.
-

Related Topics

- [Finding a Partition, page 12-1](#)
- [Adding a Partition, page 12-3](#)
- [Updating a Partition, page 12-4](#)
- [Deleting a Partition, page 12-5](#)
- [Partition Configuration Settings, page 12-3](#)

Adding a Partition

Perform the following procedure to add a partition.

Procedure

- Step 1** Choose **Route Plan > Partition** in the menu bar.
- Step 2** Click **Add a New Partition**.
- Step 3** Enter the appropriate settings as described in [Table 12-1](#).

Table 12-1 Partition Configuration Settings

Field	Description
Partition Name	Enter a name in the Partition Name field. Ensure each partition name is unique to the route plan.
Description	Enter a description in the Description field. The description can comprise up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). If you do not enter a description, the Cisco CallManager automatically enters a partition name in this field.



Timesaver

Use concise and descriptive names for your partitions. The CompanynameLocationCalltype format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a partition. For example, CiscoDallasMetroPT identifies a partition for toll-free, inter- local access and transport area (LATA) calls from the Cisco office in Dallas.



Tips

You can enter multiple partitions at the same time by entering the partition name and description, if applicable, in the Partition Name & Description text box. Remember to use one line for each partition entry and separate the partition name and description with a comma.

Step 4 Click **Insert** to add the new partition(s).



Note You can only configure one partition at a time. To configure a different partition than the one that displays, click **Back to Find/List Partitions** and follow the instructions in the [“Finding a Partition” section on page 12-1](#) to locate the partition you want to configure.

Related Topics

- [Finding a Partition, page 12-1](#)
- [Updating a Partition, page 12-4](#)
- [Deleting a Partition, page 12-5](#)

Updating a Partition

This section describes how to update a partition.

Procedure

-
- Step 1** Click **Route Plan > Partition** in the menu bar.
- Step 2** Locate the partition you want to update. See the [“Finding a Partition” section on page 12-1](#).
- Step 3** Update the partition name and/or description and click **Update**.
-

Related Topics

- [Finding a Partition, page 12-1](#)
- [Adding a Partition, page 12-3](#)
- [Deleting a Partition, page 12-5](#)
- [Partition Configuration Settings, page 12-3](#)

Deleting a Partition

The following procedure describes how to delete a partition.

**Note**

You cannot delete a partition if it is assigned to a calling search space.

Procedure

-
- Step 1** Choose **Route Plan > Partition** in the menu bar.
- Step 2** Locate the partition you want to delete. See the [“Finding a Partition” section on page 12-1](#).
- Step 3** Check the check box of the partition you want to delete and click **Delete Selected**.

**Tips**

You can delete all the partition in the list by checking the check box in the Matching Record(s) title bar and clicking **Delete Selected**.

A message displays, stating that you cannot undo this action.

- Step 4** Click **OK** to delete the partition or **Cancel** to cancel the deletion.

**Caution**

Check carefully to ensure that you are deleting the correct partition before initiating this action. You cannot retrieve deleted partitions. If a partition is accidentally deleted, you must rebuild it.

**Tips**

You can also delete a partition by locating and displaying the partition you want to delete and clicking **Delete**.

Related Topics

- [Finding a Partition, page 12-1](#)
- [Adding a Partition, page 12-3](#)
- [Partition Configuration Settings, page 12-3](#)



Calling Search Space Configuration

A calling search space comprises an ordered list of route partitions, typically assigned to devices. Calling search spaces determine the partitions where calling devices search when attempting to complete a call. For more detailed information on calling search spaces and partitions, refer to [“Partitions and Calling Search Spaces”](#) in the *Cisco CallManager System Guide*.

Use the following topics to add, update, copy, or delete a calling search space:

- [Finding a Calling Search Space, page 13-2](#)
- [Adding a Calling Search Space, page 13-3](#)
- [Updating a Calling Search Space, page 13-4](#)
- [Copying a Calling Search Space, page 13-5](#)
- [Deleting a Calling Search Space, page 13-6](#)
- [Calling Search Space Configuration Settings, page 13-7](#)

Finding a Calling Search Space

Because you might have several calling search spaces in your network, Cisco CallManager lets you locate specific calling search spaces based on specific criteria. Use the following procedure to locate calling search spaces.

Procedure

Step 1 Choose **Route Plan > Calling Search Space**.

The Find and List Calling Search Spaces pane displays.

Step 2 From the drop-down list box, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

Step 3 Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all calling search spaces registered in the database, click **Find** without entering any search text.

A list of discovered calling search spaces displays by:

- CSS name
- Description



Note You can delete multiple calling search spaces from the Find and List Calling Search Spaces pane by checking the check boxes next to the appropriate calling search spaces and clicking **Delete Selected**. You can choose all of the calling search spaces on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

- Step 4** Click the calling search space from the list of records that matches your search criteria.

The pane displays the calling search space you choose.

Related Topics

- [Adding a Calling Search Space, page 13-3](#)
- [Updating a Calling Search Space, page 13-4](#)
- [Copying a Calling Search Space, page 13-5](#)
- [Deleting a Calling Search Space, page 13-6](#)
- [Calling Search Space Configuration Settings, page 13-7](#)

Adding a Calling Search Space

The following procedure describes how to add a calling search space.

Procedure

- Step 1** Choose **Route Plan > Calling Search Space** in the menu bar.
- Step 2** Click **Add a New Calling Search Space**.
- Step 3** Enter the appropriate settings as described in [Table 13-1](#).
- Step 4** Click **Insert** to add the new calling search space.
- The message “Status: Insert completed” displays.
- Step 5** To add more calling search spaces, click **Add a New Calling Search Space** and repeat this procedure.
-

Related Topics

- [Finding a Calling Search Space, page 13-2](#)
- [Updating a Calling Search Space, page 13-4](#)

- [Copying a Calling Search Space, page 13-5](#)
- [Deleting a Calling Search Space, page 13-6](#)

Updating a Calling Search Space

The following procedure describes how to update a calling search space.

Procedure

- Step 1** Choose **Route Plan > Calling Search Space** in the menu bar.
 - Step 2** Locate the calling search space you want to update. See the [“Finding a Calling Search Space” section on page 13-2](#).
 - Step 3** Update the appropriate settings as described in [Table 13-1](#).
 - Step 4** Click **Update**.
-

Related Topics

- [Finding a Calling Search Space, page 13-2](#)
- [Adding a Calling Search Space, page 13-3](#)
- [Copying a Calling Search Space, page 13-5](#)
- [Deleting a Calling Search Space, page 13-6](#)
- [Calling Search Space Configuration Settings, page 13-7](#)

Copying a Calling Search Space

The following procedure describes how to copy a calling search space.

Procedure

- Step 1** Choose **Route Plan > Calling Search Space** in the menu bar.
- Step 2** Locate the calling search space you want to copy. See the [“Finding a Calling Search Space” section on page 13-2](#).
- Step 3** Check the check box next to the calling search space you want to copy.
- Step 4** Click the **Copy** icon of that calling search space.
The pane displays the copy of the calling search space.
- Step 5** Update the appropriate settings as described in [Table 13-1](#).
- Step 6** Click **Insert** to add the new calling search space.



Tips

You can also copy a calling search space by locating and displaying the calling search space you want to copy and clicking **Copy**. Then, follow the instructions in [Step 5](#) through [Step 6](#).

Related Topics

- [Finding a Calling Search Space, page 13-2](#)
- [Adding a Calling Search Space, page 13-3](#)
- [Updating a Calling Search Space, page 13-4](#)
- [Deleting a Calling Search Space, page 13-6](#)
- [Calling Search Space Configuration Settings, page 13-7](#)

Deleting a Calling Search Space

The following procedure describes how to delete a calling search space.

**Note**

You cannot delete calling search spaces that are being used by devices or translation patterns.

Procedure

- Step 1** Choose **Route Plan > Calling Search Space** in the menu bar.
- Step 2** Locate the calling search space you want to delete. See the [“Finding a Calling Search Space” section on page 13-2](#).
- Step 3** Check the check box of the calling search space you want to delete and click **Delete Selected**.

A message displays, stating that you cannot undo this action.

- Step 4** Click **OK** to delete the calling search space or **Cancel** to cancel the deletion.

**Caution**

Check carefully to ensure that you are deleting the correct calling search space before initiating this action. You cannot retrieve deleted calling search spaces. If a calling search space is accidentally deleted, you must rebuild it.

**Tips**

You can also delete a calling search space by locating and displaying the calling search space you want to delete and clicking **Delete**.

Related Topics

- [Finding a Calling Search Space, page 13-2](#)
- [Adding a Calling Search Space, page 13-3](#)
- [Updating a Calling Search Space, page 13-4](#)

- [Copying a Calling Search Space, page 13-5](#)
- [Calling Search Space Configuration Settings, page 13-7](#)

Calling Search Space Configuration Settings

Table 13-1 describes the calling search space configuration settings.

Table 13-1 Calling Search Space Configuration Settings

Field	Description
Calling Search Space Name	<p>Enter a name in the Calling Search Space Name field. The name can comprise up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Ensure each calling search space name is unique to the plan.</p> <p>Note Use concise and descriptive names for your calling search spaces. The CompanynameLocationCalltype format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a calling search space. For example, CiscoDallasMetroCS identifies a calling search space for toll-free, inter- local access and transport area (LATA) calls from the Cisco office in Dallas.</p>
Description	Enter a description in the Description field. The description can comprise up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_).
Available Partitions	Choose partitions in the Available Partition list box and add them to the Selected Partition list box by clicking the arrow buttons between the two list boxes.
Selected Partition	To change the priority of a partition, choose a partition name in the Selected Partitions list box. Move the partition up or down in the list by clicking the arrows on the right side of the list box.

Related Topics

- [Finding a Calling Search Space, page 13-2](#)
- [Adding a Calling Search Space, page 13-3](#)
- [Updating a Calling Search Space, page 13-4](#)
- [Copying a Calling Search Space, page 13-5](#)



Route Filter Configuration

Route filters, along with route patterns, use dialed-digit strings to determine how a call is handled.

You can only use route filters with North American Numbering Plan (NANP) route patterns; that is, route patterns that use an at symbol (@) wildcard. Route filters allow you to determine which route patterns your users can dial; for example, whether your users can manually select a long-distance carrier (by dialing 101 plus a carrier access code).

See “[Understanding Route Plans](#)” in the *Cisco CallManager System Guide* for more information.



Tips

Always add and define the route filter first and then add the route filter to the route pattern.

Use the following topics to add, update, copy, or delete a route filter:

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Updating a Route Filter, page 14-5](#)
- [Copying a Route Filter, page 14-6](#)
- [Adding Route Filter Clauses, page 14-8](#)
- [Removing Route Filter Clauses, page 14-9](#)
- [Deleting a Route Filter, page 14-10](#)

- [Route Filter Tag Descriptions, page 14-11](#)
- [Route Filter Configuration Settings, page 14-7](#)

Finding a Route Filter

Because you might have several route filters in your network, Cisco CallManager lets you locate specific route filters based on specific criteria. Use the following procedure to locate route filters.

Procedure

Step 1 Choose **Route Plan > Route Filter**.

The Find and List Route Filters pane displays.

Step 2 From the drop-down list box, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

Step 3 Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all route filters registered in the database, click **Find** without entering any search text.

A list of discovered route filters displays by:

- Route filter name
- Clause

**Note**

You can delete multiple route filters from the Find and List Route Filters pane by checking the check boxes next to the appropriate route filters and clicking **Delete Selected**. You can choose all of the route filters on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

- Step 4** Click the route filter from the list of records that matches your search criteria. The pane displays the route filter you choose.
-

Related Topics

- [Adding a Route Filter, page 14-4](#)
- [Updating a Route Filter, page 14-5](#)
- [Copying a Route Filter, page 14-6](#)
- [Adding Route Filter Clauses, page 14-8](#)
- [Removing Route Filter Clauses, page 14-9](#)
- [Deleting a Route Filter, page 14-10](#)
- [Route Filter Tag Descriptions, page 14-11](#)
- [Route Filter Configuration Settings, page 14-7](#)

Adding a Route Filter

The following procedure describes how to add a route filter.

Procedure

- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Click **Add a New Route Filter**.
- Step 3** Enter the appropriate settings as described in [Table 14-1](#).
- Step 4** Click **Continue**.
- Step 5** Choose the route filter tags and operators and enter data, where appropriate, to create a clause for this route filter.



Note For help with entering data for route filter tags and operators, refer to the [“Route Filter Tag Descriptions”](#) section on page 14-11.

- Step 6** Click **Insert** to add the filter.
The message “Status: Insert completed” displays.
-

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Updating a Route Filter, page 14-5](#)
- [Route Filter Tag Descriptions, page 14-11](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Updating a Route Filter

The following procedure describes how to update a route filter.

Procedure

- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Locate the route filter you want to update. See the [“Finding a Route Filter” section on page 14-2](#).
- Step 3** In the Dial Plan drop-down list box, choose North American Numbering Plan.
- Step 4** Update the appropriate settings as described in [Table 14-1](#).
- Step 5** Click **Update**.
-

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Adding Route Filter Clauses, page 14-8](#)
- [Copying a Route Filter, page 14-6](#)
- [Route Filter Tag Descriptions, page 14-11](#)
- [Route Filter Configuration Settings, page 14-7](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Copying a Route Filter

The following procedure describes how to copy a route filter.

Procedure

- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Locate the route pattern you want to copy. See the [“Finding a Route Filter” section on page 14-2](#).
- Step 3** Check the check box next to the route filter you want to copy.
- Step 4** Click the **Copy** icon of that route filter.
The pane displays the copy of the route filter.
- Step 5** In the Route Filter Name field, enter the name for this route filter.
- Step 6** Update the appropriate settings as described in [Table 14-1](#).



Note For help with entering data for route filter tags and operators, refer to the [“Route Filter Tag Descriptions” section on page 14-11](#).

- Step 7** Click **Insert** to add the new route filter.



Tips

You can also copy a route filter by locating and displaying the route filter you want to copy and clicking **Copy**. Then, follow the instructions in [Step 5](#) through [Step 6](#).

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Adding Route Filter Clauses, page 14-8](#)
- [Removing Route Filter Clauses, page 14-9](#)
- [Route Filter Tag Descriptions, page 14-11](#)

- [Route Filter Configuration Settings, page 14-7](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Route Filter Configuration Settings

Table 14-1 describes the route filter configuration settings.

Table 14-1 Route Filter Configuration Settings

Field	Description
Dial Plan	Choose North American Numbering Plan from the drop-down list.
Route Filter Name	<p>Enter a name in the Route Filter Name field. The name can contain up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Ensure each route filter name is unique to the route plan.</p> <p>Note Use concise and descriptive names for your route filters. The CompanynameLocationCalltype format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a route filter. For example, CiscoDallasMetro identifies a route filter for toll-free inter- local access and transport area (LATA) calls from the Cisco office in Dallas.</p>

Related Topics

- [Adding a Route Filter, page 14-4](#)
- [Updating a Route Filter, page 14-5](#)

Adding Route Filter Clauses

Adding route filter clauses allows you to expand upon an existing route filter by incorporating additional operators and entries for existing tags using a logical OR. You can add route filter clauses either when initially adding a new route filter or when updating an existing route filter. This procedure describes adding a route filter clause to an existing route filter.

Procedure

- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Locate the route filter to which you want to add route filter clauses. See the [“Finding a Route Filter” section on page 14-2](#).
- Step 3** Click **Add Clause** to display a new route filter clause data entry pane. All the operator fields for this new clause display NOT-SELECTED.
- Step 4** Select the route filter tags and operators and enter data, where appropriate, to create an additional clause for this route filter.



Note For help with entering data for route filter tags and operators, refer to the [“Route Filter Tag Descriptions” section on page 14-11](#).

- Step 5** Click **Insert** to add the clause.

The message “Status: Insert completed” displays. The new clause displays below the existing clauses on the pane. (Scroll down, if necessary, to view the new information.)

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Removing Route Filter Clauses, page 14-9](#)
- [Route Filter Tag Descriptions, page 14-11](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Removing Route Filter Clauses

You can remove route filter clauses either when setting up a new route filter or when updating an existing route filter. This procedure describes removing a route filter clause from an existing route filter.

Procedure

- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Locate the route filter from which you want to remove route filter clauses.
- Step 3** Scroll down to the top of the clause you want to remove and click **Remove Clause**.

A dialog box appears warning you that you cannot undo removing this route filter clause.



Caution

Each Remove Clause button applies to the clause immediately below the button. Check carefully to ensure that you are removing the correct clause before initiating this action. If you accidentally remove a clause, you cannot retrieve it, and you must rebuild it.

- Step 4** Click **OK** to remove the clause or click **Cancel** to cancel the action. If you click **OK**, the Cisco CallManager removes the clause from the route filter, and the message “Status: Ready” displays.
-

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Deleting a Route Filter, page 14-10](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Deleting a Route Filter

The following procedure describes how to delete a route filter.

**Note**

You cannot delete route filters that are being used in route patterns or translation patterns.

Procedure

-
- Step 1** Choose **Route Plan > Route Filter** in the menu bar.
- Step 2** Locate the route pattern you want to delete. See the [“Finding a Route Filter” section on page 14-2](#).
- Step 3** Check the check box of the route filter you want to delete and click **Delete Selected**.

A message displays stating that you cannot undo this action.

**Caution**

Check carefully to ensure that you are deleting the correct route filter before initiating this action. You cannot retrieve deleted route filters. If a route filter is accidentally deleted, you must rebuild it.

- Step 4** Click **OK** to delete the route filter or **Cancel** to cancel the deletion.

**Tips**

You can also delete a route filter by locating and displaying the route filter you want to delete and clicking **Delete**.

Related Topics

- [Finding a Route Filter, page 14-2](#)
- [Adding a Route Filter, page 14-4](#)
- [Adding Route Filter Clauses, page 14-8](#)
- [Removing Route Filter Clauses, page 14-9](#)
- [Understanding Route Plans, *Cisco CallManager System Guide*](#)

Route Filter Tag Descriptions

The tag serves as the core component of a route filter. A tag applies a name to a subset of the dialed-digit string. For example, the NANP number 972-555-1234 comprises LOCAL-AREA-CODE (972), OFFICE-CODE (555), and SUBSCRIBER (1234) route filter tags.

Route filter tags require operators and can require additional values to decide which calls are filtered.

The values for route filter tag fields can contain the wildcard characters X, *, #, [,], -, ^, and the numbers 0 through 9. The descriptions in [Table 14-2](#) use the notations [2-9] and XXXX to represent actual digits. In this notation, [2-9] represents any single digit in the range 2 through 9, and X represents any single digit in the range 0 through 9. Therefore, the description “The three-digit area code in the form [2-9]XX” means you can enter the actual digits 200 through 999, or all wildcards, or any mixture of actual digits and wildcards that results in a pattern with that range.

Table 14-2 Route Filter Tags

Tag	Description
AREA-CODE	This three-digit area code in the form [2-9]XX identifies the area code for long-distance calls.
COUNTRY CODE	These one-, two-, or three-digit codes specify the destination country for international calls.

Table 14-2 Route Filter Tags (continued)

Tag	Description
END-OF-DIALING	This single character identifies the end of the dialed-digit string. The # character serves as the end-of-dialing signal for international numbers dialed within the NANP.
INTERNATIONAL-ACCESS	This two-digit access code specifies international dialing. Calls originating in the U.S. use 01 for this code.
INTERNATIONAL-DIRECT-DIAL	This one-digit code identifies a direct-dialed international call. Calls originating in the U.S. use 1 for this code.
INTERNATIONAL-OPERATOR	This one-digit code identifies an operator-assisted international call. This code is 0 for calls originating in the U.S.
LOCAL-AREA-CODE	This three-digit local area code in the form [2-9]XX identifies the local area code for 10-digit local calls.
LOCAL-DIRECT-DIAL	This one-digit code identifies a direct-dialed local call. NANP calls use 1 for this code.
LOCAL-OPERATOR	This one-digit code identifies an operator-assisted local call. NANP calls use 0 for this code.
LONG-DISTANCE-DIRECT-DIAL	This one-digit code identifies a direct-dialed long distance call. NANP calls use 1 for this code.
LONG-DISTANCE-OPERATOR	These one- or two-digit codes identify an operator-assisted, long-distance call within the NANP. Operator-assisted calls use 0 for this code, and operator access uses 00.

Table 14-2 Route Filter Tags (continued)

Tag	Description
NATIONAL-NUMBER	This tag specifies the nation-specific part of the digit string for an international call.
OFFICE-CODE	This tag designates the first three digits of a seven-digit directory number in the form [2-9]XX.
SATELLITE-SERVICE	This one-digit code provides access to satellite connections for international calls.
SERVICE	This three-digit code designates services such as 911 for emergency, 611 for repair, and 411 for information.
SUBSCRIBER	This tag specifies the last four digits of a seven-digit directory number in the form XXXX.
TRANSIT-NETWORK	This four-digit value identifies a long-distance carrier. Do not include the leading 101 carrier access code prefix in the TRANSIT-NETWORK value. Refer to TRANSIT-NETWORK-ESCAPE for more information.
TRANSIT-NETWORK-ESCAPE	This three-digit value precedes the long-distance carrier identifier. The value for this field is 101. Do not include the four-digit carrier identification code in the TRANSIT-NETWORK-ESCAPE value. Refer to TRANSIT-NETWORK for more information.

Route filter tag operators determine whether a call is filtered based on the existence, and sometimes the contents, of the dialed-digit string associated with that tag. The operators EXISTS and DOES-NOT-EXIST simply check for the

existence of that part of the dialed-digit string. The operator == matches the actual dialed digits with the specified value or pattern. [Table 14-3](#) describes the operators that can be used with route filter tags.

Table 14-3 Route Filter Operators

Operator	Description
NOT-SELECTED	<p>Specifies do not filter calls based on the dialed-digit string associated with this tag.</p> <p>Note The presence or absence of the tage with which the operator is associated does not prevent Cisco CallManager from routing the call.</p>
EXISTS	<p>Specifies filter calls when the dialed-digit string associated with this tag is found.</p> <p>Note Cisco CallManager routes the call only if the dialed-digit string contains a sequence of digits associated with the tag.</p>
DOES-NOT-EXIST	<p>Specifies filter calls when the dialed-digit string associated with this tag is not found.</p> <p>Note Cisco CallManager routes the call only if the dialed-digit string does not contain a sequence of digits associated with the tag.</p>
==	<p>Specifies filter calls when the dialed-digit string associated with this tag matches the specified value.</p> <p>Note Cisco CallManager routes the call only if the dialed-digit string contains a sequence of digits associated with the tag and within the numbering range specified in the attached field.</p>



Caution

Do not enter route filter tag values for tags using the operators EXISTS, DOES-NOT-EXIST, or NOT-SELECTED.

Examples

Example 1: A route filter that uses AREA-CODE and the operator DOES-NOT-EXIST selects all dialed-digit strings that do not include an area code.

Example 2: A route filter that uses AREA-CODE, the operator ==, and the entry 515 selects all dialed-digit strings that include the 515 area code.

Example 3: A route filter that uses AREA-CODE, the operator ==, and the entry 5[2-9]X selects all dialed-digit strings that include area codes in the range of 520 through 599.

Example 4: A route filter that uses TRANSIT-NETWORK, the operator ==, and the entry 0288, along with TRANSIT-NETWORK-ESCAPE, the operator ==, and the entry 101, selects all dialed-digit strings with the carrier access code 1010288.



Route Group Configuration

A route group allows you to designate the order in which gateways are selected. It allows you to prioritize a list of gateways and ports for outgoing trunk selection.

For example, if you use two long-distance carriers, you could add a route group so that long-distance calls to the less expensive carrier are given priority. Calls only route to the more expensive carrier if the first trunk is unavailable.

Use the following topics to add or delete a route group or to add devices to or remove devices from a route group:

- [Finding a Route Group, page 15-1](#)
- [Adding a Route Group, page 15-3](#)
- [Adding Devices to a Route Group, page 15-4](#)
- [Removing Devices from a Route Group, page 15-5](#)
- [Updating a Route Group, page 15-6](#)
- [Deleting a Route Group, page 15-7](#)
- [Route Group Configuration Settings, page 15-8](#)

Finding a Route Group

Because you might have several route filters in your network, Cisco CallManager lets you locate specific route filters based on specific criteria. Use the following procedure to locate route filters.

Procedure

Step 1 Choose **Route Plan > Route Group**.

The Find and List Route Groups pane displays.

Step 2 From the drop-down list box, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

Step 3 Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all route groups registered in the database, click **Find** without entering any search text.

A list of discovered route groups displays by:

- Route group name



Note You can delete multiple route groups from the Find and List Route Groups pane by checking the check boxes next to the appropriate route groups and clicking **Delete Selected**. You can delete all of the route groups on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

Step 4 Click the route group from the list of records that matches your search criteria.

The pane displays the route group you choose.

Related Topics

- [Adding a Route Group, page 15-3](#)
- [Adding Devices to a Route Group, page 15-4](#)
- [Removing Devices from a Route Group, page 15-5](#)

- [Updating a Route Group, page 15-6](#)
- [Deleting a Route Group, page 15-7](#)

Adding a Route Group

The following procedure describes how to add a route group.

Procedure

-
- Step 1** Choose **Route Plan > Route Group** in the menu bar.
 - Step 2** Click **Add a New Route Group**.
 - Step 3** Enter a name in the Route Group Name field. The name can contain up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Ensure each route group name is unique to the route plan.



Timesaver

Use concise and descriptive names for your route groups. The CompanynameLocationGroup format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a route group. For example, CiscoDallasAA1 identifies a Cisco Access Analog route group for the Cisco office in Dallas.

- Step 4** Click **Continue**.
 - Step 5** Choose the appropriate settings as described in [Table 15-1](#).
 - Step 6** Click **Insert** to add this route group with one device.
-

Related Topics

- [Finding a Route Group, page 15-1](#)
- [Adding Devices to a Route Group, page 15-4](#)
- [Removing Devices from a Route Group, page 15-5](#)
- [Deleting a Route Group, page 15-7](#)

- [Route Group Configuration Settings](#), page 15-8
- [Adding a Route List](#), page 16-3
- [Adding Route Groups to a Route List](#), page 16-4
- [Understanding Route Plans](#), *Cisco CallManager System Guide*

Adding Devices to a Route Group

You can add devices to a new route group or to an existing route group. The following procedure describes adding a device to an existing route group.

Before You Begin

You must define one or more gateway devices before performing this procedure.

Procedure

- Step 1** Choose **Route Plan > Route Group** in the menu bar.
 - Step 2** Locate the route group to which you want to add a device. See the [“Finding a Route Group”](#) section on page 15-1.
 - Step 3** Click **Add Device**.
 - Step 4** Choose the appropriate settings as described in [Table 15-1](#).
 - Step 5** Click **Insert** to add this gateway and selected ports to the route group.
 - Step 6** In the Order drop-down list box, choose the order in which the new device is to be accessed in this route group.
 - Step 7** Click **Update** to update the device order for this route group.
-

Related Topics

- [Finding a Route Group](#), page 15-1
- [Adding a Route Group](#), page 15-3
- [Removing Devices from a Route Group](#), page 15-5
- [Updating a Route Group](#), page 15-6

- [Deleting a Route Group, page 15-7](#)
- [Route Group Configuration Settings, page 15-8](#)
- [Adding a Route List, page 16-3](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Removing Devices from a Route Group

You can remove devices from a new route group or from an existing route group. The following procedure describes removing a device from an existing route group.

Procedure

- Step 1** Choose **Route Plan > Route Group** in the menu bar.
- Step 2** Locate the route group from which you want to remove a device. See the [“Finding a Route Group” section on page 15-1](#).
- Step 3** Under the Route Group Members subheading, check the check boxes to the left of the devices to be deleted.
- Step 4** Click **Remove Device**.
- A dialog box appears warning you that you cannot undo removing devices from a route group.
- Step 5** Click **OK** to remove the devices or click **Cancel** to cancel the action. If you click **OK**, Cisco CallManager removes the devices from the route group.
-

Related Topics

- [Finding a Route Group, page 15-1](#)
- [Adding a Route Group, page 15-3](#)
- [Adding Devices to a Route Group, page 15-4](#)
- [Updating a Route Group, page 15-6](#)
- [Deleting a Route Group, page 15-7](#)
- [Route Group Configuration Settings, page 15-8](#)

- [Adding a Route List](#), page 16-3
- [Understanding Route Plans](#), *Cisco CallManager System Guide*

Updating a Route Group

The following procedure describes how to update a route group.

Before You Begin

Before performing this procedure, ensure the route group to be updated is already configured.

Procedure

- Step 1** Choose **Route Plan > Route Group** in the menu bar.
 - Step 2** Locate the route group that you want to update. See the [“Finding a Route Group” section on page 15-1](#).
 - Step 3** Update the appropriate fields as described in [Table 15-1](#).
 - Step 4** Click **Update**.
-

Related Topics

- [Finding a Route Group](#), page 15-1
- [Adding a Route Group](#), page 15-3
- [Adding Devices to a Route Group](#), page 15-4
- [Deleting a Route Group](#), page 15-7
- [Route Group Configuration Settings](#), page 15-8
- [Adding a Route List](#), page 16-3
- [Understanding Route Plans](#), *Cisco CallManager System Guide*

Deleting a Route Group

The following procedure describes how to delete a route group.

**Note**

You cannot delete a route group that is referenced by one or more route lists. You must remove the route group from all route lists to which it belongs before deleting the route group.

Procedure

-
- Step 1** Choose **Route Plan > Route Group** in the menu bar.
- Step 2** Locate the route group you want to delete. See the [“Finding a Route Group” section on page 15-1](#).
- Step 3** Check the check box next to the route group you want to delete and click **Delete Selected**.
- A dialog box appears warning you that you cannot undo deleting route groups.
- Step 4** Click **OK** to delete the group or click **Cancel** to cancel the action. If you click **OK**, the Cisco CallManager removes the route group from the route group list. Other route groups or route patterns can now select the gateways that belonged to the deleted route group, provided that all ports were available with the gateways.

**Note**

You can delete multiple route groups from the Find and List Route Groups pane by checking the check boxes next to the appropriate route groups and clicking **Delete Selected**. You can delete all of the route groups on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

Related Topics

- [Finding a Route Group, page 15-1](#)
- [Adding a Route Group, page 15-3](#)
- [Adding Devices to a Route Group, page 15-4](#)

- [Updating a Route Group, page 15-6](#)
- [Adding a Route List, page 16-3](#)
- [Understanding Route Plans, *Cisco CallManager System Guide*](#)

Route Group Configuration Settings

Table 15-1 describes the route group configuration settings.

Table 15-1 Route Group Configuration Settings

Field	Description
Device Name	From the Device Name drop-down list box, choose the device you want to add to the group.
Port	If this device supports individually configurable ports, choose the port . (Cisco Access Analog and Cisco MGCP Analog gateways allow you to choose individual ports.) Otherwise, choose All (default value).
Order	Choose the order in which you want to access this port or device (1 having the highest priority).

Related Topics

- [Finding a Route Group, page 15-1](#)
- [Adding a Route Group, page 15-3](#)
- [Adding Devices to a Route Group, page 15-4](#)
- [Removing Devices from a Route Group, page 15-5](#)
- [Updating a Route Group, page 15-6](#)
- [Deleting a Route Group, page 15-7](#)
- [Understanding Route Plans, *Cisco CallManager Administration Guide*](#)



Route List Configuration

Route groups consisting of a list of resources (gateways) make up route lists. A route list associates a set of route groups with a route pattern and determines the order in which those route groups are accessed. The order controls the progress of the search for available trunk devices for outgoing calls.

A route list comprises a collection of resources (gateways, route groups) that route calls that match the defined route pattern. Once the Cisco CallManager determines a call that is to be routed through a defined route list, the Cisco CallManager finds the first available device based on the order of the route group(s) defined in a route list. Each route list should have at least one route group. Within each route group, at least one device, such as a gateway, is available. Cisco CallManager can select some, or all, ports as resources in each route group based on device type. Some devices, such as digital access, only allow you to select all ports.

Each route list can contain the same route groups that other route lists have already selected.

Use the following topics to add or remove route lists or to add, remove, or change the order of route groups in a route list:

- [Finding Route Lists, page 16-2](#)
- [Adding a Route List, page 16-3](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Deleting a Route List, page 16-8](#)

Finding Route Lists

Because you might have several route filters in your network, Cisco CallManager lets you locate specific route filters based on specific criteria. Use the following procedure to locate route filters.

Procedure

- Step 1** Choose **Route Plan > Route List**.
The Find and List Route Lists pane displays.
- Step 2** From the drop-down list box, choose one of the following criteria:
- begins with
 - contains
 - ends with
 - is exactly
- Step 3** Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all route lists registered in the database, click **Find** without entering any search text.

A list of discovered route lists displays by:

- Route list name
- Description



Note You can delete multiple route lists from the Find and List Route Lists pane by checking the check boxes next to the appropriate route lists and clicking **Delete Selected**. You can delete all of the route lists on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

- Step 4** Click the route list from the list of records that matches your search criteria. The pane displays the route list you choose.
-

Related Topics

- [Adding a Route List, page 16-3](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Deleting a Route List, page 16-8](#)

Adding a Route List

The following procedure describes how to add a route list.

Procedure

- Step 1** Choose **Route Plan > Route List** in the menu bar.
- Step 2** Click **Add a New Route List**.
- Step 3** Enter a name in the Route List Name field. The name can comprise up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Ensure each route list name is unique to the route plan.



Timesaver

Use concise and descriptive names for your route lists. The CompanynameLocationCalltype format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a route list. For example, CiscoDallasMetro identifies a route list for toll-free, inter-local access transport area (LATA) calls from the Cisco office in Dallas.

Cisco CallManager automatically inserts a description in the Description field. You can, however, edit this field.

- Step 4** Click **Insert** to add this route list.
- Step 5** To add a route group to this list, click **Add Route Group** and perform Steps 4 through 8 of the “Adding Route Groups to a Route List” section on page 16-4 .



Note For called party and calling party transformation information, you can click on the **Route Details for Route Groups** link on the left side of the pane. This takes you to the Route Details Configuration pane.

Related Topics

- [Finding Route Lists, page 16-2](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Deleting a Route List, page 16-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Adding Route Groups to a Route List

You can add route groups to a new route list or to an existing route list. The following procedure describes adding a route group to an existing route list.

Before You Begin

You must build one or more route groups and add a route list before performing this procedure.

Procedure

- Step 1** Choose **Route Plan > Route List** in the menu bar.
- Step 2** Locate the route list to which you want to add a route group. See the “[Finding Route Lists](#)” section on page 16-2.
- Step 3** Click **Add Route Group**.

Step 4 From the Select Route Group drop-down list box, choose a route group to add to the list.

Step 5 Click **Add**.

Step 6 If you need to manipulate the calling party number on calls routed through this route group, set up the calling party transformations in the appropriate fields.



Note For more information on calling party transform, see [“Calling Party Transformations Settings” section on page 20-19](#).

Step 7 If you need to manipulate the dialed digits on calls routed through this route group, set up the called party transformations in the appropriate fields.



Note For more information on calling party transform, see [“Called Party Transformations Settings” section on page 20-21](#).

Step 8 Click **Insert** to add the route group.

The route details information appears in the Route Details for Route Groups list on the left side of the pane.

Step 9 To add more route groups to this list, click **Add Route Group to the Current Route List** and repeat Steps 4 through 8.

Related Topics

- [Adding a Route List, page 16-3](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Deleting a Route List, page 16-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Removing Route Groups from a Route List

You can remove route groups from a new route list or from an existing route list. The following procedure describes removing a route group from an existing route list.

Procedure

- Step 1** Choose **Route Plan > Route List** in the menu bar.
- Step 2** Locate the route list from which you want to remove a route group. See the [“Finding Route Lists” section on page 16-2](#).
- Step 3** From the Selected Route Groups list, choose one or more route group names.



Note To select multiple route groups from the list, press the **Shift** key and click on the desired route groups.

- Step 4** Click **Remove Route Groups**.
- A dialog box appears warning you that you cannot undo removing route groups from a route list.
- Step 5** Click **OK** to remove the route group or click **Cancel** to cancel the action. If you click **OK**, when the pane refreshes, the route group no longer appears in the route list, and the message “Status: Update Completed” displays.
-

Related Topics

- [Finding Route Lists, page 16-2](#)
- [Adding a Route List, page 16-3](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Deleting a Route List, page 16-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Changing the Order of Route Groups in a Route List

Cisco CallManager accesses route groups in the order in which they appear in the route list. The following procedure allows you to change the access order of route groups.

Procedure

- Step 1** Choose **Route Plan > Route List** in the menu bar.
- Step 2** Locate the route list in which you want to change the order of a route group. See the [Finding Route Lists, page 16-2](#).
- Step 3** From the Selected Route Groups list, choose a route group name.
- Step 4** Click the up or down arrows on the right side of the list box to move the route group up or down in the list.
- Step 5** Click **Update**.



Note For called party and calling party transformation information, you can click on the **Route Details for ...** link in the Route Details for Route Groups list. This takes you to the Route Details Configuration pane.

Related Topics

- [Finding Route Lists, page 16-2](#)
- [Adding a Route List, page 16-3](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Deleting a Route List, page 16-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Deleting a Route List

Cisco CallManager associates route lists with both route groups and route patterns; however, deletion of route groups and route patterns does not occur when the route list is deleted.

The following procedure describes how to delete a route list.

Procedure

- Step 1** Choose **Route Plan > Route List** in the menu bar.
- Step 2** Locate the route list you want to delete. See the “[Finding Route Lists](#)” section on [page 16-2](#).
- Step 3** Click **Delete**.
- A dialog box appears warning you that you cannot undo removing a route list.
- Step 4** Click **OK** to remove the route list or click **Cancel** to cancel the action.



Caution

A route list cannot be deleted if it is associated with one or more route patterns.

Related Topics

- [Finding Route Lists, page 16-2](#)
- [Adding a Route List, page 16-3](#)
- [Adding Route Groups to a Route List, page 16-4](#)
- [Changing the Order of Route Groups in a Route List, page 16-7](#)
- [Removing Route Groups from a Route List, page 16-6](#)
- [Understanding Route Plans, *Cisco CallManager System Guide*](#)



Route Pattern Configuration

A route pattern comprises a string of digits (an address) and a set of associated digit manipulations that can be assigned to a route list or a gateway. Route patterns provide flexibility in network design. They work in conjunction with route filters and route lists to direct calls to specific devices and to include, exclude, or modify specific digit patterns.

Refer to “[Understanding Route Plans](#)” in *Cisco CallManager System Guide* for more detailed route pattern information.

Use the following topics to add, update, copy, or delete a route pattern:

- [Finding a Route Pattern, page 17-1](#)
- [Adding a Route Pattern, page 17-3](#)
- [Updating a Route Pattern, page 17-5](#)
- [Copying a Route Pattern, page 17-6](#)
- [Deleting a Route Pattern, page 17-7](#)
- [Route Pattern Configuration Settings, page 17-8](#)

Finding a Route Pattern

Because you might have several route patterns in your network, Cisco CallManager lets you locate specific route patterns based on specific criteria. Use the following procedure to locate route patterns.

Procedure

Step 1 Choose **Route Plan > Route Pattern**.

The Find and List Route Patterns pane displays.

Step 2 From the drop-down list box, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

Step 3 Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all route patterns registered in the database, click **Find** without entering any search text.

A list of discovered route patterns displays by:

- Route pattern
- Partition
- Route filter



Note You can delete multiple route patterns from the Find and List Route Patterns pane by checking the check boxes next to the appropriate route patterns and clicking **Delete Selected**. You can delete all of the route patterns on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

Step 4 Click the route pattern from the list of records that matches your search criteria.

The pane displays the route pattern you choose.

Related Topics

- [Adding a Route Pattern, page 17-3](#)
- [Updating a Route Pattern, page 17-5](#)
- [Copying a Route Pattern, page 17-6](#)
- [Deleting a Route Pattern, page 17-7](#)
- [Route Pattern Configuration Settings, page 17-8](#)

Adding a Route Pattern

This section describes how to add a route pattern.

Before You Begin

Ensure that the following items are configured in Cisco CallManager:

- Gateway
- Route list
- Partition
- Route filter

**Timesaver**

Assigning 8XXX to a gateway routes all directory numbers 8000 to 8999 out the gateway. Similarly, 82XX routes directory numbers 8200 to 8299. See the [“Special Characters and Settings” section on page 20-1](#) for more information about wildcards.

Procedure

-
- Step 1** Choose **Route Plan > Route Pattern**.
 - Step 2** Click **Add a New Route Pattern**.
 - Step 3** Enter the appropriate settings as described in [Table 17-1](#).

Step 4 Click **Insert**.



Note

Once you click **Insert** and the pane refreshes, an (**Edit**) link appears on the pane next to the Gateway/Route List field. This link takes you to the Gateway Configuration or Route List Configuration pane for reference; depending on whether the Gateway/Route List field contains a gateway or a route list; so you can see the route group(s) included in that route list, if route group(s) was specified. If not, you see devices.


Related Topics

- [Finding a Route Pattern, page 17-1](#)
- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Adding a Route Filter, page 14-4](#)
- [Updating a Route Pattern, page 17-5](#)
- [Copying a Route Pattern, page 17-6](#)
- [Deleting a Route Pattern, page 17-7](#)
- [Route Pattern Configuration Settings, page 17-8](#)
- [Understanding Route Plans, *Cisco CallManager System Guide*](#)

Updating a Route Pattern

This section describes how to update a route pattern.

Procedure

- Step 1** Choose **Route Plan > Route Pattern**.
- Step 2** Locate the route pattern you want to update. See the [“Finding a Route Pattern” section on page 17-1](#).
-  **Note** If you change the gateway/route list, you must hit **Update** prior to selecting the **Edit** link. Otherwise, you’re linked to the previous gateway/route list.
-
- Step 3** Update the appropriate settings as described in the [“Route Pattern Configuration Settings” section on page 17-8](#).
- Step 4** Click **Update**.
- The updated route pattern displays.
-

Related Topics

- [Finding a Route Pattern, page 17-1](#)
- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Adding a Route Filter, page 14-4](#)
- [Adding a Route Pattern, page 17-3](#)
- [Copying a Route Pattern, page 17-6](#)
- [Deleting a Route Pattern, page 17-7](#)
- [Route Pattern Configuration Settings, page 17-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Copying a Route Pattern

This section describes how to copy a route pattern.

Procedure

- Step 1** Choose **Route Plan > Route Pattern** in the menu bar.
- Step 2** Locate the route pattern you want to copy. See the [“Finding a Route Pattern” section on page 17-1](#).
- Step 3** Check the check box next to the route pattern you want to copy.
- Step 4** Click the **Copy** icon of that route pattern.
The pane displays the copy of the route pattern.
- Step 5** Update the appropriate settings as described in [Table 17-1](#).
- Step 6** Click **Insert** to add the new route pattern.



Note Once you click **Insert** and the pane refreshes, an **(Edit)** link appears on the pane next to the Gateway/Route List field. This link takes you to the Gateway Configuration or Route List Configuration pane for reference; depending on whether the Gateway/Route List field contains a gateway or a route list; so you can see the route group(s) included in that route list, if route group(s) was specified. If not, you see devices.



Tips

You can also copy a route pattern by locating and displaying the route pattern you want to copy and clicking **Copy**. Then, follow the instructions in [Step 5](#) through [Step 6](#).

Related Topics

- [Finding a Route Pattern, page 17-1](#)
- [Route Pattern Wildcards and Special Characters, page 20-1](#)

- [Adding a Route Filter, page 14-4](#)
- [Adding a Route Pattern, page 17-3](#)
- [Updating a Route Pattern, page 17-5](#)
- [Deleting a Route Pattern, page 17-7](#)
- [Route Pattern Configuration Settings, page 17-8](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Deleting a Route Pattern

This section describes how to delete a route pattern.

Procedure

- Step 1** Choose **Route Plan > Route Pattern**.
- Step 2** Locate the route pattern you want to delete. See the [“Finding a Route Pattern” section on page 17-1](#).
- Step 3** Check the check box of the route pattern you want to delete and click **Delete Selected**.

A message displays, stating that you cannot undo this action.

- Step 4** Click **OK** to delete the route pattern or **Cancel** to cancel the deletion.



Tips

You can also delete a route pattern by locating and displaying the route pattern you want to delete and clicking **Delete**.

Related Topics

- [Finding a Route Pattern, page 17-1](#)
- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Adding a Route Filter, page 14-4](#)
- [Adding a Route Pattern, page 17-3](#)

- [Updating a Route Pattern](#), page 17-5
- [Copying a Route Pattern](#), page 17-6
- [Route Pattern Configuration Settings](#), page 17-8
- [Understanding Route Plans](#), *Cisco CallManager System Guide*

Route Pattern Configuration Settings

[Table 17-1](#) describes the available fields on the Route Pattern Configuration pane.

Table 17-1 Route Pattern Configuration Settings

Field	Description
Route Pattern	<p>Enter the route pattern, including numbers and wildcards (do not use spaces); for example, 9.@ for typical local access, or 8XXX for a typical private network numbering plan.</p> <p>Note Ensure the directory route pattern, using the chosen partition, route filter, and numbering plan combination, is unique. Check the route pattern, translation pattern, directory number, call park number, call pickup number, or Meet Me number if you receive an error indicating duplicate entries.</p> <p>See the “Route Pattern Wildcards and Special Characters” section on page 20-1 for more information about wildcards.</p>
Partition	Choose a partition. If you do not want to assign a partition, choose “None.” See the “Partition Configuration” section on page 12-1 for more information on how to use partitions.
Numbering Plan	Choose a numbering plan.
Route Filter	If your route pattern includes the @ wildcard, you may choose a route filter. Choosing a route filter restricts certain number patterns and are optional.

Table 17-1 Route Pattern Configuration Settings (continued)

Field	Description
Gateway/Route List	<p>Choose the gateway or route list for which you are adding a route pattern.</p> <p>Note If at least one part of the defined gateway included in a route group does not exist, or has an assigned DN, this drop-down list box does not include that gateway. When a gateway is chosen in the drop-down list box, all the ports are being used to route/block this route pattern. This is not true for MGCP gateways.</p>
Route Option	The Route Option designation indicates whether you want this route pattern used for routing calls (such as 9.@ or 8[2-9]XX) or for blocking calls. Choose the Route this pattern or Block this pattern radio button.
Provide Outside Dial Tone	Check the check box if appropriate.
Urgent Priority	Check the check box if appropriate.
Use Calling Party's External Phone Number Mask	<p>Check the check box if you want the full, external phone number used for CLID on outgoing calls. You may also configure an External Phone Number Mask on all phone devices.</p> <p>Note The calling party transformation settings assigned to the route groups in a route list override any calling party transformation settings assigned to a route pattern associated with that route list.</p>
Calling Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard character X, and blank. If this field is blank and the preceding field is not checked, no calling party transformation takes place. See the “Calling Party Transformations Settings” section on page 20-19 for more information.

Table 17-1 Route Pattern Configuration Settings (continued)

Field	Description
Discard Digits	Choose the discard digits instructions you want associated with this route pattern from the Discard Digits drop-down list box. See the “Discard Digits Instructions” section on page 20-5 for more information.
Called Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard character X, and blank. If the field is blank, no transformation takes place. Cisco CallManager sends the dialed digits exactly as dialed.
Prefix Digits (Outgoing Calls)	Enter prefix digits in the Prefix Digits (Outgoing Calls) field. Valid entries include the digits 0 through 9, #, *, and blank. Note The appended prefix digit does not affect which directory numbers route to the assigned device.

Related Topics

- [Finding a Route Pattern, page 17-1](#)
- [Adding a Route Pattern, page 17-3](#)
- [Updating a Route Pattern, page 17-5](#)
- [Copying a Route Pattern, page 17-6](#)
- [Deleting a Route Pattern, page 17-7](#)



Translation Pattern Configuration

The Cisco CallManager uses translation patterns to manipulate dialed digits before routing a call. In some cases, the system does not use the dialed number. In other cases, the public switched telephone network (PSTN) does not recognize the dialed number.

Refer to [Understanding Route Plans](#) in the *Cisco CallManager Administration Guide* for more detailed translation pattern information.

Use the following topics to add, update, copy, or delete a translation pattern:

- [Finding a Translation Pattern, page 18-1](#)
- [Adding a Translation Pattern, page 18-3](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Copying a Translation Pattern, page 18-5](#)
- [Deleting a Translation Pattern, page 18-6](#)
- [Translation Pattern Configuration Settings, page 18-7](#)

Finding a Translation Pattern

Because you might have several translation patterns in your network, Cisco CallManager lets you locate specific translation patterns based on specific criteria. Use the following procedure to locate translation patterns.

Procedure

Step 1 Choose **Route Plan > Translation Pattern**.

The Find and List Translation Patterns pane displays.

Step 2 From the drop-down list box, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly

Step 3 Specify the appropriate search text, if applicable and click **Find**. You can also specify how many items per page to display.



Note To find all translation patterns registered in the database, click **Find** without entering any search text.

A list of discovered translation patterns displays by:

- Translation pattern
- Partition
- Route filter



Note You can delete multiple translation patterns from the Find and List Translation Patterns pane by checking the check boxes next to the appropriate translation patterns and clicking **Delete Selected**. You can delete all of the translation patterns on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

Step 4 Click the translation pattern from the list of records that matches your search criteria.

The pane displays the translation pattern you choose.

Related Topics

- [Adding a Translation Pattern, page 18-3](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Copying a Translation Pattern, page 18-5](#)
- [Deleting a Translation Pattern, page 18-6](#)
- [Translation Pattern Configuration Settings, page 18-7](#)

Adding a Translation Pattern

This section describes how to add a translation pattern.

Before You Begin

Configure the following Cisco CallManager items before adding a translation pattern:

- Partition
- Route filter
- Calling search space

Procedure

-
- Step 1** Choose **Route Plan > Translation Pattern**.
- Step 2** Click **Add a New Translation Pattern**.
- Step 3** Enter the appropriate configuration settings as described in [Table 18-1](#).
- Step 4** Click **Insert**.
-

Related Topics

- [Finding a Translation Pattern, page 18-1](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Copying a Translation Pattern, page 18-5](#)

- [Deleting a Translation Pattern](#), page 18-6
- [Translation Pattern Configuration Settings](#), page 18-7

Updating a Translation Pattern

This section describes how to update a translation pattern.

Procedure

-
- Step 1** Choose **Route Plan > Translation Pattern**.
 - Step 2** Locate the translation pattern you want to update. See the [“Finding a Translation Pattern”](#) section on page 18-1.
 - Step 3** Update the appropriate settings as described in the [“Translation Pattern Configuration Settings”](#) section on page 18-7.



Note Ensure the route pattern, using the selected partition, route filter, and numbering plan combination, is unique. Check the route pattern, translation pattern, directory number, call park number, call pickup number, or Meet-Me number configuration panes if you receive an error indicating duplicate entries.

- Step 4** Click **Update**.

The pane displays the updated translation pattern and displays “Status: Update Completed.”

Related Topics

- [Finding a Translation Pattern](#), page 18-1
- [Adding a Translation Pattern](#), page 18-3
- [Copying a Translation Pattern](#), page 18-5
- [Deleting a Translation Pattern](#), page 18-6
- [Translation Pattern Configuration Settings](#), page 18-7

Copying a Translation Pattern

This section describes how to copy a translation pattern.

Procedure

- Step 1** Choose **Route Plan > Translation Pattern**.
- Step 2** Locate the route pattern you want to copy. See the [“Finding a Translation Pattern” section on page 18-1](#).
- Step 3** Check the check box next to the translation pattern you want to copy.
- Step 4** Click the **Copy** icon of that translation pattern.
The pane displays the copy of the translation pattern.
- Step 5** Update the appropriate settings as described in [Table 18-1](#).
- Step 6** Click **Insert** to add the new route pattern.
-

Related Topics

- [Finding a Translation Pattern, page 18-1](#)
- [Adding a Translation Pattern, page 18-3](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Deleting a Translation Pattern, page 18-6](#)
- [Translation Pattern Configuration Settings, page 18-7](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Deleting a Translation Pattern

This section describes how to delete a translation pattern.

Procedure

- Step 1** Choose **Route Plan > Translation Pattern**.
- Step 2** Locate the translation pattern you want to delete. See the [“Finding a Translation Pattern”](#) section on page 18-1.
- Step 3** Check the check box of the translation pattern you want to delete and click **Delete Selected**.

A message displays, stating that you cannot undo this action.

- Step 4** Click **OK** to delete the translation pattern or **Cancel** to cancel the deletion.



Caution

Check carefully to ensure that you are deleting the correct translation pattern before initiating this action. You cannot retrieve deleted translation patterns. If a translation pattern is accidentally deleted, you must rebuild it.



Tips

You can also delete a translation pattern by locating and displaying the translation pattern you want to delete and clicking **Delete**.

Related Topics

- [Finding a Translation Pattern, page 18-1](#)
- [Adding a Translation Pattern, page 18-3](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Copying a Translation Pattern, page 18-5](#)
- [Translation Pattern Configuration Settings, page 18-7](#)

Translation Pattern Configuration Settings

Table 18-1 describes the available fields on the Translation Pattern Configuration pane.

Table 18-1 Translation Pattern Configuration Settings

Field	Description
Translation Pattern	<p>Enter the translation pattern, including numbers and wildcards (do not use spaces) in the Translation Pattern field. For example, enter 9.@ for typical local access or 8XXX for a typical private network numbering plan.</p> <p>Note Ensure the translation pattern, using the chosen partition, route filter, and numbering plan combination, is unique. Check the route pattern, translation pattern, directory number, call park number, call pickup number, or Meet Me number if you receive an error indicating duplicate entries.</p>
Partition	Choose a partition. If you do not want to assign a partition, choose “None.”
Numbering Plan	Choose a numbering plan.
Route Filter	Choosing an optional route filter restricts certain number patterns. Refer to the “Route Pattern Wildcards and Special Characters” section on page 20-1 and the “Route Filter Configuration” section on page 14-1 for more information.
Calling Search Space	Choose the calling search space for which you are adding a translation pattern, if necessary.
Route Option	The Route Option designation indicates whether you want this translation pattern used for routing calls (such as 9.@ or 8[2-9]XX) or for blocking calls. Choose “Route this pattern” or “Block this pattern” radio button.
Provide Outside Dial Tone	Check the check box if appropriate.

Table 18-1 Translation Pattern Configuration Settings (continued)

Field	Description
Urgent Priority	Cisco CallManager sets all translation patterns with urgent priority, and you cannot change the priority of the translation patterns.
Use Calling Party's External Phone Number Mask	Check the check box if you want the full, external phone number used for calling line ID (CLID) on outgoing calls.
Calling Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard character X, and blank. If this field is blank and the preceding field is not checked, no calling party transformation takes place. See the “Adding a Route List” section on page 16-3 for more detailed information.
Discard Digits	Choose the discard digits instructions you want associated with this route pattern. Refer to the “Discard Digits Instructions” section on page 20-5 for more information.
Called Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard character X, and blank. If the field is blank, no transformation takes place. The dialed digits are sent exactly as dialed.
Prefix Digits (Outgoing Calls)	Enter prefix digits . Valid entries include the digits 0 through 9, #, *, and blank. Note The appended prefix digit does not affect which directory numbers route to the assigned device.

Related Topics

- [Finding a Translation Pattern, page 18-1](#)
- [Adding a Translation Pattern, page 18-3](#)
- [Updating a Translation Pattern, page 18-4](#)
- [Copying a Translation Pattern, page 18-5](#)
- [Deleting a Translation Pattern, page 18-6](#)



External Route Plan Wizard

The external route plan wizard allows Cisco CallManager administrators to quickly configure external routing to the public switched telephone network (PSTN), to private branch exchanges (PBXs), or to other Cisco CallManager systems.

Refer to the “[Understanding Route Plans](#)” section in *Cisco CallManager System Guide* for more detailed information about how the wizard generates the external route plan.

Use the following topics to set up a route plan with the external route plan wizard:

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Creating an External Route Plan

The following procedure describes how to begin to create an external route plan.

Before You Begin

Define all gateways before using the external route plan wizard. Choose **Device > Gateway** in the menu bar to set up new gateways.

Procedure

- Step 1** Choose **Route Plan > External Route Plan Wizard** in the menu bar.
- Step 2** Click **Next** on the External Route Plan Wizard introduction pane to create an external route plan.
-

Related Topics

- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Setting the Routing Options

The following procedure describes how to set routing options for the external route plan.

Procedure

- Step 1** Check the check boxes for Local call fallback, toll bypass call fallback, long distance call fallback, International call fallback, and Equal access suppression as appropriate.



Note If you choose local call fallback, toll bypass call fallback, long distance call fallback, or international call fallback, the external route plan wizard includes route groups with remote gateways in the associated route lists.

- Step 2** In the “Access code for toll bypass and fallback calls” field, enter the access code for calls that are routed to remote or local gateways. Use only numeric values. (Many systems use 9 for external calls.)

If the access code is entered for toll bypass and fallback calls, that access code is used in the prefix digits entry for route groups associated with those call types.



Note The access code entered in this field applies to the entire dial plan. Cisco CallManager allows only one access code per dial plan.

- Step 3** In the “Access code for extensions served by a connected PBX” field, enter the access code for calls between the Cisco CallManager and the adjacent PBX. (Many systems use 8 for calls to adjacent PBX systems.)

If the access code is entered for the extensions served by a connected PBX, that access code, followed by a dot (.), is appended to the route patterns associated with these extensions.

- Step 4** Click **Next**.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Providing Tenant Information

The following procedure describes how to add tenant information for the external route plan.

Procedure

-
- Step 1** In the Tenant Name field, enter the tenant name. (Generally use the name of the organization for which the route plan is being built.)



Note Cisco recommends that you use a short tenant name because it is incorporated in the calling search space and partition names.

- Step 2** In the “Number of physical locations in the entire system” field, enter the number of geographical locations associated with the organization. This field should reflect all Cisco CallManagers in the system that use unique area codes. The default number of locations is two.

- Step 3** Click **Next**.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Entering Location Information

The Location Entry pane provides information for the number of locations specified on the Tenant Information pane. The following procedure describes how to add location information for the external route plan.

Procedure

-
- Step 1** In the Location Name field, enter the name of the location if it differs from the one shown. Ensure each location name is unique for the tenant to which it applies.
- Step 2** In the Local Area Code(s) field, enter the local area codes available at this location. (Local area codes comprise all area codes in the calling area. Cisco CallManager does not consider calls within the calling area to be long-distance calls.)

If your area includes more than one local (toll-free) area code, use commas to separate the area codes in the list. Place the primary local area code first, followed by the secondary and tertiary local area codes.



Note The primary local area code sets prefix digits on local route patterns. Not listing the primary area code in the correct order adversely affects route filter generation.

- Step 3** Enter the 7- or 10-digit number that is the main number for the organization at this location.
- Step 4** Specify the number of digits required for local calls at this location.
The route plan wizard uses this information to determine how many route lists to create for this location. If you select 10-digit or 7-digit dialing, the wizard creates one route list for this location. If you select Metro dialing, the wizard creates two route lists for the location.
- Step 5** Repeat Steps 1 through 4 to add location information for other locations.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Selecting Gateways

The following procedure describes how to select gateways for the external route plan.



Caution

Do not select gateways that existing route groups or route patterns use. The wizard uses all ports on the selected gateway. If you select a gateway that existing route groups or route patterns use, the external route plan wizard overwrites the previously configured ports.

Procedure

- Step 1** Check the check boxes for all the gateways associated with this route plan in all locations.
- Step 2** Click **Select All** if you want to include all the gateways defined in the system.
- Step 3** Click **Select None** if you have selected several gateways and want to deselect all of your selections.



Note You must select at least one gateway before continuing with this procedure.

- Step 4** Click **Next**.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Providing Gateway Information

The following procedure describes how to add gateway information for the gateways in the external route plan.

Procedure

- Step 1** In the “Location of the gateway” drop-down list box, choose the gateway location.
- Step 2** In the “Type of carrier to which the gateway is connected” drop-down list box, choose the type of connection for this gateway.
- Step 3** Specify the calling number that will be sent to the adjacent switch when a call is routed through this gateway.
- Step 4** Check the Discard dialed access code... check box if this gateway connects to a PBX that does not require the Cisco CallManager access code.
- Step 5** Enter the range of directory numbers or extension numbers associated with the adjacent PBX. Use commas to separate multiple entries. Use X wildcard characters to specify ranges of digits. For example, if the PBX serves extensions numbered 8000 through 8999 and 9000 through 9999, enter 8XXX,9XXX to create route patterns for the identified directory number ranges.



Note If you provide directory number ranges, the wizard generates one route list for each unique range (route pattern) you enter. If you provide an access code for the directory number ranges and do not check the Discard dialed access code... check box, the wizard generates one route list for each unique range (route pattern) you enter and precedes each route list with the access code and a dot (.).

- Step 6** Click **Next**.
 - Step 7** Repeat Steps 1 through 6 to add gateway information for the additional gateways.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)

- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Generating the External Route Plan

Perform one of the following actions:

- Click **Next** to generate the external route plan.

**Note**

The wizard can take several minutes to generate the external route plan, depending on the complexity of the route plan and the system load. Do not start additional processes that would further load the system during this time.

- Click **Cancel** to prevent the external route plan wizard from generating this route plan.

**Note**

If you click **Cancel**, Cisco CallManager discards all data associated with the current route plan. You cannot undo this action cannot be undone. You must reenter the information.

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)

- [Providing Gateway Information, page 19-8](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Confirming the External Route Plan

The following procedure describes how to confirm an external route plan.

Procedure

- Step 1** Check the external route plan wizard status report to ensure that the route plan contains the proper elements.
- Step 2** Click **Next** to complete the external route plan.



Note Cisco strongly recommends that you print the status report for future reference.

If you determine that the external route plan is incorrect based on the information shown in the status report, proceed to the final pane of the external route plan wizard. The final pane allows you to delete the entire route plan, if needed.

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)

- [Finishing the External Route Plan, page 19-11](#)
- [Deleting an External Route Plan, page 19-12](#)

Finishing the External Route Plan

Perform one of the following actions:

- If the information shown on the external route plan wizard status report is correct, click **Finish** to complete the external route plan.
- If the information shown on the status report is incorrect, click **Delete External Route Plan** to remove all data generated by the external route plan wizard.



Clicking “Delete External Route Plan” deletes all data that the external route plan wizard generated. You cannot undo this action. You must reenter all external route plan information.

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Deleting an External Route Plan, page 19-12](#)

Deleting an External Route Plan

The following procedure describes how to delete an external route plan.

If any element generated by the external route plan wizard is being used in the system (for example, if Cisco IP phones belong to a generated partition), the delete function fails. If generated elements are used, you must move the system components that are using those elements to non-generated elements before using the delete function.



Warning

This procedure deletes all data that the external route plan wizard generated. You cannot undo this action. You must reenter all external route plan information.

Procedure

-
- Step 1** Choose **Route Plan > External Route Plan Wizard** in the menu bar.
- Step 2** To remove all data generated by the external route plan wizard, click **Delete External Route Plan**.
-

Related Topics

- [Creating an External Route Plan, page 19-2](#)
- [Setting the Routing Options, page 19-3](#)
- [Providing Tenant Information, page 19-4](#)
- [Entering Location Information, page 19-5](#)
- [Selecting Gateways, page 19-6](#)
- [Providing Gateway Information, page 19-8](#)
- [Generating the External Route Plan, page 19-9](#)
- [Confirming the External Route Plan, page 19-10](#)
- [Finishing the External Route Plan, page 19-11](#)



Special Characters and Settings

Cisco CallManager Administration allows you to use special characters and settings to perform the following tasks:

- Allowing a single route pattern to match a range of numbers
- Removing a portion of the dialed digit string
- Manipulating the appearance of the calling party number for outgoing calls
- Manipulating the dialed digits, or called party number, for outgoing calls

For more information on how to use special characters and settings, see the following topics:

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Discard Digits Instructions, page 20-5](#)
- [Calling Party Transformations Settings, page 20-19](#)
- [Called Party Transformations Settings, page 20-21](#)

Route Pattern Wildcards and Special Characters

Route pattern wildcards and special characters allow a single route pattern to match a range of numbers (addresses). Use these wildcards and special characters also to build instructions that enable the Cisco CallManager to manipulate a number before sending it to an adjacent system.

[Table 20-1](#) describes the wildcards and special characters supported by Cisco CallManager.

Table 20-1 Wildcards and Special Characters (continued)

Character	Description	Examples
-	The hyphen (-) character, used with the square brackets, denotes a range of values.	The route pattern 813510[0-5] routes or blocks all numbers in the range 8135100 through 8135105.
^	The circumflex (^) character, used with the square brackets, negates a range of values. It must be the first character following the opening bracket (I). Each route pattern can have only one ^ character.	The route pattern 813510[^0-5] routes or blocks all numbers in the range 8135106 through 8135109.
.	The dot (.) character is used as a delimiter to separate the Cisco CallManager access code from the directory number. Use this special character, with the discard digits instructions, to strip off the Cisco CallManager access code before sending the number to an adjacent system. Each route pattern can have only one . character.	The route pattern 9.@ identifies the initial 9 as the Cisco CallManager access code in a NANP call.

Table 20-1 Wildcards and Special Characters (continued)

Character	Description	Examples
*	The asterisk (*) character can provide an extra digit for special dialed numbers.	You can configure the route pattern *411 to provide access to the internal operator for directory assistance.
#	The octothorpe (#) character generally identifies the end of the dialing sequence. The # character must be the last character in the pattern.	The route pattern 901181910555# routes or blocks an international number dialed from within the NANP. The # character after the last 5 identifies this as the last digit in the sequence.

Table 20-2 lists Cisco CallManager Administration fields that require route patterns and shows the valid entries for each field.

Table 20-2 Field Entries

Field	Valid entries
Call Park Number/Range	[^ 0 1 2 3 4 5 6 7 8 9 -] X * #
Calling Party Transform Mask	0 1 2 3 4 5 6 7 8 9 X * #
Called Party Transform Mask	0 1 2 3 4 5 6 7 8 9 X * #
Caller ID DN (Gateways)	0 1 2 3 4 5 6 7 8 9 X * #
Directory Number	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # +
Directory Number (Call Pickup Group)	0 1 2 3 4 5 6 7 8 9
External Phone Number Mask	0 1 2 3 4 5 6 7 8 9 X * #
Forward All	0 1 2 3 4 5 6 7 8 9 * #
Forward Busy	0 1 2 3 4 5 6 7 8 9 * #
Forward No Answer	0 1 2 3 4 5 6 7 8 9 * #
Meet-Me Conference Number	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # +
Prefix Digits	0 1 2 3 4 5 6 7 8 9 * #
Prefix DN (Gateways)	0 1 2 3 4 5 6 7 8 9 * #
Route Filter Tag Values	[^ 0 1 2 3 4 5 6 7 8 9 -] X * #

Table 20-2 Field Entries (continued)

Field	Valid entries
Route Pattern	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # + . @
Translation Pattern	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # + . @

Discard Digits Instructions

A discard digits instruction (DDI) removes a portion of the dialed digit string before passing the number on to the adjacent system. A DDI must remove portions of the digit string, for example, when an external access code is needed to route the call to the PSTN, but the PSTN switch does not expect that access code.

[Table 20-3](#) lists DDIs and describes the effects of applying each DDI to a dialed number.

Table 20-3 Discard Digits Instructions

DDI	Effect	Example
10-10-Dialing	This DDI removes <ul style="list-style-type: none"> IXC access code 	Route pattern: 9.@ Dialed digit string: 910102889728135000 After applying DDI: 99728135000
10-10-Dialing Trailing-#	This DDI removes <ul style="list-style-type: none"> IXC access code End-of-dialing character for international calls 	Route pattern: 9.@ Dialed digit string: 9101028801181910555# After applying DDI: 901181910555

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
11/10D->7D	<p>This DDI removes</p> <ul style="list-style-type: none"> • Long-distance direct-dialing code • Long-distance operator-assisted dialing code • IXC access code • Area code • Local area code <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000 or 99728135000</p> <p>After applying DDI: 98135000</p>
11/10D->7D Trailing-#	<p>This DDI removes</p> <ul style="list-style-type: none"> • Long-distance direct-dialing code • Long-distance operator-assisted dialing code • IXC access code • Area code • Local area code • End-of-dialing character for international calls <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number</p>	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000 or 99728135000</p> <p>After applying DDI: 98135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
11D->10D	This DDI removes <ul style="list-style-type: none"> • Long-distance direct-dialing code • Long-distance operator-assisted dialing code • IXC access code 	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 99728135000
11D->10D Trailing-#	This DDI removes <ul style="list-style-type: none"> • Long-distance direct-dialing code • Long-distance operator-assisted dialing code • End-of-dialing character for international calls • IXC access code 	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 99728135000
Intl TollBypass	This DDI removes <ul style="list-style-type: none"> • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code 	Route pattern: 9.@ Dialed digit string: 901181910555 After applying DDI: 9910555

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
Intl TollBypass Trailing-#	This DDI removes <ul style="list-style-type: none"> • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code • End-of-dialing character 	Route pattern: 9.@ Dialed digit string: 901181910555# After applying DDI: 9910555
NoDigits	This DDI removes no digits.	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 919728135000
Trailing-#	This DDI removes <ul style="list-style-type: none"> • End-of-dialing character for International calls 	Route pattern: 9.@ Dialed digit string: 901181910555# After applying DDI: 901181910555
PreAt	This DDI removes all digits prior to the NANP portion of the route pattern, including <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code 	Route pattern: 8.9@ Dialed digit string: 899728135000 After applying DDI: 9728135000

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt Trailing-#	This DDI removes all digits prior to the NANP portion of the route pattern, including <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • End-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 01181910555
PreAt 10-10-Dialing	This DDI removes all digits prior to the NANP portion of the route pattern, including <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • IXC access code 	Route pattern: 8.9@ Dialed digit string: 8910102889728135000 After applying DDI: 9728135000
PreAt 10-10-Dialing Trailing-#	This DDI removes all digits prior to the NANP portion of the route pattern, including <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • IXC access code • End-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 89101028801181910555# After applying DDI: 01181910555

Table 20-3 *Discard Digits Instructions (continued)*

DDI	Effect	Example
PreAt 11/10D->7D	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code • Area code • Local area code <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 8135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt 11/10D->7D Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code • Area code • Local area code • End-of-dialing character for international calls <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 8135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt 11D->10D	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 9728135000</p>
PreAt 11D->10D Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code • End-of-dialing character for international calls 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 9728135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt Intl TollBypass	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8901181910555</p> <p>After applying DDI: 910555</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt Intl TollBypass Trailing-#	This DDI removes all digits prior to the NANP portion of the route pattern, including <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code • End-of-dialing character 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 910555
PreDot	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code 	Route pattern: 8.9@ Dialed digit string: 899728135000 After applying DDI: 99728135000
PreDot Trailing-#	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • End-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 901181910555

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot 10-10-Dialing	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • IXC access code 	Route pattern: 8.9@ Dialed digit string: 8910102889728135000 After applying DDI: 99728135000
PreDot 10-10-Dialing Trailing-#	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • IXC access code • End-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 89101028801181910555# After applying DDI: 901181910555
PreDot 11/10D->7D	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code • Area code • Local area code This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.	Route pattern: 8.9@ Dialed digit string: 8919728135000 or 899728135000 After applying DDI: 98135000

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot 11/10D->7D Trailing-#	<p>This DDI removes</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code • Area code • Local area code • End-of-dialing character for international calls <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 98135000</p>
PreDot 11D->10D	<p>This DDI removes</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • Long-distance, direct-dialing code • Long-distance, operator-assisted dialing code • IXC access code 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 99728135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot 11D->10D Trailing-#	This DDI removes <ul style="list-style-type: none">• Cisco CallManager external access code• Long-distance, direct-dialing code• Long-distance, operator-assisted dialing code• IXC access code• End-of-dialing character for international calls	Route pattern: 8.9@ Dialed digit string: 8919728135000 After applying DDI: 99728135000

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot Intl TollBypass	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code 	Route pattern: 8.9@ Dialed digit string: 8901181910555 After applying DDI: 9910555
PreDot Intl TollBypass Trailing-#	This DDI removes <ul style="list-style-type: none"> • Cisco CallManager external access code • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code • End-of-dialing character 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 9910555

Calling Party Transformations Settings

Calling party transformations settings allow you to manipulate the appearance of the calling party number for outgoing calls. The Cisco CallManager uses the calling party number for calling line identification (CLID). During an outgoing call, the CLID passes to each private branch exchange (PBX), central office (CO), and interexchange carrier (IXC) as the call progresses. The calling party receives the CLID when the call completes.

The assignment of the calling party transformations settings used in route lists goes to the individual route groups comprising the list, rather than the route list as a whole. The calling party transformations settings assigned to the route groups in a route list override any calling party transformations settings assigned to a route pattern associated with that route list.

[Table 20-4](#) describes the fields, options, and values used to specify calling party transformation for a route group.

Table 20-4 Calling Party Transformations Settings

Field Name	Description
Use Calling Party's External Phone Number Mask	<p>This field determines whether the full, external phone number is used for CLID on outgoing calls. The options for this field include Default, Off, and On:</p> <ul style="list-style-type: none"> • Default: This setting indicates that the route group does not govern the calling party external phone number and calling party transform masks. If a calling party external phone number mask or transform mask is chosen for the route pattern, calls that are routed through this route group use those masks. • Off: This setting indicates that the calling party external phone number is not used for CLID. If no transform mask is entered for this route group, calls that are routed through this group do not get associated with a CLID. • On: This setting indicates that the calling party full, external number is used for CLID.
Calling Party Transform Mask	<p>This field specifies the calling party transform mask for all calls routed through this route group. Valid values for this field range from 0 through 9, and the wildcard character X. You can also leave this field blank. If it is blank and the preceding field is set to Off, this means that no calling party number is available for CLID.</p> <p>The calling party transform mask can contain up to 50 digits.</p>

Related Topics

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Called Party Transformations Settings

Called party transformations settings allow you to manipulate the dialed digits, or called party number, for outgoing calls. Examples of manipulating called numbers include appending or removing prefix digits (outgoing calls), appending area codes to calls dialed as seven-digit numbers, appending area codes and office codes to interoffice calls dialed as four- or five-digit extensions, and suppressing carrier access codes for equal access calls.

The assignment of the called party transformations settings used in route lists goes to the individual route groups comprising the list, rather than the route list as a whole. The called party transformations settings assigned to the route groups in a route list override any called party transformations settings assigned to a route pattern associated with that route list.

[Table 20-5](#) describes the fields, options, and values used to specify called party transformations for a route group.

Table 20-5 *Called Party Transformations Settings*

Field Name	Description
Dial Plan	<p>This field determines which dialing plan is used. If it is not already chosen, change this field to North American Numbering Plan.</p> <p>Note The Dial Plan field only appears when a route group is inserted in a route list. Once the route group is inserted, you cannot modify this field.</p>
Discard Digits	<p>This field contains a list of discard patterns that control the discard digit instructions. For example, in a system where users must dial 9 to make a call to the public switched telephone network (PSTN), the PreDot discard pattern causes the 9 to be stripped from the dialed digit string. See the “Discard Digits Instructions” section on page 20-5 for more information.</p>

Table 20-5 Called Party Transformations Settings (continued)

Field Name	Description
Called Party Transform Mask	<p>This field specifies the called party transform mask for all calls routed through this route group. Valid values for this field range from 0 through 9, and the wildcard character X. You can also leave this field blank. If this field is blank, no transformation takes place; Cisco CallManager sends the dialed digits exactly as dialed.</p> <p>The calling party transform mask can contain up to 50 digits.</p>
Prefix Digits (Outgoing Calls)	<p>This field contains a prefix digit or a set of Prefix Digits (Outgoing Calls) that are appended to the called party number on all calls routed through this route group. Valid values for this field range from 0 through 9 and blank. Prefix Digits (Outgoing Calls) can contain up to 50 digits.</p>

Related Topics

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Discard Digits Instructions, page 20-5](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)



Route Plan Report

The route plan report lists all call park numbers, call pickup numbers, conference numbers, such as Meet-Me numbers, route patterns, and translation patterns in the system. The route plan report allows you to view either a partial or full list, and to go directly to the associated configuration panes, by selecting a route pattern, partition, route group, route list, call park number, call pickup number, conference number, or gateway.

In addition, the route plan report allows you to save report data into a .csv file that you can import into other applications. The .csv file contains more detailed information than the web pages, including directory numbers (DN) for phones, route patterns, and translation patterns.

The Cisco CallManager uses the route plan to route both internal calls and external public switched telephone network (PSTN) calls. For more detailed information on the route plan, refer to the “[Understanding Route Plans](#)” section in *Cisco CallManager System Guide*.

Use the following procedures to view all route plan records:

- [Viewing All Route Plan Records, page 21-2](#)
- [Viewing Route Plan Reports in a File, page 21-3](#)

Viewing All Route Plan Records

This section describes how to view all route plan records.

Procedure

Step 1 Choose **Route Plan > Route Plan Report**.

If more than 50 items exist, the Route Plan Report pane shows the first 50.

Step 2 Click **All** to view the entire report (using this option for viewing can take a long time to load on large systems) or click **Next 50** or **Previous 50** to navigate through the report 50 items at a time.



Note The route plan report shows the Pattern/Directory, the corresponding call type, and partition. The Route Detail column shows a route list (with route group and associated gateway, and ports used information) or gateway information.

Related Topics

- [Route Plan Report, page 21-1](#)
- [Viewing Route Plan Reports in a File, page 21-3](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Viewing Route Plan Reports in a File

This section contains information on how to view route plan reports in a .csv file.

Procedure

Step 1 Choose **Route Plan > Route Plan Report**.

If more than 50 items exist, the Route Plan Report pane shows the first 50.

Step 2 Click **View In File**. A dialog box appears.

From this dialog box, you can either save the file or import it into another application.

Step 3 Click **Save File** in the dialog box.

Another pane appears allowing you to save this file to a location of your choice.



Note You may also save the file as a different file name, but the file name must have a .csv extension.

Step 4 Choose the location in which to save the file and click **Save**. The file should now be saved to the location you designated.

Step 5 Locate the .csv file you just saved and double-click on its icon to view it.

Related Topics

- [Route Plan Report, page 21-1](#)
- [Viewing All Route Plan Records, page 21-2](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)



PART 4

Service Configuration



Cisco Messaging Interface Configuration

The Cisco Messaging Interface (CMI) service allows you to use an external voice-mail system with the Cisco CallManager 3.0 and later. To work with Cisco CallManager, the voice-mail system must meet several requirements, including having a simplified message desk interface (SMDI). For detailed information on integrating a voice-mail system with Cisco CallManager, refer to the [“SMDI Voice Mail Integration”](#) section in the *Cisco CallManager System Guide*.

For information on how to work with the CMI, use the following topics:

- [Adding the Cisco Messaging Interface Service to a Server, page 22-2](#)
- [Deleting the Cisco Messaging Interface Service From a Server, page 22-4](#)
- [Configuring Cisco Messaging Interface Service Parameters, page 22-5](#)
- [Service Parameters Configuration, page 30-1](#)
- [SMDI Voice Mail Integration, *Cisco CallManager System Guide*](#)

Adding the Cisco Messaging Interface Service to a Server

This section describes how to add the Cisco Messaging Interface service to the Cisco CallManager.

Before You Begin

Be sure that the following requirements are met before proceeding with any series of steps. Refer to the [“Server Configuration” section on page 2-1](#) for more information.

- Make sure servers are configured.
- You must have installed the Cisco Messaging Interface service when you installed or upgraded the Cisco CallManager.
- You must know the voice-mail access number and partition as well as the extension and mailbox length on the voice-mail system.

Procedure

-
- Step 1** Choose **Service > Cisco Messaging Interface**.
- Step 2** From the Server drop-down list box, choose the server on which you want to add the Cisco Messaging Interface.



Note The servers listed on the left side of the pane already include the Cisco Messaging Interface service in their configuration.

- Step 3** Click **Insert**.
- The Cisco Messaging Interface Configuration pane displays the parameters configured for this service.
- Step 4** You can modify the service parameters, if necessary. For more information about CMI service parameters, see the [“Updating a Service Parameter” section on page 30-4](#).

**Note**

Cisco Messaging Interface can take up to 5 minutes to detect and load new parameters. If you need an instant update, restart Cisco Messaging Interface service. For information on restarting services, see the [“Starting and Stopping Services”](#) section on page 32-1.

**Note**

CMI remains idle if you do not configure the VoiceMailDN parameter. CMI becomes active within five minutes of your configuring the parameter.

**Caution**

Some changes to service parameters may cause system failure.

Cisco recommends you do not make any changes to service parameters unless you fully understand the feature that you are changing or unless the Cisco Technical Assistance Center (TAC) specifies the changes.

Next Steps

To enable the “messages” button on your Cisco IP phone to access the voice mailbox, configure the VoiceMail service parameter for the Cisco CallManager service to the voice-mail access number. You must set this value for each Cisco CallManager in a cluster. Once you configure the VoiceMail parameter, you must stop and start Cisco CallManager or reset each phone.

For more information on configuring service parameters, see the [“Updating a Service Parameter”](#) section on page 30-4.

**Note**

The Cisco CallManager service parameters MessageWaitingOffDN and MessageWaitingOnDN do *not* apply to configuring Cisco Messaging Interface.

Related Topics

- [Deleting the Cisco Messaging Interface Service From a Server, page 22-4](#)
- [Configuring Cisco Messaging Interface Service Parameters, page 22-5](#)
- [Service Parameters Configuration, page 30-1](#)
- [SMDI Voice Mail Integration, Cisco CallManager System Guide](#)

Deleting the Cisco Messaging Interface Service From a Server

This section describes how to delete Cisco Messaging Interface service from a server.

Procedure

-
- Step 1** Choose **Service > Cisco Messaging Interface**.
- Step 2** From the CMI Servers list, choose the server from which you want to delete the Cisco Messaging Interface service.
- The Cisco Messaging Interface Configuration pane displays the parameters configured for this service.
- Step 3** Click **Delete Service**.
- A message displays stating that you are about to permanently delete service from this server.
- Step 4** Click **OK** to continue or **Cancel** to cancel the deletion.
-

Related Topics

- [Adding the Cisco Messaging Interface Service to a Server, page 22-2](#)
- [Configuring Cisco Messaging Interface Service Parameters, page 22-5](#)
- [Service Parameters Configuration, page 30-1](#)
- [SMDI Voice Mail Integration, Cisco CallManager System Guide](#)

Configuring Cisco Messaging Interface Service Parameters

This section describes how to configure Cisco Messaging Interface service parameters.

**Caution**

Some changes to service parameters may cause system failure.

Cisco recommends you do not make any changes to service parameters unless you fully understand the feature that you are changing or unless the Cisco Technical Assistance Center (TAC) specifies the changes.

Do not add or delete services parameters unless the Cisco TAC directs you to do so.

Procedure

Step 1 Choose **Service > Cisco Messaging Interface**.

Step 2 From the CMI servers list, choose the server on which you want to configure Cisco Messaging Interface service parameters.

The pane refreshes, displaying the server you chose.

Step 3 Make the appropriate changes and click **Update**.

To view a list of parameters and their descriptions, click the “i” button in the upper, right corner of the pane. To view the list with a particular parameter at the top, click that parameter on the Service Parameter Configuration pane.

**Note**

Cisco Messaging Interface can take up to 5 minutes to detect and load new parameters. If you need an instant update, restart Cisco Messaging Interface service. For information on restarting services, see the [“Starting and Stopping Services”](#) section on page 32-1.

Related Topics

- [Adding the Cisco Messaging Interface Service to a Server, page 22-2](#)
- [Deleting the Cisco Messaging Interface Service From a Server, page 22-4](#)
- [Service Parameters Configuration, page 30-1](#)
- [SMDI Voice Mail Integration, *Cisco CallManager System Guide*](#)



Cisco TFTP Configuration

Cisco TFTP, a Windows 2000 service, builds and serves files consistent with the Trivial File Transfer Protocol. TFTP represents a simplified version of the File Transfer Protocol (FTP). Cisco TFTP serves embedded component executable, ringer files, and configuration files.

Use the following topics to insert and delete TFTP service from a server and to configure TFTP parameters.

- [Inserting Cisco TFTP Service on a Server, page 23-2](#)
- [Deleting Cisco TFTP Service From a Server, page 23-3](#)
- [Configuring Cisco TFTP Parameters, page 23-4](#)
- [Cisco TFTP, *Cisco CallManager System Guide*](#)
- [TFTP Configuration Checklist, *Cisco CallManager System Guide*](#)

Inserting Cisco TFTP Service on a Server

This section describes how to insert Cisco TFTP service on a server.



Note You only need to configure Cisco TFTP service on one server in a network, unless you want to share TFTP load.

Before You Begin

You must configure the server before proceeding with the steps. See the [“Server Configuration” section on page 2-1](#).

Procedure

Step 1 Choose **Service > Cisco TFTP**.

Step 2 From the Server drop-down list box, choose a server on which to insert Cisco TFTP service and click **Insert**. (The server list on the left side of the pane designate servers that have already been configured with TFTP service.)

The Cisco TFTP Configuration pane displays the parameters configured for this service.

Step 3 You can modify the service parameters, if necessary.

To view a list of parameters and their descriptions, click the “i” button in the upper, right corner of the pane. To view the list with a particular parameter at the top, click that parameter on the Service Parameter Configuration pane.



Caution

Some changes to service parameters may cause system failure. We recommend you do not make any changes to service parameters unless you fully understand the feature that you are changing, or unless the changes are specified by the Cisco Technical Assistance Center (TAC).



Tips

Click the Select Another Server link if you want to insert Cisco TFTP on another server. This link takes you back to the first Cisco TFTP Configuration pane.

- Step 4** To configure trace settings, click the Trace Configuration link. Cisco CallManager Serviceability Administration displays. For more information on configuring trace, refer to the *Cisco CallManager Serviceability Administration Guide*.
-

Related Topics

- [Cisco TFTP Configuration, page 23-1](#)
- [Deleting Cisco TFTP Service From a Server, page 23-3](#)
- [Configuring Cisco TFTP Parameters, page 23-4](#)
- [Cisco CallManager Group Configuration, page 4-1](#)
- [Adding a Cisco CallManager Group, page 4-2](#)
- [Cisco TFTP, Cisco CallManager System Guide](#)
- [TFTP Configuration Checklist, Cisco CallManager System Guide](#)

Deleting Cisco TFTP Service From a Server

This section describes how to delete Cisco TFTP service from a server.

Procedure

- Step 1** Click **Service > Cisco TFTP**.
- Step 2** From the Cisco TFTP Servers list, choose the server from which you want to delete Cisco TFTP service.
- The pane refreshes to show the information for the server you chose.
- Step 3** Click **Delete Service**.
- A message displays stating that you are about to permanently delete this service, and that the action cannot be undone.
- Step 4** If you want to continue this deletion, click **OK**; otherwise, click **Cancel**.
-

Related Topics

- [Cisco TFTP Configuration, page 23-1](#)
- [Inserting Cisco TFTP Service on a Server, page 23-2](#)
- [Configuring Cisco TFTP Parameters, page 23-4](#)
- [Cisco TFTP, *Cisco CallManager System Guide*](#)
- [TFTP Configuration Checklist, *Cisco CallManager System Guide*](#)

Configuring Cisco TFTP Parameters

This section describes how to configure Cisco TFTP parameters.

Before You Begin

The following prerequisite must be met before proceeding with the steps. See the [“Server Configuration” section on page 2-1](#).

- Make sure servers are configured.
- Make sure Cisco TFTP service is configured.

Procedure

-
- Step 1** Choose **Service > Cisco TFTP**.
- Step 2** From the Cisco TFTP Servers list, choose the server on which you want to configure parameters.



Note The Cisco TFTP Servers list displays servers that are already configured with TFTP service. If you choose a server from the drop-down list box, you must first add Cisco TFTP service to the server before configuring any command line parameters.

The pane refreshes.

Step 3 You can modify the service parameters, if necessary.

To view a list of parameters and their descriptions, click the **i** button in the upper, right corner of the pane. To view the list with a particular parameter at the top, click that parameter on the Service Parameter Configuration pane.

**Caution**

Some changes to service parameters may cause system failure. We recommend you do not make any changes to service parameters unless you fully understand the feature that you are changing, or unless the changes are specified by the Cisco Technical Assistance Center (TAC).

Step 4 Click **Update**.

Step 5 To configure trace settings, click the Trace Configuration link.

Cisco CallManager Serviceability Administration displays. For more information on configuring trace, refer to the *Cisco CallManager Serviceability Administration Guide*.

Related Topics

- [Cisco TFTP Configuration, page 23-1](#)
- [Cisco CallManager Group Configuration, page 4-1](#)
- [Inserting Cisco TFTP Service on a Server, page 23-2](#)
- [Deleting Cisco TFTP Service From a Server, page 23-3](#)
- [Adding a Cisco CallManager Group, page 4-2](#)
- [Cisco TFTP, *Cisco CallManager System Guide*](#)
- [TFTP Configuration Checklist, *Cisco CallManager System Guide*](#)



Cisco WebAttendant Configuration

Cisco WebAttendant, a client-server application, allows you to set up Cisco IP phones as attendant consoles. Employing a graphical user interface, the Cisco WebAttendant client creates an attendant console that uses speed-dial buttons and quick directory access to look up phone numbers, monitor line status, and direct calls. A receptionist or administrative assistant can use the Cisco WebAttendant client to handle calls for a department or company, or another employee can use it to manage his own calls.

Use Cisco CallManager Administration to manage the Cisco Telephony Call Dispatcher, configure pilot points and hunt groups, and add or delete Cisco WebAttendant users.

This section describes the following configuration procedures for Cisco WebAttendants:

- [Configuring Cisco WebAttendant Users, page 24-2](#)
- [Configuring Pilot Points, page 24-4](#)
- [Configuring Hunt Groups, page 24-9](#)
- [Installing the Cisco WebAttendant Client, page 24-16](#)
- [Configuring Cisco WebAttendant Client Settings, page 24-18](#)
- [Cisco WebAttendant Server Configuration, page 24-22](#)
- [Setting Up the wauser Shared Directory for Cisco WebAttendant, page 24-24](#)
- [Starting the Cisco Telephony Call Dispatcher, page 24-26](#)
- [Viewing Cisco WebAttendant Performance Monitors, page 24-27](#)

Configuring Cisco WebAttendant Users

This section covers the following procedures:

- [Adding a Cisco WebAttendant User, page 24-2](#)
- [Viewing, Updating, and Deleting Cisco WebAttendant Users, page 24-3](#)

Adding a Cisco WebAttendant User

This section describes how to add a Cisco WebAttendant user. You must add users through Cisco WebAttendant User Configuration before they can log into a Cisco WebAttendant client.

**Note**

Be aware that Cisco WebAttendant user IDs and passwords are *not* the same as Directory users and passwords entered in the User area of Cisco CallManager.

Procedure

-
- Step 1** Choose **Service > Cisco WebAttendant**.
 - Step 2** In the upper, right corner of the pane, click the Cisco WebAttendant User Configuration link.
 - Step 3** Enter the appropriate configuration settings as described in [Table 24-1](#).
 - Step 4** Click **Insert** to add the new user. The Cisco WebAttendant User Configuration pane refreshes, and the new User ID displays in the list on the left side of the pane.
 - Step 5** To add additional users, repeat Steps 4 and 5.
-

**Note**

When you add new Cisco WebAttendant users or modify the user information or password for an existing user, you must wait approximately 6 minutes for the changes to take effect.

Related Topics

- [Viewing, Updating, and Deleting Cisco WebAttendant Users, page 24-3](#)
- [Cisco WebAttendant User Configuration Settings, page 24-4](#)
- [Understanding Cisco WebAttendant, Cisco CallManager System Guide](#)

Viewing, Updating, and Deleting Cisco WebAttendant Users

This section describes how to view, update, or delete a Cisco WebAttendant user.

Procedure

-
- Step 1** Choose **Service > Cisco WebAttendant**.
- Step 2** In the upper, right corner of the pane, click the Cisco WebAttendant User Configuration link.
- The Cisco WebAttendant User Configuration pane displays with a list of current users on the left side of the pane.
- Step 3** Click the name of the user you want to modify or delete.
- Step 4** Make the desired changes. Refer to [Table 24-1](#) for a description of Cisco WebAttendant user configuration settings.
- Step 5** Click **Update** to save the changes, **Delete** to remove the user, or **Cancel Changes** to exit the pane without making any changes.
-

Related Topics

- [Adding a Cisco WebAttendant User, page 24-2](#)
- [Cisco WebAttendant User Configuration Settings, page 24-4](#)
- [Understanding Cisco WebAttendant Users, Cisco CallManager System Guide](#)
- [Understanding Cisco WebAttendant, Cisco CallManager System Guide](#)

Cisco WebAttendant User Configuration Settings

Use [Table 24-1](#), which describes Cisco WebAttendant user configuration settings, to complete procedures in the “[Adding a Cisco WebAttendant User](#)” and “[Viewing, Updating, and Deleting Cisco WebAttendant Users](#)” sections.

Table 24-1 Cisco WebAttendant User Configuration Settings

Field	Description
User ID	Enter the login name for the new Cisco WebAttendant user. Enter up to 50 alphanumeric characters.
Password	Enter a password of up to 50 alphanumeric characters.
Confirm	Re-enter the same password.
Station Type	Not used. If specified, Cisco WebAttendant ignores this setting.

Related Topics

- [Adding a Cisco WebAttendant User, page 24-2](#)
- [Viewing, Updating, and Deleting Cisco WebAttendant Users, page 24-3](#)

Configuring Pilot Points

You must configure pilot points and hunt groups through Cisco CallManager Administration before the Cisco Telephony Call Dispatcher (TCD) can route calls.

This section contains the following topics:

- [Adding a Pilot Point, page 24-5](#)
- [Viewing, Updating, or Deleting a Pilot Point, page 24-6](#)
- [Pilot Point Configuration Settings, page 24-7](#)

Adding a Pilot Point

This section describes how to add a pilot point.

Procedure

- Step 1** Choose **Service > Cisco WebAttendant**. [Figure 24-1](#) shows an example of the Pilot Point Configuration pane.

Figure 24-1 Pilot Point Configuration Pane

The screenshot shows the Cisco CallManager Administration interface. The top navigation bar includes System, Route Plan, Service, Feature, Device, User, Application, and Help. The main header is "Cisco CallManager Administration For Cisco IP Telephony Solutions" with the Cisco Systems logo. The page title is "Pilot Point Configuration". On the right, there are links for "Hunt Group Configuration", "Cisco WebAttendant User Configuration", and "Cisco WebAttendant Server Configuration".

The "Pilot Points" section on the left contains a table:

Pilot Points	
<Add a New Pilot Point>	
MJRpilot	123456
Sales 01	3000
Test	1234

The "Pilot Point: New" section on the right shows "Pilot Number (DirN): Not Assigned" and "Status: Ready". There are "Insert" and "Cancel Changes" buttons. Below are the following configuration fields:

- Pilot Name* (text input)
- Primary Cisco CallManager* (dropdown menu: — Not Selected —)
- Partition (dropdown menu: < None >)
- Calling Search Space (dropdown menu: < None >)
- Pilot Number (DirN)* (text input)
- Route Calls to (dropdown menu: First Available Hunt Group Member)

- Step 2** Enter the appropriate settings as described in [Table 24-2](#).

Step 3 Click **Insert**.

Now that the pilot point is created, the Pilot Point Configuration pane refreshes to display the name of the new pilot point in the list on the left. The new pilot point and its settings display.

Once the pilot point is created, you must configure a hunt group to specify how the calls that come in to the pilot point are redirected.

Related Topics

- [Viewing, Updating, or Deleting a Pilot Point, page 24-6](#)
- [Pilot Point Configuration Settings, page 24-7](#)
- [Configuring Hunt Groups, page 24-9](#)
- [Understanding Pilot Points and Hunt Groups, Cisco CallManager System Guide](#)

Viewing, Updating, or Deleting a Pilot Point

This section describes how to view, update, or delete a pilot point.

**Note**

You do not have to restart Cisco TCD or Cisco CallManager after deleting a pilot point for the deletion to take effect.

Procedure

Step 1 Choose **Service > Cisco WebAttendant**.

The Pilot Point Configuration pane displays, and the list on the left side of the pane shows all currently configured pilot points.

Step 2 Click the name of the pilot point you want to modify or delete. The pane refreshes to display information for the selected pilot point.**Step 3** Make the desired changes. See [Table 24-2](#) for a description of pilot point configuration settings.

- Step 4** Click **Update** to modify the pilot point or click **Delete** to remove the pilot point. Within approximately 10 minutes after you delete a pilot point, Cisco TCD will stop directing calls to any hunt group members associated with that pilot point.
-

Related Topics

- [Adding a Pilot Point, page 24-5](#)
- [Pilot Point Configuration Settings, page 24-7](#)
- [Configuring Hunt Groups, page 24-9](#)
- [Understanding Pilot Points and Hunt Groups, *Cisco CallManager System Guide*](#)

Pilot Point Configuration Settings

Use [Table 24-2](#), which describes pilot point configuration settings, to complete procedures in the “[Adding a Pilot Point](#)” and “[Viewing, Updating, or Deleting a Pilot Point](#)” sections.

Table 24-2 Pilot Point Configuration Settings

Field	Description
Pilot Name	Enter up to 50 alphanumeric characters, including spaces, to specify a descriptive name for the pilot point.
Primary Cisco CallManager	From the drop-down list box, choose a name or IP address of the Cisco CallManager whose Cisco Telephony Call Dispatcher (TCD) service will service this pilot point. When selecting the primary Cisco CallManager, take call processing and device load balancing into account.
Partition	Choose None from the drop-down list box. Cisco WebAttendant pilot points do not belong to partitions.

Table 24-2 Pilot Point Configuration Settings (continued)

Field	Description
Calling Search Space	To designate which partitions the pilot point searches when attempting to route a call, choose a calling search space from the drop-down list.
Pilot Number (DirN)	Enter a directory number into this field to designate a directory number for this pilot point. Make sure this number is unique throughout the system (that is, it cannot be a shared line appearance).
Route Calls To	From the drop-down list, choose the First Available Hunt Group Member option to route incoming calls to the first available member of a hunt group. From the drop-down list, choose the Longest Idle Hunt Group Member option to order members based on the length of time that each directory number or line remains idle. If the voice-mail number is the longest idle member of the group, Cisco TCD will route the call to voice mail without checking the other members of the group first.

Configuring Hunt Groups

After you configure the pilot point, you must configure the hunt group. A hunt group comprises a list of destinations (either directory numbers or Cisco WebAttendant user /line numbers) that determine the call redirection order.

This section covers the following procedures:

- [Adding Hunt Group Members, page 24-9](#)
- [Configuring Linked Hunt Groups, page 24-12](#)
- [Viewing, Updating, or Deleting Hunt Group Members, page 24-13](#)
- [Hunt Group Configuration Settings, page 24-14](#)

Adding Hunt Group Members

This section describes how to add hunt group members.

Procedure



Note

Cisco TCD handles overflow conditions by routing calls to multiple Cisco WebAttendants or voice-mail numbers. On the Hunt Group Configuration pane, check the Always Route Member check box, so that the voice-mail number receives multiple calls at the same time.

-
- Step 1** Choose **Service > Cisco WebAttendant**. The Pilot Point Configuration pane displays.
- Step 2** Choose the pilot point for which you want to add hunt group members. A list of available pilot points appears on the left side of the Pilot Point Configuration pane.
- Step 3** To add hunt group members to this pilot point, click the link to **Hunt Group Configuration** in the upper, right corner of the Pilot Point Configuration pane. [Figure 24-2](#) shows an example of the Hunt Group Configuration pane.

Figure 24-2 Hunt Group Configuration Pane

Hunt Group Configuration

[Pilot Point Configuration](#)
[Cisco WebAttendant User Configuration](#)
[Cisco WebAttendant Server Configuration](#)

Pilot Points	
MJRpilot	123456
Sales 01	3000
Test	1234

Pilot Point: Select a Pilot Point
Pilot Number (DirN): Not Assigned
Status: Ready

Add Member Update Delete Member Cancel Changes

Hunt Group Members

Device Member Information

Partition: <None >
Directory Number:
Always Route Member:

User Member Information

User Name: <None >
Line Number: <None >

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- Step 4** Click **Add Member**. The Pilot Hunt Group Members list initially displays the text <<Not Configured>>.
- Step 5** Decide whether the hunt group member you want to add will be a directory number (device member) or a user and line number (user member):
- If you specify a directory number, Cisco TCD always attempts to route the call to that number.
 - If you specify a Cisco WebAttendant user and line number, Cisco TCD first checks whether the Cisco WebAttendant user is logged in to a Cisco WebAttendant client and online before attempting to route the call. When you specify a user and line number, the user can log in to and receive calls on any Cisco IP phone in the cluster controlled by Cisco WebAttendant.

- Step 6** Enter the appropriate configuration settings for the new hunt group member as described in [Table 24-3](#):
- If the hunt group member is a directory number, fill in only the Partition and Directory Number fields in the **Device Member Information** section. The optional Always Route Member check box only applies to directory numbers.
 - If the hunt group member is a user and line number, fill in only the Cisco WebAttendant User Name and Line Number fields in the **User Member Information** section.



Note The User Name you specify designates a Cisco WebAttendant User ID. This user name does not duplicate a User ID added through the Cisco CallManager User area of Cisco CallManager Administration.

As you make selections, the Hunt Group Member list box reflects the information you choose. The Hunt Group Member list displays either the device directory number or the Cisco WebAttendant user name and line number; for example:

#1 Call directory number 35201 (directory number example)

#2 Direct Call to Mary Brown, Line 1 (user and line number example)

- Step 7** To add more hunt group members to the pilot point, repeat [Step 5](#) and [Step 6](#).



Note To reorder the hunt group list, choose the member you want to reorder from the list. Then, using the up and down arrows, move that member to a new position in the list.

- Step 8** Click **Update** to save the hunt group member information and complete hunt group configuration.
-

Related Topics

- [Viewing, Updating, or Deleting Hunt Group Members, page 24-13](#)
- [Hunt Group Configuration Settings, page 24-14](#)
- [Understanding Pilot Points and Hunt Groups, Cisco CallManager System Guide](#)

Configuring Linked Hunt Groups

This section describes how to configure linked hunt groups.

Procedure

Step 1 For each hunt group in the chain, use the following information when performing [Step 1](#) through [Step 6](#) from the “[Adding Hunt Group Members](#)” section on [page 24-9](#).

- For all except the last hunt group in the chain, make sure that the final member of the hunt group is the pilot point for the next hunt group.



Caution

Cisco strongly recommends that you do not include any other pilot point numbers (besides the final member) in the hunt group. Including other pilot point numbers in the hunt group may cause a continuous route loop.

- Check the **Always Route Member** check box for only the final member of each hunt group.
- To handle overflow conditions, choose a voice-mail or auto attendant number as the final member of the last linked hunt group in the chain. Check the **Always Route Member** check box to ensure that voice mail can handle multiple, simultaneous calls.

Step 2 After you configure each hunt group, click **Update** to save the information.



Caution

Cisco strongly recommends that you do not link the last hunt group back to the first hunt group.

Step 3 Verify configuration of the linked hunt groups by reviewing the information you entered in the previous steps.

Related Topics

- [Adding Hunt Group Members, page 24-9](#)
- [Viewing, Updating, or Deleting Hunt Group Members, page 24-13](#)
- [Hunt Group Configuration Settings, page 24-14](#)
- [Understanding Pilot Points and Hunt Groups, *Cisco CallManager System Guide*](#)
- [Understanding Linked Hunt Groups, *Cisco CallManager System Guide*](#)

Viewing, Updating, or Deleting Hunt Group Members

This section describes how to view, update, or delete hunt group members.

Procedure

-
- Step 1** Choose **Service > Cisco WebAttendant**.
- The Pilot Point Configuration pane displays.
- Step 2** At the top of the pane, click the Hunt Group Configuration link.
- The Hunt Group Configuration pane displays, and the list on the left side of the pane displays all currently configured pilot points.
- Step 3** Click the name of the pilot point associated with the hunt group for which you want to view, modify, or delete members.
- The Hunt Group Configuration pane displays information for the chosen pilot point.
- Step 4** Make any desired changes. See [Table 24-3](#) for a description of hunt group configuration settings:
- To update settings for a hunt group member, choose that member name in the list; modify the settings as needed; then, click **Update** to save the changes.
 - To change the order of the hunt group members, choose the name of the member you want to move and use the arrow buttons to move it to a new position in the list.

- To delete a hunt group member, highlight that member name in the list and click **Delete Member**.
- You can press **Cancel Changes** at any time to restore any settings you changed before clicking **Update**.

Step 5 Click **Update** to save the changes before leaving the Hunt Group Configuration pane.

Related Topics

- [Adding Hunt Group Members, page 24-9](#)
- [Understanding Pilot Points and Hunt Groups, Cisco CallManager System Guide](#)

Hunt Group Configuration Settings

Use [Table 24-3](#) to complete procedures in the following sections:

- [Adding Hunt Group Members](#)
- [Configuring Linked Hunt Groups](#)
- [Viewing, Updating, or Deleting Hunt Group Members](#)

Table 24-3 Hunt Group Configuration Settings

Field	Description
Partition	<p>If a hunt group member is a directory number, fill in the Partition and Directory Number fields in the Device Member Information section.</p> <p>This field designates the route partition to which the directory number belongs:</p> <ul style="list-style-type: none"> • If the directory number for this hunt group member is in a partition, you must choose a partition from the drop-down list. • If the directory number is not in a partition, choose None. <p>Always Route Member, an optional check box, applies only to directory numbers.</p> <p>If this check box is checked, Cisco Telephony Call Dispatcher (TCD) always routes the call to this hunt group member, whether it is busy or not.</p> <p>If this check box is checked, Cisco TCD does not check whether the line is available before routing the call.</p> <p>To manage overflow conditions, check this check box for voice-mail or auto-attendant numbers that handle multiple, simultaneous calls.</p> <p>For linked hunt groups, only check the Always Route Member check box when you are configuring the final member of each hunt group.</p>
Directory Number	<p>Enter the directory number of the hunt group member device in this field.</p> <p>When the directory number is not in the specified partition, an error dialog box displays.</p>

Table 24-3 Hunt Group Configuration Settings (continued)

Field	Description
User Name	<p>If the hunt group member is a user and line number, fill in only the Cisco WebAttendant User Name and Line Number fields in the User Member Information section.</p> <p>From the drop-down list, choose Cisco WebAttendant users that will serve as hunt group members.</p> <p>Only Cisco WebAttendant user names added using Cisco WebAttendant User Configuration appear in this list.</p>
Line Number	From the drop-down list, choose the appropriate line numbers for the hunt group.

Related Topics

- [Adding Hunt Group Members, page 24-9](#)
- [Viewing, Updating, or Deleting Hunt Group Members, page 24-13](#)
- [Understanding Pilot Points and Hunt Groups, Cisco CallManager System Guide](#)

Installing the Cisco WebAttendant Client

This section describes how to install the Cisco WebAttendant client on a user PC.

Procedure

-
- Step 1** Ensure you have added the Cisco WebAttendant user and the phone you want to associate with Cisco WebAttendant to the Cisco CallManager database.
 - Step 2** Write down the MAC address of the phone that is to be associated with the Cisco WebAttendant client you are installing. The MAC address comprises a 12-character, hexadecimal number located on a label on the underside of the Cisco IP phone.
 - Step 3** Log in to the PC on which you want to install the Cisco WebAttendant client.

- Step 4** Open Internet Explorer (version 4.0 or greater), browse to Cisco CallManager Administration, and log in to Cisco CallManager Administration.
- Step 5** Choose **Application > Install Plugins**.
- Step 6** Click the icon for the Cisco WebAttendant client.
The Cisco WebAttendant installation wizard runs.
- Step 7** Click **Next** at the initial screen; then, click **Yes** to accept the License Agreement.
- Step 8** Click **Next** to install the Cisco WebAttendant client to the default location or use the Browse button to specify a new location and then click **Next**.
- Step 9** Choose a Program Folder and click **Next**.
- Step 10** On the Customer Information screen, enter the following information:
- **Login ID**—Enter the Cisco WebAttendant user ID for the attendant.
 - **Password**—Enter the Cisco WebAttendant password for user ID just specified.
- Step 11** Click **Next**.
- Step 12** Enter the following information:
- **IP Address**—Enter IP address or host name of the primary Cisco CallManager for Cisco TCD (usually the Cisco CallManager with which the Cisco WebAttendant phone is registered).
 - **MAC ID**—Enter MAC address of the Cisco IP phone that will be used with Cisco WebAttendant (see Step 2 for a description of the MAC address). You must use uppercase letters when entering the MAC address.
- Step 13** Click **Next**.
- Step 14** After the installation program finishes installing files, choose whether you want to restart the computer now or later; then, click **Finish**.
- Step 15** Restart the computer.
- Once the application is installed, you can configure or update any client settings that you did not configure during the installation process.
- Refer to the [“Configuring Cisco WebAttendant Client Settings”](#) section on page 24-18 for more information.
-

Related Topics

- [Configuring Cisco WebAttendant Client Settings, page 24-18](#)
- [Cisco WebAttendant Installation and Configuration, *Cisco CallManager System Guide*](#)
- [Understanding Cisco WebAttendant, *Cisco CallManager System Guide*](#)

Configuring Cisco WebAttendant Client Settings

After you install Cisco WebAttendant, you must configure the client before a user can log in to Cisco WebAttendant. Use the procedure in this section to configure settings not specified during installation, to view current settings, or to update the client configuration.

Once configured, the Cisco WebAttendant client operates with the specified settings until the administrator changes them.

Procedure

-
- Step 1** On the PC where the Cisco WebAttendant is installed, choose **Start > Programs > Cisco CallManager > Cisco WebAttendant**; then, click **Yes** to launch Cisco WebAttendant.
- Step 2** Click **Settings**.
- Step 3** Enter the appropriate configuration settings, as described in [Table 24-4](#).
- Step 4** Click **OK**. You have now configured the settings for Cisco WebAttendant client, and the settings can now be used for call-distribution activities.



Note If the Cisco WebAttendant client does not display directory information, check whether the wouser shared directory is configured correctly and whether the Cisco WebAttendant user and client PC have read/write access to the wouser shared directory. See the [“Setting Up the wouser Shared Directory for Cisco WebAttendant”](#) section on [page 24-24](#) for instructions.

Related Topics

- [Installing the Cisco WebAttendant Client, page 24-16](#)
- [Cisco WebAttendant Client Configuration Settings, page 24-20](#)
- [Setting Up the wauser Shared Directory for Cisco WebAttendant, page 24-24](#)
- [Understanding Cisco WebAttendant, *Cisco CallManager System Guide*](#)

Cisco WebAttendant Client Configuration Settings

Use [Table 24-4](#) to complete the procedure in the “[Configuring Cisco WebAttendant Client Settings](#)” section.

Table 24-4 Cisco WebAttendant Client Configuration Settings

Field	Description
MAC Address	<p>Enter SEP plus the media access control (MAC) address, a 12-character number found on the bottom of the Cisco IP phone, for the Cisco IP phone you plan to use with Cisco WebAttendant.</p> <p>You must enter SEP, then the MAC address, eliminating any dashes. You must use uppercase letters; for example, SEP0010EB001234.</p>
Cisco TCD Database Path	<p>Leave this setting blank if you want to use the Cisco TCD default database associated with the Cisco WebAttendant client. Cisco recommends the default setting. To ensure that this setting works correctly, you must perform the required steps in the “Setting Up the wauser Shared Directory for Cisco WebAttendant” section on page 24-24.</p> <p>As an alternative to the default setting, copy the file named C:\Program Files\Cisco\Users\UsersDB1.mdb or C:\Program Files\Cisco\UsersDB2.mdb on the Cisco CallManager server to a different location (such as a file in a different shared directory on the network or a file on the Cisco WebAttendant user PC) and enter the path to the file in this field. For important information on this path, refer to the “Understanding Cisco TCD Database Path Options” section of <i>Cisco CallManager System Guide</i>.</p>

Cisco Telephony Call Dispatcher (TCD) Settings

IP Address or Host Name	Enter the IP address or host name of the Cisco TCD server. This entry designates the Cisco CallManager to which the Cisco IP phone is normally registered.
IP Port	The default value is 4321. Do not modify this value.

Table 24-4 Cisco WebAttendant Client Configuration Settings (continued)

Field	Description
WebAttendant User ID	<p>This field designates the User ID for the Cisco WebAttendant user as specified in the Cisco WebAttendant User Configuration pane from Cisco CallManager Administration. See the “Installing the Cisco WebAttendant Client” section on page 24-16 for more information.</p> <p>Note Be aware that the Cisco WebAttendant User ID is not the same as a Cisco CallManager User ID entered in the User area of Cisco CallManager Administration.</p>
WebAttendant Password	<p>This field designates the password for this Cisco WebAttendant user as specified in the Cisco WebAttendant User Configuration pane in Cisco CallManager Administration. See the “Installing the Cisco WebAttendant Client” section on page 24-16 for more information.</p> <p>Note Be aware that the Cisco WebAttendant password is not the same as a Cisco CallManager password entered in the User area of Cisco CallManager Administration.</p>
Connected To	<p>This view-only field displays the IP address of the Cisco CallManager currently connected to the Cisco WebAttendant.</p>
Line State Server Settings	
IP Address or Host Name	<p>Enter the IP address or host name of the line state server. This entry designates the Cisco CallManager to which the Cisco IP Phone is normally registered.</p>

Table 24-4 Cisco WebAttendant Client Configuration Settings (continued)

Field	Description
IP Port	This field designates the line state server IP port number, which has the default value 3224. Do not change this setting unless advised to do so by the Cisco Technical Assistance Center.
Connected To	This view-only field displays the IP address of the line state server currently connected to the Cisco WebAttendant client.

When you configure your settings in the Settings dialog box, check the **Activate WebAttendant when a call is received** check box to ensure that the Cisco WebAttendant Console automatically displays every time a call comes into the system.

Related Topics

- [Configuring Cisco WebAttendant Client Settings, page 24-18](#)
- [Setting Up the wauser Shared Directory for Cisco WebAttendant, page 24-24](#)
- [Understanding Cisco WebAttendant, Cisco CallManager System Guide](#)

Cisco WebAttendant Server Configuration

The Cisco WebAttendant Server Configuration pane lists service parameters and enables you to configure trace parameters for the Cisco Telephony Call Dispatcher (TCD).



Caution

Do not change any service parameters without permission of a Cisco Technical Assistance Center engineer. Doing so may cause system failure.

Perform the following steps to update Cisco TCD trace parameters.

Procedure

Step 1 Choose **Service > Cisco WebAttendant**.

The Pilot Point Configuration pane displays.

Step 2 Click **Cisco WebAttendant Server Configuration** in the upper, right corner of the pane. Choose a server from the list on the left side of the pane or choose a server from the drop-down box and click **Insert**.

The Cisco WebAttendant Server Configuration pane for the chosen server appears. It displays all configured service parameters for the Cisco TCD.

[Figure 24-3](#) shows an example of the Cisco WebAttendant Server Configuration pane.

Figure 24-3 Cisco WebAttendant Server Configuration Pane

Cisco WebAttendant Server Configuration

[Pilot Point Configuration](#)
[Hunt Group Configuration](#)
[Cisco WebAttendant User Configuration](#)
[Select Another WebAttendant Server](#)
[Trace Configuration](#)

Current Server : test2

Current Service: Cisco Telephony Call Dispatcher

Status: Ready

Parameter Name	Parameter Value	Suggested Value
CCN Line State Port*	<input type="text" value="3223"/>	3223
LSS Access Password*	<input type="text" value="private"/>	private
LSS Listen Port*	<input type="text" value="3224"/>	3224
TcdSrv Listen Port*	<input type="text" value="4321"/>	4321

* indicates required item
 Click here for More Information.

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**Note**

After you insert or choose a server from the Cisco WebAttendant Server Configuration pane, you can click **Trace Configuration** on the Cisco WebAttendant Server Configuration pane and then refer to the *Cisco CallManager Serviceability Administration Guide* to configure trace parameters.

Related Topics

- [Cisco TCD Service and Trace Parameters](#), *Cisco CallManager System Guide*

Setting Up the wouser Shared Directory for Cisco WebAttendant

By default, the client uses cached directory information from the Cisco CallManager Directory user database. The Cisco WebAttendant client displays user and line information in the Directory section of its user interface.

If you choose the default Cisco TCD database setting during Cisco WebAttendant client configuration, you must perform the following procedure to ensure that the Cisco WebAttendant client can display the directory information from the Cisco CallManager directory database.


**Note**

If you are running Cisco CallManager in a cluster environment, perform this procedure on every Cisco CallManager in the cluster.

Perform the following steps to set up the wouser shared directory:

Procedure

-
- Step 1** Log in to the Cisco CallManager server.
 - Step 2** Use Windows Explorer to browse to the following folder:
C:\Program Files\Cisco\Users

- Step 3** Right-click the Users folder and choose **Sharing**.
- Step 4** Click the **Share this Folder** radio button.
- Step 5** Change the default share name from “Users” to “wauusers.” Make sure the share name, which is not case sensitive, is wauusers, so that directory information can display.
- Step 6** Click the **Permissions** button. Click the **Share Permissions** tab if it does not automatically appear.
- Step 7** Choose **Everyone** in the Name pane, if it is not already chosen.
- Step 8** Check the **Full Control**, **Change**, and **Read** check boxes; then, click **OK**.
- Step 9** Click the **Security** tab.
- Step 10** Uncheck the **Allow inheritable permissions from parent to propagate to their object** check box.
- Step 11** A security dialog box appears. Click the **Remove** button in the dialog box.
- Step 12** If the Name pane has any entries in it, choose them one-by-one and click **Remove** after each selection.
- Step 13** Click **Add**.
- Step 14** In the Look In field, choose the name of the machine you are currently using.
- Step 15** Choose **Everyone** in the Name pane; then, click **Add**.
- Step 16** Click **OK**.
- Step 17** The Users Properties Security window appears. Make sure that only **Everyone** appears in the Name pane.
- Step 18** In the Permissions pane, check the **Full Control** check box.
-  **Note** When you check the Full Control check box, you automatically choose all available permission selections.
- Step 19** Click **Apply**.
- Step 20** Click **OK**.
- Step 21** Perform this procedure on every Cisco CallManager in the cluster.

**Note**

To ensure that the changes made to the Shared As properties are visible to Cisco WebAttendant clients, Cisco WebAttendant users should exit the client, log out of Windows, and then log back in to Windows.

Cisco CallManager automatically makes directory database information available to Cisco WebAttendant clients and updates the information every 24 hours with the latest changes.

Related Topics

- [Understanding Cisco TCD Database Path Options](#), *Cisco CallManager System Guide*
- [Understanding Cisco WebAttendant](#), *Cisco CallManager System Guide*

Starting the Cisco Telephony Call Dispatcher

The Cisco Telephony Call Dispatcher (TCD) service starts running automatically when Cisco CallManager is started. The following procedure describes how to verify that the Cisco TCD service is running and how to start Cisco TCD if it is stopped.

**Note**

If you add new Cisco WebAttendant users or modify the user information or password for an existing user, you must wait approximately 6 minutes for the changes to take effect.

Procedure

-
- Step 1** Choose **Application > Cisco CallManager Serviceability**.
 - Step 2** Choose a Cisco CallManager server from the server list on the left side of the pane. The pane refreshes.

The Service Name column lists all services that are configured on this server.

- Step 3** Look at the Service Status column for the Cisco Telephony Call Dispatcher:
- If an arrow icon displays, the Cisco TCD service is running.
 - If a square icon displays, the Cisco TCD service is stopped.
- Step 4** If the Cisco TCD service is not running, click the **Start** button in the Service Control column.
-

Related Topics

- [Understanding Pilot Points and Hunt Groups](#), *Cisco CallManager System Guide*
- [Understanding the Cisco Telephony Call Dispatcher](#), *Cisco CallManager System Guide*

Viewing Cisco WebAttendant Performance Monitors

Perform the following procedures to view CcmLineLinkState and other performance monitoring information for Cisco TCD and Cisco WebAttendant:

Procedure

- Step 1** Log in to the Cisco CallManager server.
- Step 2** Choose **Start > Programs > Administrative Tools > Performance**.
- Step 3** Click the View report data icon.
- Step 4** Click the + (Add counter) icon.
- Step 5** Choose **System Monitor**; enable **All Counters**, and choose **Cisco WebAttendant** from the Object drop-down list box.
- Step 6** Click **Add**.
-

Related Topics

- [Cisco WebAttendant Configuration, page 24-1](#)
- [Understanding Cisco WebAttendant, *Cisco CallManager System Guide*](#)



Conference Bridge Configuration

Conference Bridge for Cisco CallManager is a software and hardware application designed to allow both Ad-Hoc and Meet-Me voice conferencing. Each conference bridge is capable of hosting several simultaneous, multiparty conferences.

Cisco CallManager supports multiple conference devices to distribute the load of mixing audio between the conference devices. A component of Cisco CallManager called Media Resource Manager (MRM) locates and assigns resources throughout a cluster. The MRM resides on every Cisco CallManager and communicates with MRMs on other Cisco CallManagers.

Both hardware and software conference bridges can be active at the same time. Software and hardware conference devices differ in the number of streams and the types of codec they support. For software conference devices, you can adjust the number of streams. Hardware conference devices, however, support a fixed number of streams.



Note

The hardware model type for Conference Bridge contains a specific Media Access Control (MAC) address and device pool information.

Use the following topics to configure conference bridges:

- [Adding a Software Conference Device, page 25-2](#)
- [Software Conference Bridge Configuration Settings, page 25-4](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Hardware Conference Bridge Configuration Settings, page 25-6](#)

- [Updating a Conference Device](#), page 25-7
- [Deleting a Conference Device](#), page 25-8
- [Updating Conference Bridge Parameters](#), page 25-9
- [Adding a Meet-Me Number/Pattern](#), page 25-10
- [Meet-Me Number/Pattern Configuration Settings](#), page 25-14
- [Updating a Meet-Me Number/Pattern](#), page 25-12
- [Deleting a Meet-Me Number/Pattern](#), page 25-13

Adding a Software Conference Device

This section describes how to add a **software** conference device. For Conference Bridge hardware configuration, refer to the [“Adding a Hardware Conference Device”](#) section on page 25-5.

**Note**

Make sure the service is installed in order to perform this procedure.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Make sure servers are configured. Refer to the [“Server Configuration”](#) section on page 2-1.
- Make sure device pools are configured. Refer to the [“Device Pool Configuration”](#) section on page 8-1.
- Make sure the Cisco IP Voice Media Streaming Application service is installed on the server. This optional software service runs on a server and allows software conferencing or software Media Termination Point (MTP).

Procedure

-
- Step 1** Choose **Service > Conference Bridge**.
- Step 2** Enter the appropriate settings as described in [Table 25-1](#).

Step 3 Click **Insert**.

A message displays stating that the Conference Bridge device must be reset for the changes to take effect.

Step 4 Click **OK**.

The pane refreshes, showing the information, including the status, for the device you just added.

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)
- [Meet-Me Number/Pattern Configuration Settings, page 25-14](#)
- [Software Conferences Devices, *Cisco CallManager System Guide*](#)

Software Conference Bridge Configuration Settings

Table 25-1 describes the software conference bridge configuration settings

Table 25-1 Software Conference Bridge Configuration Settings

Field	Description
Conference Bridge Type	Choose Cisco Conference Bridge Software .
Host Server	Use this required field to choose a host server that contains the Cisco IP Voice Media Streaming Application service you wish to use.
Conference Bridge Name	Enter a name in this required field for the conference device, up to 15 alphanumeric characters. Note If the specified device name is longer than 15 characters, the device cannot successfully register with the Cisco CallManager.
Description	Enter a description for the software conference device.
Device Pool	Use this required field to choose a device pool to which you want this conference device assigned. You can choose one of the available device pools, or you can choose the default device pool.
Call Count (Max Streams)	Enter a number in this required field for the maximum number of full-duplex audio streams that this software conference bridge supports. Valid values range from 3 to 128.

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Updating a Conference Device, page 25-7](#)
- [Software Conferences Devices, Cisco CallManager System Guide](#)

Adding a Hardware Conference Device

This section describes how to add a hardware conference device. For Conference Bridge software configuration, see the [“Adding a Software Conference Device” section on page 25-2](#).

**Note**

In order to perform this procedure, make sure the service is installed.

Before You Begin

Configure the Device pools. See the [“Device Pool Configuration” section on page 8-1](#).

Procedure

Step 1 Choose **Service > Conference Bridge**.

Step 2 Enter the appropriate settings as described in [Table 25-2](#).

Step 3 Click **Insert**.

A message displays stating that the Conference Bridge device must be reset in order for the changes to take effect.

Step 4 Click **OK**.

The pane refreshes and displays the conference device you just added. The device should appear in the list on the left side of the pane.

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)

- [Deleting a Meet-Me Number/Pattern, page 25-13](#)
- [Meet-Me Number/Pattern Configuration Settings, page 25-14](#)
- [Hardware Conference Devices, Cisco CallManager System Guide](#)

Hardware Conference Bridge Configuration Settings

Table 25-2 describes the hardware conference bridge configuration settings.

Table 25-2 Hardware Conference Bridge Configuration Settings

Field	Description
Conference Bridge Type	Select Cisco Conference Bridge Hardware .
MAC Address	Enter a unique device MAC address in this required field. MAC addresses comprise 12 hexadecimal digits (0-9, A-F). Example 1231123245AB
Description	This field automatically generates from the MAC address you provide.
Device Pool	Choose a device pool or choose Default .
Call Count (Max Streams)	Enter a number in this required field for the maximum number of full-duplex audio streams that this hardware conference bridge supports. Valid values range from 3 to 128.
Special Load Information	Enter any special load information, or leave blank to use default.

Related Topics

- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)

Updating a Conference Device

This section describes how to update a Conference Device.

**Note**

In order to perform this procedure, make sure the service is installed.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the Servers. See the “[Server Configuration](#)” section on page 2-1.
- Configure the Device pools. See the “[Device Pool Configuration](#)” section on page 8-1.
- Configure the Conference device. See the “[Adding a Software Conference Device](#)” section on page 25-2.

Procedure

Step 1 Click **Service > Conference Bridge**.

Step 2 Choose the conference bridge device you want to update from the Conference Bridges list.

The pane refreshes showing the device you want to update.

Step 3 Update the appropriate settings as described in [Table 25-1](#) or [Table 25-2](#).

Step 4 When you have completed your changes, click **Update**.

A message displays stating that the Conference Bridge device must be reset for the changes to take effect.

Step 5 Click **OK**.

The pane refreshes showing the updated device information.

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)

- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)
- [Software Conference Bridge Configuration Settings, page 25-4](#)
- [Hardware Conference Bridge Configuration Settings, page 25-6](#)

Deleting a Conference Device

This section describes how to delete a Conference Device.



Note

To perform this procedure, make sure the service is installed. You cannot delete devices assigned to the Media Resource Manager (MRM).

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the Servers. See the [“Server Configuration” section on page 2-1](#).
- Configure the Device pools. See the [“Device Pool Configuration” section on page 8-1](#).
- Configure the Conference device. See the [“Conference Bridge Configuration” section on page 25-1](#).

Procedure

- Step 1** Choose **Service > Conference Bridge**.
- Step 2** Choose the device you want to delete from the Conference Bridges list.
The pane refreshes, showing the device you selected.
- Step 3** Click **Delete**.

A message displays stating that you are about to permanently delete the device, and that this action cannot be undone.

- Step 4** If you want to continue with the deletion, click **OK**; otherwise, click **Cancel**.
The pane refreshes again, and the conference device you deleted is removed from the list of devices, and all active calls terminate.
-

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)

Updating Conference Bridge Parameters

This section describes how to update Conference Bridge Parameters.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the Servers. See the “[Server Configuration](#)” section on page 2-1.
- Configure the Device pools. See the “[Device Pool Configuration](#)” section on page 8-1.
- Configure Cisco CallManager. See the “[Cisco CallManager Configuration](#)” section on page 3-1.

Procedure

- Step 1** Choose **Service > Conference Bridge**.
- Step 2** Click **Conference Bridge Parameters** from the top, right corner of the pane.

- Step 3** Choose a device pool from the drop-down list box or choose **Default**.
The Cisco CallManagers in this device pool appear in the box to the left of the pane.
- Step 4** Highlight the Cisco CallManager on which you want to update the conference parameters. The maximum number of users configured for both an Ad-Hoc conference and a Meet-Me conference using Unicast appear in the fields to the right of the pane.
- Step 5** Change the maximum number of users accordingly and click **Update**.
-

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)

Adding a Meet-Me Number/Pattern

This section describes how to add a Meet-Me Number/Pattern.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the Servers. See the “[Server Configuration](#)” section on [page 2-1](#).
- Configure the Device pools. See the “[Device Pool Configuration](#)” section on [page 8-1](#).

Procedure

Step 1 Choose **Service > Conference Bridge**.

Step 2 Click **Meet-Me Number/Pattern Configuration**, from the top, right corner of the pane.

The pane refreshes and the Meet-Me Number/Pattern Configuration pane appears.

Step 3 Enter the appropriate settings as described in [Table 25-3](#).

Step 4 Click **Insert**.

The pane refreshes, and the new Meet-Me Number/Pattern appears in the list on the left side of the pane.

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)
- [Partition Configuration, page 12-1](#)

Updating a Meet-Me Number/Pattern


This section describes how to update a Meet-Me Number/Pattern.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the Servers. See the “[Server Configuration](#)” section on page 2-1.
- Configure the Device pools. See the “[Device Pool Configuration](#)” section on page 8-1.
- Configure the Meet-Me Number/Pattern. See the “[Adding a Meet-Me Number/Pattern](#)” section on page 25-10.

Procedure

- Step 1** Choose **Service > Conference Bridge**.
- Step 2** Click **Meet-Me Number/Pattern Configuration** from the top, right corner of the pane.
- The pane refreshes, and the Meet-Me Number/Pattern Configuration pane appears.
- Step 3** Choose the Meet-Me Number/Pattern you want to update from the Meet-Me Numbers/Patterns list.
- The pane refreshes again, and the pattern you chose appears in the pattern field.
- Step 4** Update the appropriate settings as described in [Table 25-3](#).
-  **Note** You can change the number or pattern as needed (example, changing 5000 to 500X).
- Step 5** Click **Update**.
- The pane refreshes, and the pattern is updated with the new route partition information.
-

Related Topics

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Deleting a Meet-Me Number/Pattern, page 25-13](#)
- [Partition Configuration, page 12-1](#)

Deleting a Meet-Me Number/Pattern

This section describes how to delete a Meet-Me Number/Pattern.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Configure the servers.
- Configure the Device pools.
- Configure the Meet-Me Number/Pattern.

Procedure

-
- Step 1** Choose **Service > Conference Bridge**.
- Step 2** Click **Meet-Me Number/Pattern Configuration** from the top, right corner of the pane.
The pane refreshes and the Meet-Me Number/Pattern Configuration pane appears.
- Step 3** Choose the Meet-Me Number/Pattern you want to delete from the Meet-Me Numbers/Patterns list.
The pane refreshes again.

Step 4 Click **Delete**.

A message displays stating that you are about to permanently delete this pattern and that this action cannot be undone.

Step 5 Click **OK** to continue, or **Cancel** to cancel the deletion.**Related Topics**

- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Software Conference Device, page 25-2](#)
- [Adding a Hardware Conference Device, page 25-5](#)
- [Updating a Conference Device, page 25-7](#)
- [Deleting a Conference Device, page 25-8](#)
- [Updating Conference Bridge Parameters, page 25-9](#)
- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)

Meet-Me Number/Pattern Configuration Settings

[Table 25-3](#) describes the meet-me number/pattern configuration settings.

Table 25-3 Meet-Me Number/Pattern Configuration Settings

Field	Description
Directory Number or Pattern	Enter a Meet-Me Numbers/pattern or a range of numbers (such as 8000 to 8009).
Partition	Select a partition. See the “Partition Configuration” section on page 12-1 for more information.

Related Topics

- [Adding a Meet-Me Number/Pattern, page 25-10](#)
- [Updating a Meet-Me Number/Pattern, page 25-12](#)



Media Termination Point Configuration

A Media Termination Point (MTP) software device allows the Cisco CallManager to extend supplementary services, such as hold and transfer, to calls routed through an H.323 endpoint or an H.323 gateway.

MTP, a Cisco software application, installs on a server during the software installation process. During installation, the component is called the “IpVoiceMediaStreamingApp” and is common to both the MTP, Conference Bridge, and Music on Hold (MOH) applications. Under Windows2000, the application runs as a service and is called “Cisco IP Voice Media Streaming App.”

Each MTP device defined in the database registers with the Media Resource Manager (MRM). The MRM keeps track of the total available MTP devices in the system and which devices have available resources.

During resource reservation, the MRM determines the number of resources, identifies the media type (in this case, the MTP), and the location of the registered MTP device. The MRM updates its share resource table with the registration information and propagates the registered information to the other Cisco CallManagers within the cluster.

Unlike previous Cisco CallManager releases, the MTP and transcoder can register with the same Cisco CallManager. See the [“Transcoder Configuration” section on page 31-1](#) for more information.

Each MTP receives a list of Cisco CallManagers, in priority order, to which it should attempt to register. Each MTP can register with only one Cisco CallManager at a time.

Use the following topics to add, update, and delete MTPs:

- [Transcoder Configuration, page 31-1](#)
- [Adding a Media Termination Point, page 26-2](#)
- [Updating a Media Termination Point, page 26-3](#)
- [Deleting a Media Termination Point, page 26-4](#)
- [Media Termination Point Configuration Settings, page 26-5](#)

Adding a Media Termination Point

This section describes how to add a Media Termination Point (MTP).



Note The service must be installed in order to perform this procedure.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Servers must be configured.
- Device pools must be configured.



Note Add only one Media Termination Point (MTP) device for each MTP application.

Procedure

Step 1 Choose **Service > Media Termination Point**.

Step 2 Enter the appropriate settings as described in [Table 26-1](#).

Step 3 Click **Insert**.

A message displays stating that the MTP device must be reset before the changes take effect.

Step 4 Click **OK**.

Related Topics

- [Media Termination Point Configuration, page 26-1](#)
- [Transcoder Configuration, page 31-1](#)
- [Configuring a Transcoder, page 31-2](#)
- [Updating a Media Termination Point, page 26-3](#)
- [Deleting a Media Termination Point, page 26-4](#)
- [Media Termination Point Configuration Settings, page 26-5](#)

Updating a Media Termination Point

This section describes how to update a Media Termination Point (MTP).



Note The service must be installed in order to perform this procedure.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Servers must be configured
- Device pools must be configured
- Media Termination Points must be configured

Procedure

-
- Step 1** Choose **Service > Media Termination Point**.
- Step 2** Choose the MTP you want to update from the Media Termination Points list. The pane refreshes, showing the device you selected.
- Step 3** Update the appropriate settings as described in [Table 26-1](#).

Step 4 Click **Update**.

A message displays stating that the MTP device must be reset before the changes will take effect.

Step 5 Click **OK**.

Related Topics

- [Media Termination Point Configuration, page 26-1](#)
- [Transcoder Configuration, page 31-1](#)
- [Adding a Media Termination Point, page 26-2](#)
- [Deleting a Media Termination Point, page 26-4](#)
- [Media Termination Point Configuration Settings, page 26-5](#)

Deleting a Media Termination Point

This section describes how to delete a Media Termination Point (MTP).



Note You must install the service to perform this procedure. You cannot delete a device if it is assigned to the Media Resource Manager (MRM).

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Servers must be configured
- Device pools must be configured
- Media Termination Points must be configured

Procedure

-
- Step 1** Choose **Service > Media Termination Point**.
- Step 2** From the Media Termination Points list, choose the MTP you want to delete.
- Step 3** Click **Delete**.
-

Related Topics

- [Media Termination Point Configuration, page 26-1](#)
- [Transcoder Configuration, page 31-1](#)
- [Adding a Media Termination Point, page 26-2](#)
- [Updating a Media Termination Point, page 26-3](#)

Media Termination Point Configuration Settings

Table 26-1 describes the media termination point configuration settings.

Table 26-1 Media Termination Point Configuration Settings

Field	Description
Host Server	Choose the server on which you want MTP to run.
Media Termination Point Name	Enter a name for the MTP, up to 15 alphanumeric characters.
Description	Enter any description for the MTP.
Device Pool	Choose a device pool. The device pool specifies the list of Cisco CallManagers for this MTP.

Related Topics

- [Adding a Media Termination Point, page 26-2](#)
- [Updating a Media Termination Point, page 26-3](#)



Music On Hold Configuration

The integrated Music On Hold feature provides the ability to place on-net and off-net users on hold with music streamed from a streaming source. This feature includes the following actions:

- End user hold
- Network hold, which includes transfer hold, conference hold, and park hold

Music On Hold configuration comprises configuration of Music On Hold audio sources and Music On Hold servers.

Use the following topics to configure Music On Hold:

- [Configuring Music On Hold Audio Sources, page 27-2](#)
- [Configuring Music On Hold Servers, page 27-12](#)

Related Topics

- [Chapter 28, “Media Resource Group Configuration”](#)
- [Chapter 29, “Media Resource Group List Configuration”](#)

Configuring Music On Hold Audio Sources

Use the following topics to configure Music On Hold audio sources:

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Deleting a Music On Hold Audio Source, page 27-6](#)
- [Configuring the Music On Hold Fixed Audio Source, page 27-7](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)

Related Topics

- [Configuring Music On Hold Servers, page 27-12](#)

Adding a Music On Hold Audio Source

Perform the following procedure to add a Music On Hold audio source.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
- The Music On Hold (MOH) Audio Source Configuration window displays. The MOH Audio Source: New (New) title displays with a *Status: Ready* indicator.
- Step 3** Choose <Add new MOH Audio Source> in the MOH Audio Sources list.
- Step 4** Enter the appropriate settings as described in [Table 27-2](#). At any point, click the **Cancel Changes** button to clear all input if necessary.

Step 5 Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The MOH Audio Sources list now includes the new Music On Hold audio source.



Note The MOH Audio Source File Status pane tells you about the MOH audio translation status for the added source.

Related Topics

- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Deleting a Music On Hold Audio Source, page 27-6](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)
- [Audio Sources for Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)

Updating a Music On Hold Audio Source

Perform the following procedure to update an existing Music On Hold audio source.



Note If a new version of an audio source file is available, you must perform this update procedure to use the new version.

Procedure

Step 1 Open Cisco CallManager Administration.

Step 2 Choose **Service > Music On Hold**.

The Music On Hold (MOH) Audio Source Configuration window displays. The MOH Audio Source: New (New) title displays with a *Status: Ready* indicator.

- Step 3** From the MOH Audio Sources list, choose an existing Music On Hold audio source.
- The MOH Audio Source title displays the name of the chosen Music On Hold Audio Source. The fields below the MOH Audio Source title display the previously defined values for this Music On Hold audio source.
- Step 4** Update the desired settings as described in [Table 27-2](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.
- Step 5** Click **Update**.
- The Status changes from *Ready* to *Update completed*. The MOH Audio Sources list shows the updated Music On Hold audio source as highlighted.
-

Related Topics

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Deleting a Music On Hold Audio Source, page 27-6](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)
- [Audio Sources for Music On Hold, *Cisco CallManager System Guide*](#)
- [Music On Hold Configuration Checklist, *Cisco CallManager System Guide*](#)

Copying a Music On Hold Audio Source

Perform the following procedure to copy an existing Music On Hold audio source.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
- The Music On Hold (MOH) Audio Source Configuration window displays. The MOH Audio Source: New (New) title displays with a *Status: Ready* indicator.

- Step 3** From the MOH Audio Sources list, choose an existing Music On Hold audio source.
- The MOH Audio Source title displays the name of the chosen Music On Hold audio source. The fields below the MOH Audio Source title display the previously defined values for this Music On Hold audio source.
- Step 4** Click the **Copy** button.
- The MOH Audio Source title changes to indicate that a new MOH audio source is being added and is a copy of an existing MOH audio source.
- Step 5** Update the desired settings as described in [Table 27-2](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.



Note You must change the MOH Audio Source Name to a unique name and choose a new MOH Audio Stream Number.

- Step 6** Click **Update**.
- The Status changes from *Ready* to *Insert completed*. The MOH Audio Sources list shows the new Music On Hold audio source as highlighted.
-

Related Topics

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Deleting a Music On Hold Audio Source, page 27-6](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)
- [Audio Sources for Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)

Deleting a Music On Hold Audio Source

Perform the following procedure to delete an existing Music On Hold audio source.



Note You cannot delete an audio source that is used by a device pool or by an individual device.

Procedure

Step 1 Open Cisco CallManager Administration.

Step 2 Choose **Service > Music On Hold**.

The Music On Hold (MOH) Audio Source Configuration window displays. The Music On Hold Audio Source: New (New) title displays with a *Status: Ready* indicator.

Step 3 From the MOH Audio Sources list, choose an existing Music On Hold audio source.

The Music On Hold Audio Source title displays the name of the chosen Music On Hold audio source. The fields below the MOH Audio Source title display the previously defined values for this Music On Hold audio source.

Step 4 Click the **Delete** button.

A popup window displays the following warning:

You are about to permanently delete this Music On Hold Audio Source. This action cannot be undone.

Continue?

Step 5 Click **OK**.

The chosen Music On Hold audio source no longer appears on the MOH Audio Sources list. The Status changes from *Ready* to *Delete completed*.

Related Topics

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)
- [Audio Sources for Music On Hold, *Cisco CallManager System Guide*](#)
- [Music On Hold Configuration Checklist, *Cisco CallManager System Guide*](#)

Configuring the Music On Hold Fixed Audio Source

Perform the following procedure to configure the Music On Hold fixed audio source.

Procedure

Step 1 Open Cisco CallManager Administration.

Step 2 Choose **Service > Music On Hold**.

The Music On Hold (MOH) Audio Source Configuration window displays. The MOH Audio Source: New (New) title displays with a *Status: Ready* indicator.

Step 3 From the MOH Audio Sources list, choose the Fixed Audio Source.



Note The list always shows Fixed Audio Source as the last audio source in the list of MOH Audio Sources and always as audio source 51.

The Music On Hold (MOH) Fixed Audio Source Configuration window displays. The MOH Fixed Audio Source title displays with a *Status: Ready* indicator. The MOH Fixed Audio Source title displays the name of the Music On Hold Fixed Audio Source. The fields below the MOH Audio Source title display the previously defined values for the Music On Hold fixed audio source.

Step 4 Update the desired settings as described in [Table 27-1](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.

Table 27-1 Music On Hold Fixed Audio Source Configuration Settings

Field	Description
MOH Fixed Audio Source Information	
MOH Fixed Audio Source Name	Enter a unique name in this required field for the MOH fixed audio source. This name can comprise up to 50 characters. Valid characters include letters, numbers, spaces, dashes, dots (periods), and underscores.
MOH Fixed Audio Source Device	Enter the name for the audio device interface on a PC that is used to play the fixed audio source. Note The name must match exactly the device name of the device that is already installed.
Allow Multicasting	To specify that the MOH fixed audio source allows multicasting, check this check box. Note Changes to the multicast setting take effect immediately if at least one MOH server has already been configured for multicast. Otherwise, changes take effect only after you reset MOH servers by clicking the Reset MOH Servers button. If no MOH servers are configured for multicast, resetting has no effect.
MOH Server Reset Information	To reset all MOH Servers, click the Reset MOH Servers button. Cisco CallManager makes Music On Hold unavailable while the servers reset.

Step 5 Click **Update** to update the Music On Hold fixed audio source or click **Delete** to disable the Music On Hold fixed audio source.

If you clicked **Update**, the Status changes from *Ready* to *Update completed*, and the MOH Audio Sources list shows the updated Music On Hold fixed audio source as highlighted. If you clicked **Delete**, the MOH Audio Sources list shows the MOH fixed audio source labeled as (*Disabled*).

Related Topics

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Deleting a Music On Hold Audio Source, page 27-6](#)
- [Music On Hold Audio Source Configuration Settings, page 27-9](#)
- [Audio Sources for Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)

Music On Hold Audio Source Configuration Settings

[Table 27-2](#) describes the configuration settings used for configuring Music On Hold Audio Sources.

Table 27-2 Music On Hold Audio Source Configuration Settings

Field	Description
MOH Audio Source Information	
MOH Audio Stream Number	Use this required field to choose the stream number for this MOH audio source. To do so, click the drop-down arrow and choose a value from the list displayed. For existing MOH audio sources, this value displays in the MOH Audio Source title.
MOH Audio Source File	Use this required field to choose the file for this MOH audio source. To do so, click the drop-down arrow and choose a value from the list displayed.

Table 27-2 Music On Hold Audio Source Configuration Settings (continued)

Field	Description
MOH Audio Source Name	Enter a unique name in this required field for the MOH audio source. This name can comprise up to 50 characters. Valid characters include letters, numbers, spaces, dashes, dots (periods), and underscores.
Play continuously (repeat)	To specify continuous play of this MOH audio source, check this check box. Note Cisco recommends checking this check box. If continuous play of an audio source is not specified, only the first party placed on hold, not additional parties, will receive the MOH audio source.
Allow Multicasting	To specify that this MOH audio source allows multicasting, check this check box.

Table 27-2 Music On Hold Audio Source Configuration Settings (continued)

Field	Description
MOH Audio Source File Status	<p><i>Display only.</i> This pane displays information about the source file for a chosen MOH audio source. For an MOH audio source, the following attributes display:</p> <ul style="list-style-type: none"> • Input File Name • Error Code • Error Text • Low Date Time • High Date Time • Output File List <ul style="list-style-type: none"> – ULAW wav file name and status – ALAW wav file name and status – G.729 wav file name and status – Wideband wav file name and status • Time MOH Audio Translation completed
MOH Server Reset Information	<p>To reset all MOH servers, click the Reset MOH Servers button.</p> <p>Note Cisco CallManager makes Music On Hold unavailable while the servers reset.</p>

Related Topics

- [Adding a Music On Hold Audio Source, page 27-2](#)
- [Updating a Music On Hold Audio Source, page 27-3](#)
- [Copying a Music On Hold Audio Source, page 27-4](#)
- [Audio Sources for Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)

Configuring Music On Hold Servers

Use the following topics to configure Music On Hold servers:

- [Adding a Music On Hold Server, page 27-12](#)
- [Updating a Music On Hold Server, page 27-13](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Deleting a Music On Hold Server, page 27-16](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)

For any Music On Hold server that you configure, you may trace the configuration of that server. Refer to the *Cisco CallManager Serviceability Administration Guide* for more information.

Related Topics

- [Configuring Music On Hold Audio Sources, page 27-2](#)
- *Cisco CallManager Serviceability Administration Guide*

Adding a Music On Hold Server

Perform the following procedure to add a Music On Hold server.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
The Music On Hold (MOH) Audio Source Configuration window displays.
- Step 3** Click **Configure Music On Hold Servers**.
The Music On Hold (MOH) Server Configuration window displays. The Music On Hold Server: New title displays with a *Status: Ready* indicator.
- Step 4** Choose <Add new Music On Hold Server> in the MOH Servers list.
- Step 5** Enter the appropriate settings as described in [Table 27-3](#). At any point, click the **Cancel Changes** button to clear all input if necessary.

Step 6 Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The MOH Servers list now includes the new Music On Hold server.

Related Topics

- [Updating a Music On Hold Server, page 27-13](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Deleting a Music On Hold Server, page 27-16](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)
- [Understanding Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Server, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco CallManager Serviceability Administration Guide](#)

Updating a Music On Hold Server

Perform the following procedure to update an existing Music On Hold server.

Procedure

Step 1 Open Cisco CallManager Administration.

Step 2 Choose **Service > Music On Hold**.

The Music On Hold (MOH) Audio Source Configuration window displays.

Step 3 Click **Configure Music On Hold Servers**.

The Music On Hold (MOH) Server Configuration window displays. The Music On Hold Server: New title displays with a *Status: Ready* indicator.

- Step 4** Choose an existing Music On Hold server from the MOH Servers list.
- The Music On Hold Server title displays the name of the chosen Music On Hold server. The fields below display the previously defined values for this Music On Hold server.
- Step 5** Update the desired settings as described in [Table 27-3](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.
- Step 6** Click **Update**.
- The Status changes from *Ready* to *Update completed*. The MOH Servers list shows the updated Music On Hold server as highlighted.
-

Related Topics

- [Adding a Music On Hold Server, page 27-12](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Deleting a Music On Hold Server, page 27-16](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)
- [Understanding Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Server, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco CallManager Serviceability Administration Guide](#)

Copying a Music On Hold Server

Perform the following procedure to copy an existing Music On Hold server.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
- The Music On Hold (MOH) Audio Source Configuration window displays.

Step 3 Click **Configure Music On Hold Servers**.

The Music On Hold (MOH) Server Configuration window displays. The Music On Hold Server: New title displays with a *Status: Ready* indicator.

Step 4 Choose an existing Music On Hold server from the MOH Servers list.

The Music On Hold Server title displays the name of the chosen Music On Hold server. The fields below the Music On Hold server title display the previously defined values for this Music On Hold server.

Step 5 Click the **Copy** button.**Step 6** Update the desired settings as described in [Table 27-3](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.

Note You must change at least the Music On Hold Server Name. You must also select a different server (node).

Step 7 Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The MOH Servers list shows the new Music On Hold server as highlighted.

Related Topics

- [Adding a Music On Hold Server, page 27-12](#)
- [Updating a Music On Hold Server, page 27-13](#)
- [Deleting a Music On Hold Server, page 27-16](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)
- [Understanding Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Server, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco CallManager Serviceability Administration Guide](#)

Deleting a Music On Hold Server

Perform the following procedure to delete an existing Music On Hold server.



Note You must remove a Music On Hold server from any media resource groups that include the server before you can delete the Music On Hold server.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
The Music On Hold (MOH) Audio Source Configuration window displays.
- Step 3** Click **Configure Music On Hold Servers**.
The Music On Hold (MOH) Server Configuration window displays. The Music On Hold Server: New title displays with a *Status: Ready* indicator.
- Step 4** Choose an existing Music On Hold server from the MOH Servers list.
The Music On Hold Server title displays the name of the chosen Music On Hold server. The fields below the Music On Hold server title display the previously defined values for this Music On Hold server.
- Step 5** Click the **Delete** button.
A popup window displays the following warning:
You are about to permanently delete this Music On Hold Server. This action cannot be undone.
Continue?
- Step 6** Click **OK**.
The chosen Music On Hold server no longer appears on the MOH Servers list. The Status changes from *Ready* to *Delete completed*.
-

Related Topics

- [Adding a Music On Hold Server, page 27-12](#)
- [Updating a Music On Hold Server, page 27-13](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)
- [Understanding Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Server, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco CallManager Serviceability Administration Guide](#)

Resetting a Music On Hold Server

Perform the following procedure to reset an existing Music On Hold server.

Procedure

-
- Step 1** Open Cisco CallManager Administration.
- Step 2** Choose **Service > Music On Hold**.
- The Music On Hold (MOH) Audio Source Configuration window displays.
- Step 3** Click **Configure Music On Hold Servers**.
- The Music On Hold (MOH) Server Configuration window displays. The Music On Hold Server: New title displays with a *Status: Ready* indicator.
- Step 4** Choose an existing Music On Hold server from the MOH Servers list.
- The Music On Hold Server title displays the name of the chosen Music On Hold server. The fields below the Music On Hold server title display the previously defined values for this Music On Hold server.
- Step 5** Click the **Reset** button.
- A popup window displays the following warning:
- This will reset the MOH Server. Calls currently on Hold using this MOH Server will no longer hear the audio. Continue?

Step 6 Click **OK**.

A popup window displays the following message:
The MOH Server is being reset.

Step 7 Click **OK**.

Cisco CallManager resets the chosen Music On Hold server. The MOH Servers list shows the reset Music On Hold server as highlighted.

Related Topics

- [Adding a Music On Hold Server, page 27-12](#)
- [Updating a Music On Hold Server, page 27-13](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Deleting a Music On Hold Server, page 27-16](#)
- [Music On Hold Server Configuration Settings, page 27-19](#)
- [Understanding Music On Hold, *Cisco CallManager System Guide*](#)
- [Music On Hold Server, *Cisco CallManager System Guide*](#)
- [Music On Hold Configuration Checklist, *Cisco CallManager System Guide*](#)
- [Cisco CallManager Serviceability Administration Guide](#)

Music On Hold Server Configuration Settings

Table 27-3 describes the configuration settings used for configuring Music On Hold servers.

Table 27-3 Music On Hold Server Configuration Settings

Field	Description
Device Information	
Host Server	Use this required field to choose a host server for the Music On Hold server. To do so, click the drop-down arrow and choose a server from the list displayed. For existing Music On Hold servers, this field is display only.
Music On Hold Server Name	Enter a unique name in this required field for the Music On Hold server. This name can comprise up to 15 characters. Valid characters include letters, numbers, spaces, dashes, dots (periods), and underscores.
Description	Enter a description for the Music On Hold server. This description can comprise up to 50 characters. Ensure Description does not contain ampersand (&), double quotes (“”), brackets ([]), less than (<), greater than (>), or the percent sign (%).
Device Pool	Use this required field to choose a device pool for the Music On Hold server. To do so, click the drop-down arrow and choose a device pool from the list displayed.
Maximum Half Duplex Streams	Enter a number in this required field for the maximum number of half-duplex streams that this Music On Hold server supports. Valid values range from 0 to 500.
Maximum Multicast Connections	Enter a number in this required field for the maximum number of multicast connections that this Music On Hold server supports. Valid values range from 0 to 999999.

Table 27-3 Music On Hold Server Configuration Settings (continued)

Field	Description
Fixed Audio Source Device	Enter the device name of the fixed audio source device. This device serves as the per-server override used if the server has a special sound device installed.
Run Flag	Use this required field to choose a run flag for the Music On Hold server. To do so, click the drop-down arrow and choose Yes or No .
Multicast Audio Source Information	
Enable Multicast Audio Sources on this MOH Server	<p>Check or uncheck this check box to enable or disable multicast of audio sources for this Music On Hold server.</p> <p>Note If this MOH server belongs to a multicast media resource group, a message asks you to enable multicast on this MOH server or to update the specified media resource group(s) either by removing this MOH server or by changing the multicast setting of each group listed.</p>

Table 27-3 Music On Hold Server Configuration Settings (continued)

Field	Description
Base Multicast IP Address	<p>If multicast support is needed, enter the base multicast IP address in this field. Valid IP addresses for multicast range from 224.0.1.0 to 239.255.255.255.</p> <p>Note IP addresses between 224.0.1.0 and 238.255.255.255 fall in the reserved range of IP multicast addresses for public multicast applications. Use of such addresses may interfere with existing multicast applications on the Internet. Cisco strongly recommends using IP addresses in the range reserved for administratively controlled applications on private networks (239.0.0.0 - 239.255.255.255).</p> <p>Note Multicast by IP address is preferable in firewall situations.</p>
Base Multicast Port Number	<p>If multicast support is needed, enter the base multicast port number in this field. Valid multicast port numbers include even numbers that range from 16384 to 32767.</p>
Increment Multicast on	<p>Click Port Number to increment multicast on port number.</p> <p>Click IP Address to increment multicast on IP address.</p>
Selected Multicast Audio Sources	
<p>Note Only audio sources for which the Allow Multicasting check box was checked appear in this listing.</p>	
No.	<p><i>Display only.</i> This field designates Music On Hold audio stream number associated with a particular multicast audio source. Only audio sources defined as allowing multicasting display.</p>

Table 27-3 Music On Hold Server Configuration Settings (continued)

Field	Description
Audio Source Name	<i>Display only.</i> This field designates name of audio source defined as allowing multicasting.
Max Hops	For each multicast audio source, enter the maximum number of router hops through which multicast packets should pass. Valid values range from 1 to 15. Note Using high values can lead to network saturation. This field is also known as <i>Time to Live</i> .

Related Topics

- [Adding a Music On Hold Server, page 27-12](#)
- [Updating a Music On Hold Server, page 27-13](#)
- [Copying a Music On Hold Server, page 27-14](#)
- [Resetting a Music On Hold Server, page 27-17](#)
- [Understanding Music On Hold, Cisco CallManager System Guide](#)
- [Music On Hold Server, Cisco CallManager System Guide](#)
- [Music On Hold Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco CallManager Serviceability Administration Guide](#)



Media Resource Group Configuration

Media resource management comprises working with media resource groups and media resource group lists. Media resource management provides a mechanism for managing media resources, so that they can be shared by all Cisco CallManagers within a cluster. Media resources provide conferencing, transcoding, media termination, and music on hold services.

You can associate a Media Resource Group, a logical grouping of media servers, with a geographical location or with a site as desired. You can also form Media Resource Groups to control the usage of servers or the type of service (unicast or multicast) desired.

You can group devices of the following types into a single Media Resource Group:

- Conference Bridge (CFB)
- Media Termination Point (MTP)
- Music On Hold Server (MOH)
- Transcoder (XCODE)

Use the following topics to configure Media Resource Groups:

- [Adding a Media Resource Group, page 28-2](#)
- [Updating a Media Resource Group, page 28-3](#)
- [Copying a Media Resource Group, page 28-4](#)
- [Deleting a Media Resource Group, page 28-6](#)
- [Media Resource Group Configuration Settings, page 28-7](#)

- [Understanding Media Resources](#), *Cisco CallManager System Guide*
- [Media Resource Group and Media Resource Group List Configuration Checklist](#), *Cisco CallManager System Guide*

Related Topics

- [Chapter 29, “Media Resource Group List Configuration”](#)

Adding a Media Resource Group

Perform the following procedure to add a Media Resource Group.

**Note**

You cannot delete a media resource, such as a conference bridge, that is part of a Media Resource Group unless you first remove the resource from the Media Resource Group or you delete the Media Resource Group that contains the media resource.

Procedure

-
- Step 1** Choose **Service > Media Resource Group**.
- The Media Resource Group Configuration window displays. The Media Resource Group: New title displays with a *Status: Ready* indicator.
- Step 2** In the Media Resource Groups list, choose <Add New Media Resource Group>.
- Step 3** Enter the appropriate settings as described in [Table 28-1](#). At any point, click the **Cancel Changes** button to clear all input if necessary.
- Step 4** Click **Insert**.
- The Status changes from *Ready* to *Insert completed*. The Media Resource Groups list now includes the new Media Resource Group.
-

Related Topics

- [Updating a Media Resource Group](#), page 28-3
- [Copying a Media Resource Group](#), page 28-4

- [Deleting a Media Resource Group](#), page 28-6
- [Media Resource Group Configuration Settings](#), page 28-7
- [Understanding Media Resources](#), *Cisco CallManager System Guide*
- [Media Resource Group and Media Resource Group List Configuration Checklist](#), *Cisco CallManager System Guide*

Updating a Media Resource Group

Perform the following procedure to update an existing Media Resource Group.



Note

You cannot delete a media resource, such as a conference bridge, that is part of a Media Resource Group unless you first remove the resource from the Media Resource Group or you delete the Media Resource Group that contains the media resource.

Procedure

Step 1 Choose **Service > Media Resource Group**.

The Media Resource Group Configuration window displays. The Media Resource Group: New title displays with a *Status: Ready* indicator.

Step 2 From the Media Resource Groups list, choose an existing Media Resource Group.

The Media Resource Group title displays the name of the chosen Media Resource Group. The fields below display the previously defined values for this Media Resource Group.

Step 3 Update the desired settings as described in [Table 28-1](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary.



Note

Restarting devices resets all devices associated with this Media Resource Group. Cisco CallManager may drop active calls on affected gateways.

Step 4 Click **Update**.

The Status changes from *Ready* to *Update completed*. The Media Resource Groups list shows the updated Media Resource Group as highlighted.

Step 5 To restart all devices in a Media Resource Group (both available and selected resources), click the **Restart Devices** button.

Related Topics

- [Adding a Media Resource Group, page 28-2](#)
- [Copying a Media Resource Group, page 28-4](#)
- [Deleting a Media Resource Group, page 28-6](#)
- [Media Resource Group Configuration Settings, page 28-7](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Copying a Media Resource Group

Perform the following procedure to copy an existing Media Resource Group.

Procedure

Step 1 Choose **Service > Media Resource Group**.

The Media Resource Group Configuration window displays. The Media Resource Group: New title displays with a *Status: Ready* indicator.

Step 2 From the Media Resource Groups list, choose an existing Media Resource Group.

The Media Resource Group title displays the name of the chosen Media Resource Group. The fields below the Media Resource Group title display the previously defined values for this Media Resource Group.

Step 3 Click the **Copy** button.

- Step 4** Update the desired settings as described in [Table 28-1](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary. To restart all devices in a Media Resource Group (both available and selected resources), click the **Restart Devices** button.



Note You must change at least the Media Resource Group Name.



Note Restarting devices resets all devices associated with this Media Resource Group. Cisco CallManager may drop active calls on affected gateways.

- Step 5** Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The Media Resource Groups list shows the new Media Resource Group as highlighted.

Related Topics

- [Adding a Media Resource Group, page 28-2](#)
- [Updating a Media Resource Group, page 28-3](#)
- [Deleting a Media Resource Group, page 28-6](#)
- [Media Resource Group Configuration Settings, page 28-7](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Deleting a Media Resource Group

Perform the following procedure to delete an existing Media Resource Group.

**Note**

You cannot delete a Media Resource Group that is assigned to a Media Resource Group List unless you first remove the Media Resource Group from the Media Resource Group List(s) to which it is assigned.

Procedure

Step 1 Choose **Service > Media Resource Group**.

The Media Resource Group Configuration window displays. The Media Resource Group: New title displays with a *Status: Ready* indicator.

Step 2 From the Media Resource Groups list, choose an existing Media Resource Group.

The Media Resource Group title displays the name of the chosen Media Resource Group. The fields below the Media Resource Group title display the previously defined values for this Media Resource Group.

Step 3 Click the **Delete** button.

A popup window displays the following warning:

You are about to permanently delete this Media Resource Group. This action cannot be undone.

Continue?

Step 4 Click **OK**.

The chosen Media Resource Group no longer appears on the Media Resource Groups list. The Status changes from *Ready* to *Delete completed*.

Related Topics

- [Adding a Media Resource Group, page 28-2](#)
- [Copying a Media Resource Group, page 28-4](#)
- [Updating a Media Resource Group, page 28-3](#)
- [Media Resource Group Configuration Settings, page 28-7](#)

- [Understanding Media Resources](#), *Cisco CallManager System Guide*
- [Media Resource Group and Media Resource Group List Configuration Checklist](#), *Cisco CallManager System Guide*

Media Resource Group Configuration Settings

[Table 28-1](#) describes the configuration settings used for configuring Media Resource Groups.

Table 28-1 Media Resource Group Configuration Settings

Field	Description
Media Resource Group Name	Enter a unique name in this required field for the Cisco CallManager to identify the Media Resource Group. This name can comprise up to 50 characters. Valid characters include letters, numbers, spaces, dashes, dots (periods), and underscores.
Description	Enter a description for the Media Resource Group. This description can comprise up to 50 characters. Ensure Description does not contain double quotes (“”), less than (<), greater than (>), or the percent sign (%).
Devices for this Group	This area comprises two panes that are used to define the media resources for a Media Resource Group: Available Media Resources and Selected Media Resources.

Table 28-1 Media Resource Group Configuration Settings (continued)

Field	Description
Available Media Resources	<p>This pane lists the media resources that can be chosen for a Media Resource Group. The list includes the following media resource types:</p> <ul style="list-style-type: none"> • Conference Bridges (CFB) • Media Termination Points (MTP) • Music On Hold Servers (MOH) • Transcoders (XCODE) <p>Music On Hold servers configured for multicast are labeled as <i>(MOH)[Multicast]</i>.</p> <p>To add a media resource for this Media Resource Group, choose one from the list and click the down arrow. After a media resource is added, its name moves to the Selected Media Resources pane.</p>
Selected Media Resources	<p>This pane lists the media resources that were chosen for a Media Resource Group. For any Media Resource Group, you must choose at least one media resource.</p> <p>To delete (unselect) a media resource, choose its name in the list and click the up arrow.</p>
Use Multicast for MOH Audio	<p>To use multicast for Music On Hold Audio, check this check box. To do so, make sure at least one of the Selected Media Resources is a multicast MOH server.</p> <p>Note The system administrator is responsible for configuring or creating multicast audio sources.</p>

Related Topics

- [Adding a Media Resource Group, page 28-2](#)
- [Updating a Media Resource Group, page 28-3](#)
- [Copying a Media Resource Group, page 28-4](#)

- [Deleting a Media Resource Group](#), page 28-6
- [Chapter 29, “Media Resource Group List Configuration”](#)
- [Understanding Media Resources](#), *Cisco CallManager System Guide*
- [Media Resource Group and Media Resource Group List Configuration Checklist](#), *Cisco CallManager System Guide*



Media Resource Group List Configuration

Media resource management comprises working with media resource groups and media resource group lists. Media resource management provides a mechanism for managing media resources, so that they can be shared by all Cisco CallManagers within a cluster. Media resources provide conferencing, transcoding, media termination, and music on hold services.

A Media Resource Group List provides a prioritized grouping of Media Resource Groups. An application selects the required media resource, such as a Music On Hold server, from among the available media resources according to the priority order defined in a Media Resource Group List.

Use the following topics to configure Media Resource Group Lists:

- [Adding a Media Resource Group List, page 29-2](#)
- [Updating a Media Resource Group List, page 29-3](#)
- [Copying a Media Resource Group List, page 29-4](#)
- [Deleting a Media Resource Group List, page 29-5](#)
- [Media Resource Group List Configuration Settings, page 29-7](#)

Related Topics

- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, *Cisco CallManager System Guide*](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, *Cisco CallManager System Guide*](#)

Adding a Media Resource Group List

Perform the following procedure to add a Media Resource Group List.

**Note**

You cannot delete a Media Resource Group that is assigned to a Media Resource Group List unless you first remove the Media Resource Group from the Media Resource Group List(s) to which it is assigned or you delete the Media Resource Group List.

Procedure

Step 1 Choose **Service > Media Resource Group List**.

The Media Resource Group List Configuration window displays. The Media Resource Group List: New title displays with a *Status: Ready* indicator.

Step 2 In the Media Resource Group Lists list, choose <Add New Media Resource Group List>.**Step 3** Enter the appropriate settings as described in [Table 29-1](#). At any point, click the **Cancel Changes** button to clear all input if necessary.**Step 4** Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The Media Resource Group Lists list now includes the new Media Resource Group List.

Related Topics

- [Updating a Media Resource Group List, page 29-3](#)
- [Copying a Media Resource Group List, page 29-4](#)
- [Deleting a Media Resource Group List, page 29-5](#)
- [Media Resource Group List Configuration Settings, page 29-7](#)
- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Updating a Media Resource Group List

Perform the following procedure to update an existing Media Resource Group List.

**Note**

You cannot delete a Media Resource Group that is assigned to a Media Resource Group List unless you first remove the Media Resource Group from the Media Resource Group List(s) to which it is assigned or you delete the Media Resource Group List.

Procedure

Step 1 Choose **Service > Media Resource Group List**.

The Media Resource Group List Configuration window displays. The Media Resource Group List: New title displays with a *Status: Ready* indicator.

Step 2 From the Media Resource Group Lists list, choose an existing Media Resource Group List.

The Media Resource Group List title displays the name of the chosen Media Resource Group List. The fields below display the previously defined values for this Media Resource Group List.

Step 3 Update the desired settings as described in [Table 29-1](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary. To restart all devices in a Media Resource Group List (both available and selected Media Resource Groups), click the **Restart Devices** button.**Note**

Restarting devices resets all devices associated with this Media Resource Group List. Cisco CallManager may drop active calls on affected gateways.

Step 4 Click **Update**.

The Status changes from *Ready* to *Update completed*. The Media Resource Group Lists list shows the updated Media Resource Group List as highlighted.

Step 5 To restart all devices in a Media Resource Group List (both available and selected Media Resource Groups), click the **Restart Devices** button.

- [Adding a Media Resource Group List, page 29-2](#)
- [Copying a Media Resource Group List, page 29-4](#)
- [Deleting a Media Resource Group List, page 29-5](#)
- [Media Resource Group List Configuration Settings, page 29-7](#)
- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Copying a Media Resource Group List

Perform the following procedure to copy an existing Media Resource Group List.

Procedure

- Step 1** Choose **Service > Media Resource Group List**.
- The Media Resource Group List Configuration window displays. The Media Resource Group List: New title displays with a *Status: Ready* indicator.
- Step 2** From the Media Resource Group Lists list, choose an existing Media Resource Group List.
- The Media Resource Group List title displays the name of the chosen Media Resource Group List. The fields below the Media Resource Group List title display the previously defined values for this Media Resource Group List.
- Step 3** Click the **Copy** button.
- Step 4** Update the desired settings as described in [Table 29-1](#). At any point, click the **Cancel Changes** button to clear all new input and revert to the previous settings if necessary. To restart all devices in a Media Resource Group List (both available and selected Media Resource Groups), click the **Restart Devices** button.

**Note**

You must change at least the Media Resource Group List Name.

**Note**

Restarting devices resets all devices associated with this Media Resource Group List. Cisco CallManager may drop active calls on affected gateways.

Step 5 Click **Insert**.

The Status changes from *Ready* to *Insert completed*. The Media Resource Group Lists list shows the new Media Resource Group List as highlighted.

- [Adding a Media Resource Group List, page 29-2](#)
- [Updating a Media Resource Group List, page 29-3](#)
- [Deleting a Media Resource Group List, page 29-5](#)
- [Media Resource Group List Configuration Settings, page 29-7](#)
- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Deleting a Media Resource Group List

Perform the following procedure to delete an existing Media Resource Group List.

**Note**

You cannot delete a Media Resource Group List that is assigned to a device pool(s) or to a device(s). You must first modify the device pool(s) or device(s) to which a Media Resource Group List is assigned.

Procedure

Step 1 Choose **Service > Media Resource Group List**.

The Media Resource Group List Configuration window displays. The Media Resource Group List: New title displays with a *Status: Ready* indicator.

Step 2 From the Media Resource Group Lists list, choose an existing Media Resource Group List.

The Media Resource Group List title displays the name of the chosen Media Resource Group List. The fields below the Media Resource Group List title display the previously defined values for this Media Resource Group List.

Step 3 Click the **Delete** button.

A popup window displays the following warning:

You are about to permanently delete this Media Resource Group List. This action cannot be undone.

Continue?

Step 4 Click **OK**.

The chosen Media Resource Group List no longer appears on the Media Resource Group Lists list. The Status changes from *Ready* to *Delete completed*.

- [Adding a Media Resource Group List, page 29-2](#)
- [Copying a Media Resource Group List, page 29-4](#)
- [Updating a Media Resource Group List, page 29-3](#)
- [Media Resource Group List Configuration Settings, page 29-7](#)
- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, Cisco CallManager System Guide](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, Cisco CallManager System Guide](#)

Media Resource Group List Configuration Settings

Table 29-1 describes the configuration settings used for configuring Media Resource Group Lists.

Table 29-1 Media Resource Group List Configuration Settings

Field	Description
Media Resource Group List Name	Enter a unique name in this required field for the Cisco CallManager to identify the Media Resource Group List. This name can comprise up to 50 characters. Valid characters include letters, numbers, spaces, dashes, dots (periods), and underscores.
Available Media Resource Groups	<p>This pane lists the media resource groups that can be chosen for a Media Resource Group List. The list includes only previously defined media resource groups.</p> <p>To add a media resource group for this Media Resource Group List, choose one from the list and click the down arrow located between the two panes.</p> <p>After a media resource group is added, its name moves to the Selected Media Resource Groups pane.</p>
Selected Media Resource Groups	<p>This pane lists the media resource groups that were chosen for a Media Resource Group List. For any Media Resource Group List, you must choose at least one media resource group.</p> <p>To delete (unselect) a media resource group, choose its name in the list and click the up arrow between the two panes.</p> <p>Because media resource groups are listed in order of priority (highest to lowest), you must use the up and down arrows located to the right of this pane to reorder the Media Resource Group priority. To do so, choose a Media Resource Group in the list and use the up or down arrow to change its priority.</p>

Related Topics

- [Adding a Media Resource Group List, page 29-2](#)
- [Updating a Media Resource Group List, page 29-3](#)
- [Copying a Media Resource Group List, page 29-4](#)
- [Deleting a Media Resource Group List, page 29-5](#)
- [Chapter 28, “Media Resource Group Configuration”](#)
- [Understanding Media Resources, *Cisco CallManager System Guide*](#)
- [Media Resource Group and Media Resource Group List Configuration Checklist, *Cisco CallManager System Guide*](#)



Service Parameters Configuration

Service parameters for Cisco CallManager (Release 3.0 and later) allow you to configure different services on selected servers. You can insert and delete services on a selected server, as well as modify the service parameters for those services.



Note

Services must be installed in the database for them to work. For example, if you add a conference bridge to the database, it may not physically exist. It will only be installed if you installed the Media Streaming App service. You can install services from the Cisco CallManager CD or using the Cisco Service Configuration utility. For more information on installing services, refer to the [“Service Installation and Configuration”](#) section in the *Cisco CallManager System Guide*.

**Caution**

Some changes to service parameters may cause system failure. Cisco recommends that you do not make any changes to service parameters unless you fully understand the feature that you are changing or unless the Cisco Technical Assistance Center (TAC) specifies the changes.

For information about working with service parameters, see the following topics:

- [Adding a New Service on a Server, page 30-2](#)
- [Deleting a Service From a Server, page 30-3](#)
- [Updating a Service Parameter, page 30-4](#)
- [Services, Cisco CallManager System Guide](#)

Adding a New Service on a Server

This section describes how to add a new service on a server.

Before You Begin

Ensure the following prerequisite is met before proceeding with the steps:

- Servers are configured.
- Services are installed. For more information on installing services, refer to the “[Service Installation and Configuration](#)” section in the *Cisco CallManager System Guide*.

Procedure

- Step 1** Choose **Service > Service Parameters**.
- Step 2** From the Server drop-down list box, choose a server.
- Step 3** From the Service drop-down list box, choose a service.
- Step 4** Click **Insert**.

The Cisco CallManager adds the service to the server, and the service displays in the Services list.

Related Topics

- [Service Parameters Configuration, page 30-1](#)
- [Deleting a Service From a Server, page 30-3](#)
- [Updating a Service Parameter, page 30-4](#)

Deleting a Service From a Server

You can use the Service Parameter Configuration pane to delete any service (except the Cisco CallManager and the Cisco Database Layer Monitor) from a server. The service continues to run in the background on your system unless you deactivate it with the Cisco Service Configuration utility.

This section describes how to delete services from a server.

**Note**

For information about deleting the Cisco CallManager service from a server, see the [“Deleting a Cisco CallManager” section on page 3-4](#). For information about the Cisco Service Configuration utility, refer to the [“Service Installation and Configuration” section in the *Cisco CallManager System Guide*](#).

Before You Begin

Ensure the following prerequisites are met before proceeding with the steps. See the [“Server Configuration” section on page 2-1](#).

- Make sure servers are configured.
- Make sure the service is present.

Procedure

Step 1 Choose **Service > Service Parameters**.

Step 2 From the Server drop-down list box, choose a service.

Step 3 From the Services list, choose the service you want to delete.

Step 4 Click **Delete Service**.

A message displays stating that you are about to permanently delete this service and that you cannot undo the action.

Step 5 Click **OK** to continue or **Cancel** to cancel the deletion.

Related Topics

- [Adding a New Service on a Server, page 30-2](#)
- [Updating a Service Parameter, page 30-4](#)

Updating a Service Parameter

This section describes how to update a service parameter.

**Note**

If you set a service parameter value to the suggested value displayed on the Service Parameters Configuration pane and the suggested value changes in a subsequent Cisco CallManager release, the system automatically changes the parameter value to match the updated suggested value when you upgrade to that release. If you set a service parameter to a value other than the suggested value, the system does not change the parameter value when you upgrade.

Before You Begin

Ensure the following prerequisites are met before proceeding with the steps. See the [“Server Configuration” section on page 2-1](#) for more information.

- Make sure servers are configured.
- Make sure the service is configured.

**Caution**

Some changes to service parameters may cause system failure. Cisco recommends that you do not make any changes to service parameters unless you fully understand the feature that you are changing or unless the Cisco Technical Assistance Center (TAC) specifies the changes.

Procedure

-
- Step 1** Choose **Service > Service Parameters**.
- Step 2** From the Server drop-down list box, choose a server.
The pane refreshes.
- Step 3** From the Services list, choose the service containing the parameter you want to update.

Step 4 Update the appropriate parameter value.

To view the list with a particular parameter at the top, click that parameter on the Service Parameter Configuration pane. To view a list of parameters and their descriptions, click the **i** button in the upper, right corner of the pane, as shown in the [Figure 30-1](#):

Figure 30-1 Service Parameter Configuration Pane



Note

Some services contain service parameters that should rarely be changed. The Cisco CallManager Administration does not automatically display these parameters when you access the Service Parameter Configuration pane. To view all parameters, click **Advanced**. Once all parameters are displayed, you can redisplay the basic parameters by clicking **Condensed**.

Step 5 Click **Update**.

The pane refreshes, and Cisco CallManager updates the service parameter with your changes.

Related Topics

- [Adding a New Service on a Server](#), page 30-2
- [Deleting a Service From a Server](#), page 30-3
- [Services](#), *Cisco CallManager System Guide*



Transcoder Configuration

The Media Resource Manager (MRM) has responsibility for resource registration and resource reservation of transcoders within a Cisco CallManager cluster. Cisco CallManager simultaneously supports registration of both the MTP and Transcoder and concurrent MTP and transcoder functionality within a single call.

The maximum transcoding sessions per port is 24. The following list gives the supported transcoding capacity and sessions per port:

- G711–G711 MTP: 24 (no DSP is involved)
- G729–G729 MTP: 24 (no DSP is involved)
- G711–G723 transcoding: 24
- G711–G729 transcoding: 24
- G711–GSM Full Rate (FR) transcoding: 24
- G711–GSM Enhanced Full Rate (EFR) transcoding: 24

The Cisco CallManager invokes a transcoder on behalf of endpoint devices when the two devices are using different codecs, and would normally not be able to communicate. When inserted into a call, the transcoder converts the data streams between the two disparate codecs to enable communications between them.

Transcoders are accessible by all Cisco CallManagers within a cluster through the Media Resource Manager (MRM). The MRM determines the number of transcoders needed for a call and allocates the appropriate number of connections.

The MRM makes use of Cisco CallManager media resource groups and media resource group lists. The media resource group list allows transcoders to communicate with other devices in the assigned media resource group, which in turn, provides management of resources within a cluster.

A transcoder control process is created for each transcoder device defined in the database. Each transcoder registers with the MRM when it initializes. The MRM keeps track of the transcoder resources and advertises their availability throughout the cluster.

Use the following topics to configure transcoders:

- [Configuring a Transcoder, page 31-2](#)
- [Updating a Transcoder, page 31-3](#)
- [Copying a Transcoder, page 31-4](#)
- [Deleting a Transcoder, page 31-5](#)
- [Transcoder Configuration Settings, page 31-6](#)

Configuring a Transcoder

This section describes how to configure a transcoder.

Procedure

-
- Step 1** Choose **Service > Transcoder**.
- Step 2** Enter the appropriate settings as described in [Table 31-1](#).
- Step 3** Click **Insert**.

The pane refreshes showing specific information, including the status, for the transcoder you just configured. The transcoder should now appear in the list on the left side of the pane.

Related Topics

- [Transcoder Configuration, page 31-1](#)
- [Media Termination Point Configuration, page 26-1](#)
- [Conference Bridge Configuration, page 25-1](#)
- [Updating a Transcoder, page 31-3](#)
- [Copying a Transcoder, page 31-4](#)

- [Deleting a Transcoder, page 31-5](#)
- [Transcoder Configuration Settings, page 31-6](#)

Updating a Transcoder

This section describes how to update a transcoder.

Procedure

- Step 1** Choose **Service > Transcoder**.
- Step 2** From the Transcoders list on the left side of the pane, click the transcoder you want to update.
- The pane refreshes displaying the transcoder you selected.
- Step 3** Update the appropriate settings as described in [Table 31-1](#).
- Step 4** Click **Update**.
- A message displays stating that the transcoder must be reset before the changes will take effect.
- Step 5** Click **OK**.
- The pane refreshes, showing the updated transcoder.
-

Related Topics

- [Transcoder Configuration, page 31-1](#)
- [Media Termination Point Configuration, page 26-1](#)
- [Conference Bridge Configuration, page 25-1](#)
- [Configuring a Transcoder, page 31-2](#)
- [Copying a Transcoder, page 31-4](#)
- [Deleting a Transcoder, page 31-5](#)
- [Transcoder Configuration Settings, page 31-6](#)

Copying a Transcoder

This section describes how to copy a transcoder.

Procedure

- Step 1** Choose **Service > Transcoder**.
- Step 2** From the Transcoders list, choose the transcoder you want to copy.
The pane refreshes displaying the transcoder you selected.
- Step 3** Click **Copy**.
The pane refreshes again and displays the transcoder with a Copy of... name in the Current Transcoder field.
- Step 4** Update the appropriate settings as described in [Table 31-1](#).
- Step 5** Click **Insert**.
The screen refreshes and the new transcoder appears in the transcoder list on the left side of the pane.
-

Related Topics

- [Transcoder Configuration, page 31-1](#)
- [Media Termination Point Configuration, page 26-1](#)
- [Conference Bridge Configuration, page 25-1](#)
- [Configuring a Transcoder, page 31-2](#)
- [Updating a Transcoder, page 31-3](#)
- [Deleting a Transcoder, page 31-5](#)
- [Transcoder Configuration Settings, page 31-6](#)

Deleting a Transcoder

This section describes how to delete a transcoder.

Procedure

- Step 1** Choose **Service > Transcoder**.
- Step 2** From the Transcoders list, choose the transcoder you want to delete.
The pane refreshes, displaying the transcoder you selected.
- Step 3** Click **Delete**.
A message displays stating that you are about to permanently delete this transcoder and that you cannot undo this action.
- Step 4** Click **OK** if you want to continue or **Cancel** to cancel the deletion.
When the pane is refreshed, the transcoder you deleted should no longer appear in the transcoder list.
-

Related Topics

- [Transcoder Configuration, page 31-1](#)
- [Media Termination Point Configuration, page 26-1](#)
- [Conference Bridge Configuration, page 25-1](#)
- [Configuring a Transcoder, page 31-2](#)
- [Updating a Transcoder, page 31-3](#)
- [Copying a Transcoder, page 31-4](#)
- [Transcoder Configuration Settings, page 31-6](#)
- [Transcoders, Cisco CallManager System Guide](#)

Transcoder Configuration Settings

Table 31-1 describes the transcoder configuration settings.

Table 31-1 Transcoder Configuration Settings

Field	Description
MAC Address	Enter a MAC address (must be at least 12 characters). Use Host Name for an IOS gateway.
Description	Enter a description (up to 15 characters).
Device Pool	Choose a device pool. For more detailed information on the selected device pool, click View Details .
Special Load Information	Enter any special load information into the Special Load Information field, or leave blank to use default.

Related Topics

- [Configuring a Transcoder, page 31-2](#)
- [Updating a Transcoder, page 31-3](#)
- [Copying a Transcoder, page 31-4](#)



Starting and Stopping Services

This section describes how to start and stop the Cisco CallManager and other available services. When you stop and start a Cisco CallManager, all Cisco IP phones and gateways currently registered to that Cisco CallManager fail over to their secondary Cisco CallManager. All other installed applications that are homed to that Cisco CallManager, such as conference bridge and Cisco Messaging Interface (CMI), also stop and start. Devices and phones only restart if they cannot register with another Cisco CallManager.



Caution

Stopping Cisco CallManager stops call processing for all devices controlled by that Cisco CallManager. If possible, avoid stopping and starting the CallManager service during peak hours as this may cause slow performance and extended outages for devices.

You can start and stop services from Windows or from the control center in Cisco CallManager Serviceability. For information on using the control center, refer to the *Cisco CallManager Serviceability Administration Guide*.

For information on starting and stopping services from Windows, see the following topic:

- [Using Windows, page 32-2](#)

Using Windows

This section describes how to use the Windows Control Panel to start or stop the Cisco CallManager service.

Procedure

- Step 1** On the server that has the configured service you want to start or stop, open the Windows Control Panel for Services.



Caution Make sure you are accessing the correct Cisco CallManager server before attempting to start or stop services on that Cisco CallManager.

- Step 2** Choose the Cisco CallManager service you want to start or stop.
- Step 3** Right-click and choose **Start** or **Stop** from the menu, depending on the action you want to perform.
-



PART 5

Feature Configuration



Call Park Configuration

The call park feature allows you to place a call on hold, so that it can be retrieved from another phone in the system. For example, if you are on an active call at your phone, you can park the call to a call park extension such as 1234. Someone on another phone in your system can then dial 1234 to retrieve the call.

You can define either a single directory number or a range of directory numbers for use as call park extension numbers. You can park only one call at each call park extension number.

Use the following topics to add, update, or delete a call park extension:

- [Adding a Call Park Number, page 33-2](#)
- [Updating a Call Park Number, page 33-3](#)
- [Deleting a Call Park Number, page 33-4](#)
- [Call Park Configuration Settings, page 33-5](#)

Adding a Call Park Number

This section describes how to add a single call park extension number or range of extension numbers.

Procedure

- Step 1** Choose **Feature > Call Park**.
- Step 2** Enter the appropriate settings as described in [Table 33-1](#).
- Step 3** Click **Insert** to save the new call park numbers in the database.

The call park number you added should appear in the Call Park Numbers/Ranges list on the left side of the pane.

Related Topics

- [Call Park Configuration, page 33-1](#)
- [Updating a Call Park Number, page 33-3](#)
- [Deleting a Call Park Number, page 33-4](#)
- [Call Park Configuration Settings, page 33-5](#)

Updating a Call Park Number

This section describes how to update a call park extension number or range of numbers.

Procedure

- Step 1** Choose **Feature > Call Park**.
- Step 2** From the Call Park Numbers/Ranges list, choose the call park number or range of numbers you want to update.
- Step 3** Update the appropriate settings as described in [Table 33-1](#).



Note Before saving the changes, you can click **Cancel Changes** to reset all fields to their original values.

- Step 4** Click **Update** to save the changes in the database.
-

Related Topics

- [Call Park Configuration, page 33-1](#)
- [Adding a Call Park Number, page 33-2](#)
- [Deleting a Call Park Number, page 33-4](#)
- [Call Park Configuration Settings, page 33-5](#)

Deleting a Call Park Number

This section describes how to delete call park numbers from the Cisco CallManager database.

Procedure

- Step 1** Choose **Feature > Call Park**.
- Step 2** From the Call Park Numbers/Ranges list, choose the call park number or range of numbers you want to delete.
- Step 3** Click **Delete**.
-

Related Topics

- [Call Park Configuration, page 33-1](#)
- [Adding a Call Park Number, page 33-2](#)
- [Updating a Call Park Number, page 33-3](#)
- [Call Park Configuration Settings, page 33-5](#)

Call Park Configuration Settings

Table 33-1 describes the call park configuration settings.

Table 33-1 Call Park Configuration Settings

Field	Description
Call Park Number/Range	<p>Enter the call park extension number. You can enter literal digits or the wildcard character X. For example, enter 5555 to define a single call park extension number of 5555, or enter 55XX to define a range of call park extension numbers from 5500 to 5599.</p> <p>Note You can create a maximum of 100 call park numbers with one call park range definition. Make sure the call park numbers are unique.</p>
Partition	<p>If you want to use a route partition to restrict access to the call park numbers, choose the desired route partition from the drop-down list box. If you do not want to restrict access to the call park numbers, choose None for the route partition.</p> <p>Note Make sure the combination of call park extension number and route partition are unique within the Cisco CallManager cluster.</p>
Cisco Call Manager	<p>Using the drop-down list box, choose the Cisco CallManager to which these call park numbers apply.</p>

Related Topics

- [Call Park Configuration, page 33-1](#)
- [Adding a Call Park Number, page 33-2](#)
- [Updating a Call Park Number, page 33-3](#)



Call Pickup and Group Call Pickup Configuration

Two features, call pickup and group call pickup, allow you to answer a call that comes in on a directory number other than your own. When you hear an incoming call ringing on another phone, you can redirect the call to your phone by using the call pickup feature.

Cisco IP phones provide two types of call pickup:

- Call pickup allows users to pick up incoming calls within their own group. Cisco CallManager automatically dials the appropriate call pickup group number when a user activates this feature on a phone.
- Group call pickup allows users to pick up incoming calls within their own group or in other groups. Users must dial the appropriate call pickup group number when a user activates this feature on a phone.

The same procedures apply for configuring both of these features, and they are described in the following sections:

- [Adding a Call Pickup Group Number, page 34-2](#)
- [Updating a Call Pickup Group Number, page 34-3](#)
- [Deleting a Call Pickup Group Number, page 34-4](#)
- [Call Pickup Configuration Settings, page 34-5](#)
- [Assigning Directory Numbers to a Call Pickup Group, page 34-6](#)

Adding a Call Pickup Group Number

This section describes how to add a call pickup group number to the Cisco CallManager database.

Procedure

- Step 1** Choose **Feature > Call Pickup**.
- Step 2** Enter the appropriate settings as described in [Table 34-1](#).
- Step 3** Click **Insert** to save the new call pickup group number in the database.
-

Related Topics

- [Call Pickup and Group Call Pickup Configuration, page 34-1](#)
- [Updating a Call Pickup Group Number, page 34-3](#)
- [Deleting a Call Pickup Group Number, page 34-4](#)
- [Call Pickup Configuration Settings, page 34-5](#)
- [Assigning Directory Numbers to a Call Pickup Group, page 34-6](#)

Updating a Call Pickup Group Number

This section describes how to update a call pickup group number. When you update a call pickup group number, Cisco CallManager automatically updates all directory numbers assigned to that call pickup group.

Procedure

- Step 1** Choose **Feature > Call Pickup**.
 - Step 2** Choose the call pickup group number you want to update from the Call Pickup Directory Numbers pane on the left.
 - Step 3** Update the appropriate fields as described in [Table 34-1](#). Before saving the changes, you can click **Cancel Changes** to reset all fields to their original value.
 - Step 4** Click **Update** to save the changes in the database.
-

Related Topics

- [Call Pickup and Group Call Pickup Configuration, page 34-1](#)
- [Adding a Call Pickup Group Number, page 34-2](#)
- [Deleting a Call Pickup Group Number, page 34-4](#)
- [Call Pickup Configuration Settings, page 34-5](#)
- [Assigning Directory Numbers to a Call Pickup Group, page 34-6](#)

Deleting a Call Pickup Group Number

This section describes how to delete a call pickup group number from the Cisco CallManager database.

**Caution**

When you delete a call pickup group number, you disable the call pickup feature for all directory numbers assigned to that group. To enable call pickup again for those directory numbers, you must reassign each of them to a new call pickup group. For details, see the [“Assigning Directory Numbers to a Call Pickup Group”](#) section on page 34-6.

Procedure

-
- Step 1** Choose **Feature > Call Pickup**.
- Step 2** Choose the call pickup group number you want to delete.
- Step 3** Click **Delete**.

The call pickup group no longer displays in the Partition list in the left pane.

Related Topics

- [Call Pickup and Group Call Pickup Configuration, page 34-1](#)
- [Adding a Call Pickup Group Number, page 34-2](#)
- [Updating a Call Pickup Group Number, page 34-3](#)
- [Assigning Directory Numbers to a Call Pickup Group, page 34-6](#)

Call Pickup Configuration Settings

Table 34-1 describes the call pickup configuration settings.

Table 34-1 Call Pickup Configuration Settings

Field	Description
Directory Number	Enter a unique directory number (integers) for the call pickup group you want to add.
Partition	<p>If you want to use a route partition to restrict access to the call pickup group, choose the desired route partition from the drop-down list box. If you do not want to restrict access to the call pickup group, choose None for the route partition.</p> <p>Note Make sure the combination of call pickup group number and route partition is unique within the Cisco CallManager cluster.</p>

Related Topics

- [Call Pickup and Group Call Pickup Configuration, page 34-1](#)
- [Adding a Call Pickup Group Number, page 34-2](#)
- [Updating a Call Pickup Group Number, page 34-3](#)

Assigning Directory Numbers to a Call Pickup Group

This section describes how to assign directory numbers to a call pickup group. Only directory numbers assigned to a call pickup group can use both types of call pickup: call pickup and group call pickup.

Before You Begin

Before you can assign a directory number to a call pickup group, you must create a number for that group as described in the [“Adding a Call Pickup Group Number” section on page 34-2](#).

Procedure

- Step 1** Choose **Device > Phone**.
 - Step 2** Enter the appropriate search criteria to find the directory number that you want to assign to a call pickup group, and click **Find**.
A list of directory numbers that match the search criteria appears.
 - Step 3** Choose the phone where that directory number appears.
 - Step 4** Choose the desired directory number from the Directory Numbers list.
 - Step 5** Choose the desired call pickup group number from the Call Pickup Group drop-down list box.
 - Step 6** Click **Update** to save the changes in the database.
-

Related Topics

- [Call Pickup and Group Call Pickup Configuration, page 34-1](#)
- [Adding a Call Pickup Group Number, page 34-2](#)
- [Updating a Call Pickup Group Number, page 34-3](#)
- [Deleting a Call Pickup Group Number, page 34-4](#)



Cisco IP Phone Services Configuration

Using the Cisco CallManager Administration, you define and maintain the list of Cisco IP Phone Services to which users can subscribe at their site. Cisco IP Phone Services comprise XML applications that enable the display of interactive content with text and graphics on Cisco IP Phones 7960/7940.

Cisco CallManager provides sample Cisco IP Phone Services applications. You can also create customized Cisco IP phone applications for your site.

Once you configure the list of services, you can add services to the phones in the database. You can view and modify settings for phones and device profiles in the Cisco CallManager Administration. Users can log on to the Cisco CallManager user preferences pane and subscribe to these services for their Cisco IP phones.

This section covers the following topics:

- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Updating a Cisco IP Phone Service, page 35-3](#)
- [Deleting a Cisco IP Phone Service, page 35-4](#)
- [Cisco IP Phone Service Configuration Settings, page 35-5](#)
- [Adding a Cisco IP Phone Service Parameter, page 35-6](#)
- [Updating a Cisco IP Phone Service Parameter, page 35-7](#)
- [Deleting a Cisco IP Phone Service Parameter, page 35-8](#)
- [Cisco IP Phone Service Parameter Settings, page 35-9](#)

Adding a Cisco IP Phone Service

Perform the following steps to add a Cisco IP Phone Service.

**Caution**

Do not put Cisco IP Phone Services on any Cisco CallManager server at your site or any server associated with Cisco CallManager, such as the TFTP server or directory database publisher server. This precaution eliminates the possibility of errors in a Cisco IP Phone Service application having an impact on Cisco CallManager performance or interrupting call-processing services.

Procedure

-
- Step 1** Choose **Features > Cisco IP Phone Services**.
- Step 2** Enter the appropriate settings as described in [Table 35-1](#).
- Step 3** Click **Update** to add the service.

Once the service is added to the list, you can add and configure parameters for the service. See to the [“Adding a Cisco IP Phone Service Parameter”](#) section on [page 35-6](#) for more information.

Related Topics

- [Deleting a Cisco IP Phone Service, page 35-4](#)
- [Updating a Cisco IP Phone Service, page 35-3](#)
- [Adding a Cisco IP Phone Service Parameter, page 35-6](#)
- [Cisco IP Phone Service Configuration Settings, page 35-5](#)

Updating a Cisco IP Phone Service

Perform the following steps to update a Cisco IP Phone Service (for example, to change the service URL or other information).

**Note**

If you change the service URL, remove a Cisco IP Phone Service parameter, or change the name of a phone service parameter for a phone service to which users are subscribed, be sure to click **Update Subscriptions** to update all currently subscribed users with the changes. If you do not do so, users must resubscribe to the service to rebuild the URL correctly.

Procedure

-
- Step 1** Choose **Features > Cisco IP Phone Services**.
- Step 2** From the Cisco IP Phone Services list, choose the Cisco IP Phone Service you want to update.
- Step 3** Update the appropriate settings as described in [Table 35-1](#).
- Step 4** Add, update, or delete parameters as needed as described in [“Adding a Cisco IP Phone Service Parameter”](#) section on page 35-6, [“Updating a Cisco IP Phone Service Parameter”](#) section on page 35-7, and [“Deleting a Cisco IP Phone Service Parameter”](#) section on page 35-8.
- Step 5** Update the Cisco IP Phone Services Configuration pane to apply the changes:
- If the service was modified after subscriptions existed, click **Update Subscriptions** to rebuild all user subscriptions. You must update subscriptions if you have changed the service URL, removed a phone service parameter, or changed the Parameter Name for a phone service parameter.
 - If the service is new and you do not need to rebuild user subscriptions, click **Update**.
-

Related Topics

- [Deleting a Cisco IP Phone Service, page 35-4](#)
- [Adding a Cisco IP Phone Service Parameter, page 35-6](#)
- [Cisco IP Phone Service Configuration Settings, page 35-5](#)

Deleting a Cisco IP Phone Service

Perform the following steps to update a Cisco IP Phone Service.

**Note**

When you delete a Cisco IP Phone service, Cisco CallManager removes all service information, user subscriptions, and user subscription data from the database.

Procedure

-
- Step 1** Choose **Features > Cisco IP Phone Services**.
- Step 2** From the Cisco IP Phone Services list, choose the name of the Cisco IP Phone Service you want to delete.
- Step 3** Click **Delete**.
-

Related Topics

- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Updating a Cisco IP Phone Service, page 35-3](#)
- [Cisco IP Phone Service Configuration Settings, page 35-5](#)

Cisco IP Phone Service Configuration Settings

Table 35-1 describes the Cisco IP Phone service configuration settings.

Table 35-1 Cisco IP Phone Service Configuration Settings

Field	Description
Service Name	Enter the name of the service as it will display on the menu of available services on the user preferences pane.
Service Description	Enter a description of the content provided by the service.
Service URL	<p>Enter the URL to the server where the Cisco IP Phone Services application is located. Make sure this server is independent of the servers in your Cisco CallManager cluster. Do not specify a Cisco CallManager server or any server associated with Cisco CallManager (such as a TFTP server or directory database publisher server).</p> <p>For the services to be available, the phones in the Cisco CallManager cluster must have network connectivity to the server.</p> <p>To see a sample service application, go to the following URL:</p> <pre>http://<Server>/ccmuser/sample/sample.asp</pre> <p>Where <Server> is a fully qualified domain name or an IP address.</p>

Related Topics

- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Deleting a Cisco IP Phone Service, page 35-4](#)

Adding a Cisco IP Phone Service Parameter

Use the following procedure to add and configure Cisco IP Phone Service parameters. Add the phone service before you configure parameters. Refer to the documentation for the individual Cisco IP Phone Service for specific information about whether the service uses parameters, how those parameters should be configured, and whether you should provide optional parameter definitions.

Procedure

- Step 1** Choose **Features > Cisco IP Phone Services**.
- The Cisco IP Phone Services Configuration pane displays.
- Step 2** From the Cisco IP Phone Services list, choose the service to which you wish to add parameters.
- Step 3** Click the **New** button to the right of the Parameters list box.
- The Cisco IP Phone Service Parameter Configuration dialog appears.
- Step 4** Enter the appropriate settings as described in [Table 35-2](#).
- Step 5** To add the new parameter, Click **Insert**.
- Step 6** Repeat [Step 3](#) and [Step 5](#) to add additional parameters, if needed.
- Step 7** Click **Insert and Close** to add the last parameter.
-

Related Topics

- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Deleting a Cisco IP Phone Service, page 35-4](#)
- [Updating a Cisco IP Phone Service, page 35-3](#)
- [Updating a Cisco IP Phone Service Parameter, page 35-7](#)
- [Deleting a Cisco IP Phone Service Parameter, page 35-8](#)
- [Cisco IP Phone Service Parameter Settings, page 35-9](#)

Updating a Cisco IP Phone Service Parameter

Perform the following steps to update a service parameter for a specific Cisco IP Phone Service.

**Note**

If you remove a Cisco IP Phone Service parameter or change the parameter name of a phone service for a phone service to which users are subscribed, be sure to click **Update Subscriptions** to update all currently subscribed users with the changes. If you do not do so, users must resubscribe to the service to rebuild the URL correctly.

Procedure

-
- Step 1** Choose **Features > Cisco IP Phone Services**.
 - Step 2** From the Cisco IP Phone Services list, choose the phone service you want to update.
 - Step 3** In the Parameters list box, choose the name of the parameter you want to update.
 - Step 4** Click **Edit**.
 - Step 5** Update the appropriate settings as described in [Table 35-2](#).
 - Step 6** Click **Update** to apply the changes, or click **Update and Close** to apply the changes and close the dialog.
 - Step 7** Update the Cisco IP Phone Services Configuration pane to apply the changes:
 - If the service was modified after subscriptions existed, click **Update Subscriptions** to rebuild all user subscriptions. You must update subscriptions if you changed the service URL, removed a phone service parameter, or changed the name for a phone service parameter.
 - If the service is new and you do not need to rebuild user subscriptions, click **Update**.
-

Related Topics

- [Deleting a Cisco IP Phone Service Parameter, page 35-8](#)
- [Cisco IP Phone Service Configuration Settings, page 35-5](#)

Deleting a Cisco IP Phone Service Parameter

Perform the following steps to delete a Cisco IP Phone Service.

**Note**

If you remove a phone service parameter or modify the Parameter Name of a phone service parameter for a phone service to which users are subscribed, you must click **Update Subscriptions** to update all currently subscribed users with the changes. If you do not do so, users must resubscribe to the service to rebuild the URL correctly.

Procedure

-
- Step 1** Choose **Features > Cisco IP Phone Services**.
- Step 2** From the Cisco IP Phone Services list, choose the phone service whose parameters you want to delete.
- Step 3** In the Parameters list box, choose the name of the parameter you want to delete.
- Step 4** Click **Delete**.
- Step 5** Click **OK** to confirm the deletion.
- Step 6** Update the Cisco IP Phone Services Configuration pane to apply the changes:
- If the service was modified after subscriptions existed, click **Update Subscriptions** to rebuild all user subscriptions. You must update subscriptions if you changed the service URL, removed a phone service parameter, or changed the Parameter Name for a phone service parameter.
 - If the service is new and you do not need to rebuild user subscriptions, click **Update**.
-

Related Topics

- [Updating a Cisco IP Phone Service Parameter, page 35-7](#)
- [Adding a Cisco IP Phone Service Parameter, page 35-6](#)
- [Deleting a Cisco IP Phone Service, page 35-4](#)
- [Cisco IP Phone Service Parameter Settings, page 35-9](#)

Cisco IP Phone Service Parameter Settings

Table 35-2 describes the Cisco IP Phone service parameter settings.

Table 35-2 Cisco IP Phone Service Parameter Settings

Field	Description
Parameter Name	Enter the exact query string parameter to use when building the subscription URL, for example, symbol.
Parameter Display Name	Enter a descriptive parameter name to display to the user on the user preferences page., for example, Ticker Symbol.
Default Value	Enter the default value for the parameter. This value will display to the user when a service is being subscribed to for the first time, for example, CSCO.
Parameter is Required	Check the Parameter is Required box if the user must enter data for this parameter before the subscription can be saved.
Parameter Description	Enter a description of the parameter. The text entered here will be available to the user while they are subscribing to the service. The parameter description should provide information or examples to help users input the correct value for the parameter.



PART 6

Device Configuration



Device Configuration

Cisco CallManager allows you to configure the following devices in your telephony network:

- Cisco voice-mail ports
- CTI route points
- Device profiles
- Gatekeepers
- Gateways
- Phones

This section covers the following topics:

- [Adding Devices to Cisco CallManager, page 36-2](#)
- [Restarting or Resetting a Device, page 36-2](#)

Adding Devices to Cisco CallManager

Before you can use devices, such as gateways and Cisco IP phones in your IP telephony network, you must add them to the Cisco CallManager configuration database.

Refer to these sections for assistance in adding telephony devices to the Cisco CallManager configuration database:

- [Adding a CTI Route Point, page 37-2](#)
- [Adding a Gatekeeper, page 40-2](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Adding a Phone, page 42-4](#)
- [Adding Phone Button Templates, page 43-2](#)
- [Adding Cisco Voice Mail Ports, page 38-12](#)

Restarting or Resetting a Device

At any time, you can restart or reset a device by clicking the **Reset** button on the device pane or by clicking the **Reset** icon on the **Find and List** pane associated with the device, if available. You can restart a device without shutting it down by clicking the **Restart** button. You can shut down a device and bring it back up again by clicking the **Reset** button. If you want to return to the previous window without resetting or restarting the device, click **Close**.

**Note**

Restarting or resetting a gateway drops any calls in progress using that gateway. Other devices wait until calls are complete before restarting or resetting.



CTI Route Point Configuration

A computer telephony integration (CTI) route point designates a virtual device that can receive multiple, simultaneous calls for application-controlled redirection.

For first-party call control, you must add a CTI port for each active voice line. Applications that use CTI route points and CTI ports include Cisco SoftPhone, Cisco IP Auto Attendant, and Cisco IP Interactive Voice Response System. Once you add a CTI route point to Cisco CallManager Administration, information from the RIS Data Collector service displays on the CTI Route Point Configuration pane. When available, the IP address of the device and the name of the Cisco CallManager with which the device registered display.

For detailed instructions on how to configure CTI route points and CTI ports associated with these applications, refer to the documentation and online help included with these applications.

This section describes the following basic procedures:

- [Adding a CTI Route Point, page 37-2](#)
- [Modifying a CTI Route Point, page 37-3](#)
- [Deleting a CTI Route Point, page 37-4](#)
- [Finding CTI Route Points, page 37-5](#)
- [Resetting a CTI Route Point, page 37-6](#)
- [CTI Route Point Configuration Settings, page 37-8](#)
- [Computer Telephony Integration, *Cisco CallManager System Guide*](#)

Adding a CTI Route Point

Perform the following procedure to add a CTI route point.

Procedure

- Step 1** Choose **Device > CTI Route Point**.
- Step 2** Click the Add a New CTI Route Point link.
- Step 3** Enter the appropriate settings, as defined in [Table 37-1](#).
- Step 4** Click **Insert** to add the new CTI route point.

When prompted to add a directory number for line 1, click either **OK** to add the directory number or **Cancel** to continue without adding a directory number. For instructions on how to add and configure directory numbers, refer to the [“Adding a Directory Number”](#) section on page 42-28.

Once you add a CTI route point to Cisco CallManager Administration, information from the RIS Data Collector service displays on the CTI Route Point Configuration pane. When available, the IP address of the device and the name of the Cisco CallManager with which the device registered display as illustrated in [Figure 37-1](#).

Figure 37-1 CTI Route Point Configuration Pane

The screenshot shows the Cisco CallManager Administration web interface. At the top, there is a navigation menu with links: System, Route Plan, Service, Feature, Device, User, Application, and Help. Below the menu is the Cisco CallManager Administration logo and the Cisco Systems logo. The main heading is "CTI Route Point Configuration". To the right of the heading are two links: "Add a New CTI Route Point" and "Back to Find/List CTI Route Points".

Directory Numbers	Device: AutoAttendant (AutoAttendant Route Point)
<ul style="list-style-type: none"> 778 Line 1 - 53505 in Cisco 778 Line 2 - Add DN 	Registration: Registered with Cisco CallManager DLS2-CM166-CM3 IP Address: 172.28.235.133 Status: Ready

At the bottom of the configuration pane are five buttons: Copy, Update, Delete, Reset, and Cancel Changes.

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Related Topics

- [CTI Route Point Configuration](#), page 37-1
- [Modifying a CTI Route Point](#), page 37-3
- [Deleting a CTI Route Point](#), page 37-4
- [Finding CTI Route Points](#), page 37-5
- [Resetting a CTI Route Point](#), page 37-6
- [CTI Route Point Configuration Settings](#), page 37-8
- [Computer Telephony Integration](#), *Cisco CallManager System Guide*

Modifying a CTI Route Point

Perform the following steps to modify a CTI route point.

Procedure

- Step 1** Choose **Device > CTI Route Point**.
The Find/List CTI Route Points pane displays.
- Step 2** Enter the search criteria needed to locate the CTI route point you want to modify.
- Step 3** Click **Find**.
The pane updates to display a list of CTI route points that match the specified search criteria.
- Step 4** Choose the name of the CTI route point whose settings you want to modify.
The pane refreshes to show the current settings for the selected CTI route point.
- Step 5** Update the appropriate settings as described in [Table 37-1](#).
- Step 6** Click **Update** to apply the changes.
The pane refreshes to display the new settings.
-

Related Topics

- [CTI Route Point Configuration](#), page 37-1
- [Adding a CTI Route Point](#), page 37-2
- [Deleting a CTI Route Point](#), page 37-4
- [Finding CTI Route Points](#), page 37-5
- [Resetting a CTI Route Point](#), page 37-6
- [CTI Route Point Configuration Settings](#), page 37-8
- [Computer Telephony Integration](#), *Cisco CallManager System Guide*

Deleting a CTI Route Point

Perform the following procedure to delete a CTI route point:

Procedure

- Step 1** Choose **Device > CTI Route Point**.
- The Find/List CTI Route Points pane displays.
- Step 2** Specify the search criteria needed to locate the CTI route point you want to delete.
- Step 3** Click **Find**.
- The pane refreshes to display a list of the CTI route points that match the specified search criteria.
- Step 4** Perform one of the following actions:
- Check the check boxes next to the CTI route points you want to delete and click **Delete Selected**.
 - Delete all of the CTI route points on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.
 - Choose the name of the CTI route point you want to delete from the list to display its current settings and click **Delete**.
- Step 5** Click **OK** to permanently delete the CTI route point.
-

Related Topics

- [CTI Route Point Configuration, page 37-1](#)
- [Adding a CTI Route Point, page 37-2](#)
- [Modifying a CTI Route Point, page 37-3](#)
- [Finding CTI Route Points, page 37-5](#)
- [Resetting a CTI Route Point, page 37-6](#)
- [CTI Route Point Configuration Settings, page 37-8](#)
- [Computer Telephony Integration, Cisco CallManager System Guide](#)

Finding CTI Route Points

Perform the following procedure to find and list CTI route points.

Procedure

Step 1 Choose **Device > CTI Route Point**.

The Find and List Route Points pane displays.

Step 2 Choose the search criteria to use. To list all items, do not enter any search text, or use "Device Name is not empty" as the search criteria.

Step 3 Click **Find**.

The pane refreshes to display a list of the CTI route points that match the specified search criteria. This pane also lists the total number of CTI route points and panes.

Step 4 To view the next set of CTI route points, click **Next**.

**Note**

You can delete or reset multiple CTI route points from the Find and List Route Points pane by checking the check boxes next to the appropriate CTI route points and clicking **Delete Selected** to delete the CTI route points or clicking **Reset Selected** to reset the CTI route points. You can choose all CTI route points on the pane by checking the check box in the matching records title bar.

Related Topics

- [CTI Route Point Configuration](#), page 37-1
- [Adding a CTI Route Point](#), page 37-2
- [Modifying a CTI Route Point](#), page 37-3
- [Deleting a CTI Route Point](#), page 37-4
- [Resetting a CTI Route Point](#), page 37-6
- [CTI Route Point Configuration Settings](#), page 37-8
- [Computer Telephony Integration](#), *Cisco CallManager System Guide*

Resetting a CTI Route Point

Perform the following procedure to reset a CTI route point.

Procedure

Step 1 Choose **Device > CTI Route Point**.

The Find and List CTI Route Points pane displays.





Step 2 Choose the search criteria to use.

Step 3 Click **Find**.

The pane displays a list of CTI route points that match the search criteria as illustrated in [Figure 37-2](#).

Figure 37-2 Find and List CTI Route Points Configuration Pane

Matching record(s) 1 to 2 of 2
Real-time Information Service returned information for 2 of 2 devices listed below.

<input type="checkbox"/>	Device Name	Description	Device Pool	Status	IP Address	Copy
<input type="checkbox"/>	 AutoAttendant	AutoAttendant Route Point	cm231	DLS2-CM166-CM3	172.28.235.133	
<input type="checkbox"/>	 TAPSRoutePoint	TAPSRoutePoint	Default	DLS2-CM166-CM1	172.28.235.131	

Delete Selected Reset Selected First Previous Next Last Page 1 of 1

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- Step 4** Check the check boxes next to the CTI route points you want to reset. To select all CTI route points on the pane, check the check box in the matching records title bar.
- Step 5** Click **Reset Selected**.
The Reset Device dialog displays.
- Step 6** Click one of the following items:
- **Restart Device**—Restarts a device without shutting it down.
 - **Reset Device**—Shuts down a device and brings it back up.
 - **Close**—Closes the Reset Device dialog without performing any action.
-

Related Topics

- [CTI Route Point Configuration, page 37-1](#)
- [Adding a CTI Route Point, page 37-2](#)
- [Modifying a CTI Route Point, page 37-3](#)
- [Deleting a CTI Route Point, page 37-4](#)
- [Finding CTI Route Points, page 37-5](#)
- [CTI Route Point Configuration Settings, page 37-8](#)
- [Computer Telephony Integration, *Cisco CallManager System Guide*](#)

CTI Route Point Configuration Settings

Table 37-1 describes the CTI route point configuration settings.

Table 37-1 CTI Route Point Configuration Settings

Field	Description
Device Name	Enter unique identifier for this device, from 1 to 15 characters, including alphanumeric, dot, dash, or underscores.
Description	Enter a descriptive name for the CTI route point.
Device Pool	Choose the name of a Device Pool. The device pool specifies the collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration.
Location	Choose the appropriate location for this route point. The location specifies the total bandwidth available for calls to and from this location. A location setting of <i>None</i> means that the locations feature does not keep track of the bandwidth consumed by this route point.
Calling Search Space	Choose a calling search space. The calling search space specifies the collection of partitions searched to determine how a collected (originating) number should be routed.

Related Topics

- [CTI Route Point Configuration, page 37-1](#)
- [Adding a CTI Route Point, page 37-2](#)
- [Modifying a CTI Route Point, page 37-3](#)
- [Deleting a CTI Route Point, page 37-4](#)
- [Finding CTI Route Points, page 37-5](#)
- [Resetting a CTI Route Point, page 37-6](#)
- [Computer Telephony Integration, Cisco CallManager System Guide](#)



Cisco Voice Mail Configuration

The optional Cisco Unified Open Network Exchange (uOne) software and Cisco Unity software, available as part of Cisco IP Telephony Solutions, provide voice-messaging capability for users when they are unavailable to answer calls. This section describes the procedures required for adding and configuring Cisco voice-mail ports in Cisco CallManager for both these voice-mail systems.

For more information about configuring Cisco CallManager with Cisco uOne, refer to the installation and configuration documentation that shipped with the software. For more information about configuring Cisco Unity, refer to the *Cisco CallManager 3.1 and Dual Switch Integration Guide*.

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Setting up the MWI Device, page 38-9](#)
- [MWI Device Configuration Settings, page 38-10](#)
- [Configuring Cisco Voice Mail Ports, page 38-11](#)
- [Cisco uOne Configuration Checklist, *Cisco CallManager System Guide*](#)
- [Cisco Unity Configuration Checklist, *Cisco CallManager System Guide*](#)

Using the Cisco Voice Mail Port Wizard

The Cisco Voice Mail Port Wizard tool allows Cisco CallManager administrators to quickly add and delete ports associated with a Cisco voice-mail server to the Cisco CallManager database. This section describes the following procedures:

- [Adding a New Cisco Voice Mail Server and Ports, page 38-2](#)
- [Adding Ports to an Existing Cisco Voice Mail Server, page 38-6](#)
- [Deleting Ports from an Existing Cisco Voice Mail Server, page 38-8](#)

Adding a New Cisco Voice Mail Server and Ports

Perform the following steps to use the Cisco Voice Mail Port Wizard to add a new Cisco voice mail server and ports to the Cisco CallManager database.

Before You Begin

The Cisco Voice Mail Port Wizard requires a range of consecutive directory numbers for the voice-mail ports. Make sure the voice-mail pilot number and subsequent numbers are available.

Procedure

Step 1 Choose **Device > Cisco Voice Mail Port Wizard**.

If no Cisco voice-mail ports exist, the wizard prompts you to enter the name of the Cisco voice-mail server to add (see [Step 4](#)). Otherwise, continue with [Step 2](#).

Step 2 Choose **Create a new Cisco Voice Mail server and add ports to it**.

Step 3 Click **Next**.

The Cisco Voice Mail Server pane displays.

Step 4 Enter the name of the Cisco voice-mail server.



Note

For Cisco uOne systems, this name must match the CMDeviceName value in the SS.ini uOne configuration file (the default is CiscoUM). You do not need to add the “-VI<port_number>” suffix, because the wizard automatically appends this when adding the ports.

Step 5 Click **Next**.

The Cisco Voice Mail Ports pane displays.

Step 6 From the drop-down list box, choose the number of ports to add.

Step 7 Click **Next**.

The Cisco Voice Mail Device Information pane displays.

Step 8 Enter the appropriate configuration settings, as described in [Table 38-1](#). The wizard applies these configuration settings to all of the new ports.

Table 38-1 Voice Mail Port Wizard Device Information Configuration Settings

Field	Description
Description	Enter the purpose of device.
Device Pool	Choose the default value Default Pool .
Calling Search Space	Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers called from this directory number.
Location	Choose the default value None . The location specifies the total bandwidth available for calls to and from this device. A location setting of <i>None</i> means that the locations feature does not keep track of the bandwidth consumed by this device.

Step 9 Click **Next**.

The Cisco Voice Mail Pilot Number pane displays.

Step 10 Enter the pilot number settings as described in [Table 38-2](#).

Table 38-2 Voice Mail Port Wizard Pilot Number Configuration Settings

Field	Description
Pilot Number	Enter the number people call to access the Cisco voice-mail server. Each new port receives the next available directory number. Note For Cisco uOne systems, make sure this number is the same as the Cisco uOne pilot directory number configured in the Cisco uOne DialMap.ini file.
Partition	Choose the partition to which this set of directory numbers belong. Choose None if partitions are not used. If you choose a partition, you must choose a calling search space that includes that partition.
Calling Search Space	Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers called from this directory number. If you choose a partition, you must choose a calling search space that includes that partition.
Display	This field indicates text that appears on the calling party phone when a call is placed to this line.

Step 11 Click **Next**.

The Cisco Voice Mail Operator Number pane displays.

Step 12 Enter an operator number, if necessary.

The operator number designates the number to which the last port is forwarded. The voice-mail system directs a caller to this number if all ports on the Cisco voice-mail server are busy. Supplying an attendant number here gives the caller another chance to reach the party they were calling, instead of getting a busy signal if all ports are in use.

Step 13 Click **Next**.

A summary pane that lists the settings you configured in the previous panes displays. The Cisco Voice Mail Port Wizard automatically assigns the correct values for the Forward Busy and Forward No Answer fields for each port.

Step 14 If this information is correct, click **Finish** to add the new ports.

If the information shown is not correct, click the **Back** button to edit the information or **Cancel** to quit without adding any ports.

Next Steps

Configure the service parameters for your voice-mail server. For more information, refer to the [“Cisco CallManager Service Parameters for Cisco uOne”](#) section in the *Cisco CallManager System Guide*.

For Cisco uOne systems, make sure you also set up the message-waiting indicator (MWI) device. For more information, see the [“Setting up the MWI Device”](#) section on page 38-9.

Related Topics

- [Cisco Voice Mail Configuration, page 38-1](#)
- [Adding Ports to an Existing Cisco Voice Mail Server, page 38-6](#)
- [Deleting Ports from an Existing Cisco Voice Mail Server, page 38-8](#)
- [Setting up the MWI Device, page 38-9](#)
- [MWI Device Configuration Settings, page 38-10](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)

Adding Ports to an Existing Cisco Voice Mail Server

Perform the following steps to use the Cisco Voice Mail Port Wizard to add ports to an existing Cisco voice-mail server.

Before You Begin

The Cisco Voice Mail Port Wizard requires a range of consecutive directory numbers for the voice-mail ports. Make sure the voice-mail pilot number and subsequent numbers are available.

The voice-mail pilot number designates the number people call to access the Cisco voice-mail server.



Note

For Cisco uOne systems, this number designates the Cisco voice-mail pilot directory number configured in the Cisco uOne DialMap.ini file. Refer to the Cisco uOne documentation for information about the Cisco uOne .ini files.

Procedure

- Step 1** Choose **Device > Cisco Voice Mail Port Wizard**.
- Step 2** Choose **Add Ports to an Existing Cisco Voice Mail Server**.
- Step 3** Click **Next**.
The Cisco Voice Mail Server pane displays.
- Step 4** From the list, choose the name of an existing Cisco voice-mail server (pilot number), and click **Next**.
The Cisco Voice Mail Ports pane displays and identifies the number of ports that are currently configured.
- Step 5** From the list, choose the number of ports to add and click **Next**.
A summary pane displays the configuration information for the Cisco voice-mail server to which you added the ports. The Cisco Voice Mail Port Wizard automatically selects consecutive directory numbers following the last port and uses the same Partition and Calling Search Space settings as the Cisco voice-mail pilot directory number. You can enter a different range of directory numbers in the New Directory Numbers field.
- Step 6** Click **Next**.

Step 7 If needed, add, change, or remove the Operator Number for this Cisco voice mail server and ports; then, click **Next**.

The Ready to Add Ports summary pane displays the new settings.

Step 8 If this information is correct, click **Finish** to add the new ports.

If the information shown is not correct, click the **Back** button to edit the information or click **Cancel** to quit without adding any ports.

Related Topics

- [Cisco Voice Mail Configuration, page 38-1](#)
- [Adding a New Cisco Voice Mail Server and Ports, page 38-2](#)
- [Deleting Ports from an Existing Cisco Voice Mail Server, page 38-8](#)
- [Cisco uOne Configuration Checklist, *Cisco CallManager System Guide*](#)
- [Cisco Unity Configuration Checklist, *Cisco CallManager System Guide*](#)

Deleting Ports from an Existing Cisco Voice Mail Server

Perform the following steps to use the Cisco Voice Mail Port Wizard to delete ports from an existing Cisco voice-mail server.

Procedure

- Step 1** Choose **Device > Cisco Voice Mail Port Wizard**.
- Step 2** Choose **Delete ports from an existing Cisco Voice Mail server** and click **Next**.
The Cisco Voice Mail Server pane displays.
- Step 3** From the list, choose the name of an existing Cisco voice-mail server (pilot number) and click **Next**.
The Cisco Voice Mail Ports pane, which indicates the number of ports that are currently configured, displays.
- Step 4** From the list, choose the number of ports to delete and click **Next**.
A summary pane displays the updated settings for the Cisco voice-mail server from which you deleted the ports. The Cisco Voice Mail Port Wizard automatically updates the port numbers, directory numbers, Forward Busy, and Forward No Answer numbers, so that they are consecutive.
- Step 5** If this information is correct, click **Finish** to delete the selected ports.
If the information shown is not correct, click the **Back** button to edit the information or **Cancel** to quit without deleting any ports.
-

Related Topics

- [Cisco Voice Mail Configuration, page 38-1](#)
- [Adding a New Cisco Voice Mail Server and Ports, page 38-2](#)
- [Adding Ports to an Existing Cisco Voice Mail Server, page 38-6](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)

Setting up the MWI Device

Use the following procedure to create and configure the MWI device for use with Cisco uOne voice-mail systems.

**Note**

If you are configuring a Cisco Unity voice-mail system, you do not need to perform this procedure.

Procedure

-
- Step 1** Choose **Device > Cisco Voice Mail Port**.
- Step 2** Enter the appropriate settings as described in [Table 38-3](#).

**Note**

The voice-mail system only uses the directory number for the MWI device for turning on the message indicator. Because the MWI device is not used by the Cisco uOne messaging system or Cisco CallManager for receiving calls, the Display, Forward All, Forward Busy, and Forward No Answer fields are not used.

- Step 3** Click **Insert** to add this device to the system.
-

Related Topics

- [Cisco Voice Mail Configuration, page 38-1](#)
- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Configuring Cisco Voice Mail Ports, page 38-11](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)

MWI Device Configuration Settings

Table 38-3 describes the MWI device configuration settings.

Table 38-3 MWI Device Configuration Settings

Field Name	Description
Port Name	<p>Enter the name of the Cisco MWI uOne port device. This name must match the CMDeviceName value in the SSMWI.ini file (for example, CiscoMWI-VI1).</p> <p>Note For more information about Cisco uOne .ini files, refer to the Installation and Configuration documentation supplied with Cisco uOne.</p>
Description	Enter a description of the device.
Device Pool	Choose the default value Default .
Calling Search Space	If partitions and calling search spaces are used, choose a calling search space that includes the partitions of the DNs on all phones whose lamps you want to turn on (the partition defined for a phone DN must be in a calling search space that the MWI device uses).
Location	<p>Choose the default value None.</p> <p>The location specifies the total bandwidth available for calls to and from this device. A location setting of <i>None</i> means that the locations feature does not keep track of the bandwidth consumed by this device.</p>
Directory Number	Enter the Cisco MWI device directory number. Make sure this is a number that is not used within the Cisco uOne messaging system or within the Cisco CallManager auto-registration range.
Partition	If partitions are being used, choose the appropriate partition.

Table 38-3 MWI Device Configuration Settings (continued)

Field Name	Description
Calling Search Space	If partitions and calling search spaces are used, choose a calling search space that includes the partitions of the DNs on all phones whose lamps you want to turn on (the partition defined for a phone DN must be in a calling search space that the MWI device uses).
Display	Leave this field blank.
Forward All	Leave this field blank.
Forward Busy	Leave this field blank.
Forward No Answer	Leave this field blank.

Related Topics

- [Cisco Voice Mail Configuration, page 38-1](#)
- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Setting up the MWI Device, page 38-9](#)
- [Configuring Cisco Voice Mail Ports, page 38-11](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)

Configuring Cisco Voice Mail Ports

You can add and delete ports associated with a Cisco voice-mail server to the Cisco CallManager database without using the Cisco Voice Mail Port Wizard. This section describes the following procedures:

- [Adding Cisco Voice Mail Ports, page 38-12](#)
- [Deleting a Cisco Voice Mail Port, page 38-13](#)
- [Updating a Cisco Voice Mail Port, page 38-14](#)

Adding Cisco Voice Mail Ports

To connect a Cisco voice-mail system to Cisco CallManager, you must add Cisco voice-mail ports to the Cisco CallManager database. You must enter all users and their directory numbers in Cisco CallManager Administration for them to retrieve messages from a Cisco voice-mail device. Follow these instructions to add individual Cisco voice-mail ports to the Cisco CallManager database (for example, to update the Operator Number).



Tips

You can also use the Cisco Voice Mail Port Wizard to add a new Cisco voice-mail server and ports or to add multiple ports to an existing server rather than the procedure described here. See the [“Using the Cisco Voice Mail Port Wizard” section on page 38-2](#) for more information.

Procedure

-
- Step 1** Choose **Device > Cisco Voice Mail Port**.
- The Cisco Voice Mail Port Configuration pane displays.
- Step 2** Enter the appropriate settings as described in [Table 38-4](#).
- Step 3** Click **Insert** to add the new Cisco voice-mail port device.
-

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Deleting a Cisco Voice Mail Port, page 38-13](#)
- [Updating a Cisco Voice Mail Port, page 38-14](#)
- [Copying an Existing Cisco Voice Mail Port, page 38-15](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)

Deleting a Cisco Voice Mail Port

Follow these procedures to delete a single Cisco voice-mail port from Cisco CallManager.



Tips

You can also use the Cisco Voice Mail Port Wizard to delete ports from an existing server instead of using the procedure described here. See the [“Using the Cisco Voice Mail Port Wizard”](#) section on page 38-2 for more information.

Procedure

Step 1 Choose **Devices > Cisco Voice Mail Port**.

The Cisco Voice Mail Port Configuration pane displays with a list of the defined Cisco voice-mail ports.

Step 2 Choose the Cisco voice-mail port you want to delete.



Note

When you delete a voice-mail port (and its associated directory number), you must make sure that no Cisco voice-mail ports refer to the deleted directory number in their Forward Busy and Forward No Answer fields.

Step 3 Click **Delete**.

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Adding Cisco Voice Mail Ports, page 38-12](#)
- [Updating a Cisco Voice Mail Port, page 38-14](#)
- [Copying an Existing Cisco Voice Mail Port, page 38-15](#)
- [Cisco uOne Configuration Checklist, *Cisco CallManager System Guide*](#)
- [Cisco Unity Configuration Checklist, *Cisco CallManager System Guide*](#)

Updating a Cisco Voice Mail Port

Follow these procedures to update a Cisco voice-mail port (for example, to make minor changes such as updating the Operator Number).

Procedure

- Step 1** Choose **Devices > Cisco Voice Mail Port**.
- The Cisco Voice Mail Port Configuration pane displays with a list of the defined Cisco voice-mail ports.
- Step 2** Choose the Cisco voice-mail port you want to update.
- Step 3** Update the appropriate settings as described in [Table 38-4](#).
- Step 4** Click **Update**.
-

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Adding Cisco Voice Mail Ports, page 38-12](#)
- [Deleting a Cisco Voice Mail Port, page 38-13](#)
- [Copying an Existing Cisco Voice Mail Port, page 38-15](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)

Copying an Existing Cisco Voice Mail Port

If you want to add several similar Cisco voice-mail ports to the Cisco CallManager database, you can add one and then copy its basic settings to apply to another Cisco voice-mail port.



Tips

You will find it much easier to use the Cisco Voice Mail Port Wizard to add a new Cisco voice-mail server and ports or to add multiple ports to an existing server instead of using the procedure described here. See the [“Using the Cisco Voice Mail Port Wizard”](#) section on page 38-2 for more information.

Follow these steps to copy a Cisco voice-mail port and its settings.

Procedure

Step 1 Choose **Devices > Cisco Voice Mail Port**.

The Cisco Voice Mail Port Configuration pane displays with a list of the defined Cisco voice-mail ports.

Step 2 Choose the Cisco voice-mail port you want to copy.

Step 3 Click **Copy**.

Step 4 Update the appropriate settings as described in [Table 38-4](#).



Note You must change the Port Name and Directory Number fields. You should also update the Forward Busy and Forward No Answer fields.

Step 5 Click **Insert**.

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Adding Cisco Voice Mail Ports, page 38-12](#)
- [Deleting a Cisco Voice Mail Port, page 38-13](#)
- [Updating a Cisco Voice Mail Port, page 38-14](#)

Cisco Voice Mail Port Configuration Settings

Table 38-4 describes the Cisco voice-mail port configuration settings.

Table 38-4 Cisco Voice Mail Port Configuration Settings

Field	Description
Port Name	<p>Enter a name to identify the Cisco voice-mail port. You must add a device for each port on Cisco voice-mail. If there are 24 ports, you must define 24 devices.</p> <p>Note For Cisco uOne systems, make sure the name matches the information in the uOne .ini files, such as CiscoUM-VI1 or CiscoUM-VI2. Use the following naming convention for the ports: CiscoUM-VI<<i>consecutive number for each port</i>>.</p>
Description	Enter the purpose of the device.
Device Pool	Choose the default value Default Pool .
Calling Search Space	Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers called from this device.
Location	<p>Choose the default value None.</p> <p>The location specifies the total bandwidth available for calls to and from this device. A location setting of <i>None</i> means that the locations feature does not keep track of the bandwidth consumed by this device.</p>
Directory Number	Enter the number associated with this voice-mail port. Make sure this field is unique in combination with the Partition field.
Partition	Choose the partition to which the directory number belongs. Choose None if partitions are not used. If you choose a partition, you must choose a calling search space that includes that partition.

Table 38-4 Cisco Voice Mail Port Configuration Settings (continued)

Field	Description
Calling Search Space	Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers called from this directory number. If you choose a partition, you must choose a calling search space that includes that partition.
Display	This field indicates text that appears on the calling party phone when a call is placed to this line.
Forward All	Leave this field blank.
Forward Busy	Enter the voice-mail directory number where calls are forwarded if this port is busy (for example, the next sequential voice-mail port number). For this number, use the next sequential Cisco voice-mail port or, if it is the last port, an operator number. Make the Forward Busy and Forward No Answer fields have the same value.
Forward No Answer	Enter the voice-mail directory number where calls are forwarded if this port does not answer the call (for example, the next sequential port). Make this number the next sequential Cisco voice-mail port or, if it is the last port, an operator number. Make sure the Forward Busy and Forward No Answer fields have the same value.

Related Topics

- [Using the Cisco Voice Mail Port Wizard, page 38-2](#)
- [Adding Cisco Voice Mail Ports, page 38-12](#)
- [Deleting a Cisco Voice Mail Port, page 38-13](#)
- [Updating a Cisco Voice Mail Port, page 38-14](#)
- [Cisco uOne Configuration Checklist, Cisco CallManager System Guide](#)
- [Cisco Unity Configuration Checklist, Cisco CallManager System Guide](#)



Device Profile Configuration

A device profile comprises the set of attributes (services and/or features) associated with a particular device. A user device profile contains device information to be used when a user logs in to a device.

Use the following topics to configure and locate device profiles:

- [Finding a Device Profile, page 39-2](#)
- [Adding a New User Device Profile, page 39-3](#)
- [Updating User Device Profiles, page 39-5](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)
- [Directory Number Configuration Settings, page 39-8](#)
- [Extension Mobility and Phone Login Features, *Cisco CallManager System Guide*](#)

Finding a Device Profile

This topic describes how to use the Find and List Device Profile pane. The Find and List lookup function allows you to search for user and autogenerated device profiles or both types. The function searches every type of device profile against the following categories:

- Device name
- Device description

Procedure

Step 1 Choose **Device > Device Profile**.

The Find and List Device Profile pane displays.

Step 2 From the drop-down lists, choose your search text for the type of device profiles you want listed and click **Find**.



Note To find all device profiles registered in the database, choose All Device Profiles from the drop-down list without entering any search text and click **Find**. You can also use “Device Name is not empty” as your search criteria.

The pane refreshes and then displays the device profiles that match your search criteria.

To jump to an autogenerated device profile or user device profile:

Step 3 Choose the device profile from the list of records that match your search criteria.

To delete device profiles:

Step 4 Use the check box in the first column to delete multiple device profiles at once. Check the first check box in the list and click **Delete Selected**. You can also choose individual user device profiles to delete them separately.

**Note**

You cannot delete autogenerated device profiles. User device profiles cannot be deleted if they are being used as a logout profile by phones.

Related Topics

- [Adding a New User Device Profile, page 39-3](#)
- [Updating User Device Profiles, page 39-5](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)
- [Directory Number Configuration Settings, page 39-8](#)
- [Device Profile Configuration, page 39-1](#)

Adding a New User Device Profile

This topic describes how to add a new user device profile. The user device profile contains attributes such as device profile name, description, phone template, expansion modules, directory numbers, subscribed services, and speed-dial information. Refer to [Extension Mobility and Phone Login Features](#) in the *Cisco CallManager System Guide* for more detailed information.

Before You Begin

Make sure phone button template(s) are already configured before proceeding with the steps. See the [“Adding Phone Button Templates”](#) section on page 43-2 for more information.

Procedure

-
- Step 1** Choose **Device > Device Profile**.
- The pane refreshes to the Find and List Device Profiles pane.
- Step 2** In the upper, right corner, choose the Add New User Device Profile link.

The User Device Profile Configuration pane displays.

- Step 3** Enter a unique name in the User Device Profile Name field. This name can comprise up to 50 characters in length.
- Step 4** Enter a description of the user device profile in the Description field. For text, use anything that describes this particular user device profile.
- Step 5** From the Phone Button Template drop-down list, choose a phone button template. You can configure one or two expansion modules for this device profile by choosing phone buttons from the expansion module drop-down lists in the expansion module fields.



Note You can view a phone button list at any time by choosing the View button list link next to the phone button template fields. A separate pane pops up, displaying the phone buttons for that particular expansion module.

- Step 6** Click **Insert**.
- Step 7** A dialog box appears asking you to configure a directory number for line 1 of this user device profile. Click **OK**.
The Directory Number Configuration pane displays.
- Step 8** Enter the appropriate settings as described in Table 39-1.
- Step 9** Click **Insert**.
The pane refreshes and returns to the user device profile configuration pane for this device profile.
-

Related Topics

- [Finding a Device Profile, page 39-2](#)
- [Updating User Device Profiles, page 39-5](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)

- [Directory Number Configuration Settings, page 39-8](#)
- [Device Profile Configuration, page 39-1](#)

Updating User Device Profiles

This section describes how to update a user device profile.

Before You Begin

Make sure the user device profile you want to update is configured in Cisco CallManager before proceeding with the steps. See the [“Adding a New User Device Profile” section on page 39-3](#) to configure a user device profile.

Procedure

-
- Step 1** Locate the user device profile you want to update. See the [“Finding a Device Profile” section on page 39-2](#).
- Step 2** From the User Device Profile Configuration pane, make the desired changes to the user device profile; then, click **Update**.

The changes you made should now appear in this user device profile.



Note You must login to a device in order for changes to a user device profile to take affect.

Related Topics

- [Finding a Device Profile, page 39-2](#)
- [Adding a New User Device Profile, page 39-3](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)
- [Directory Number Configuration Settings, page 39-8](#)
- [Device Profile Configuration, page 39-1](#)

Deleting a User Device Profile

This section describes how to delete a user device profile.

Before You Begin

Make sure the user device profile you want to delete is configured in Cisco CallManager before proceeding with the steps. See the [Adding a New User Device Profile, page 39-3](#), to configure a user device profile.

Procedure

-
- Step 1** Locate the user device profile you want to delete. See the “[Finding a Device Profile](#)” section on page 39-2.
- Step 2** From the User Device Profile Configuration pane, click **Delete**.
- A message displays stating that this action cannot be undone.
- Click **OK** to delete the device profile or **Cancel** to cancel the deletion.



Note If a user device profile is configured as a default logout device profile, you cannot delete it. If you want to delete a logout device profile, you must change it from a logout device profile and configure another device profile as the logout device profile for that phone. Once the user device profile is no longer a logout device profile, you can delete it.

Related Topics

- [Finding a Device Profile, page 39-2](#)
- [Adding a New User Device Profile, page 39-3](#)
- [Updating User Device Profiles, page 39-5](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)
- [Directory Number Configuration Settings, page 39-8](#)
- [Device Profile Configuration, page 39-1](#)

Configuring New Directory Numbers for Autogenerated Device Profiles

This topic describes how to add new directory numbers, on assigned lines, for autogenerated device profiles.

Before You Begin

Make sure the following prerequisites are met before proceeding with the steps:

- Make sure the autogenerated device profile(s) are configured before proceeding with the steps. See the [“Updating a Phone” section on page 42-9](#) for more information.
- You must add new directory numbers for an autogenerated device profile from the Autogenerated Device Profile Configuration pane. See the [“Finding a Device Profile” section on page 39-2](#) for more information.

Procedure

Step 1 From the Autogenerated Device Profile Configuration pane, choose the line on which you want to add a new DN, from the directory number list on the left side of the pane.

The pane refreshes to the Directory Number Configuration pane for this line.

Step 2 Enter the appropriate settings as described in Table 39-1.

Step 3 Click **Insert**.

The pane refreshes and displays the settings you configured.



Note You can also update, delete, and restart devices from the Directory Number Configuration pane by clicking the corresponding buttons for these functions. Deleting a directory number removes it from the line, and you cannot undo this action.

Step 4 Return to the Autogenerated Device Profile pane by clicking the Configure Device Profile link.

The new directory number should appear on the appropriate line in the list on the left side of the pane.

**Note**

When you update the configuration settings for a phone, if an autogenerated device profile has a different default setting than the phone, the setting of the device profile is overwritten when you choose <User Current Device Setting> as the logout device profile from the Phone Configuration web pane.

Related Topics

- [Finding a Device Profile, page 39-2](#)
- [Adding a New User Device Profile, page 39-3](#)
- [Updating User Device Profiles, page 39-5](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Directory Number Configuration Settings, page 39-8](#)
- [Device Profile Configuration, page 39-1](#)
- [Configuring Directory Numbers, page 42-27](#)

Directory Number Configuration Settings

Table 39-1 describes directory number configuration settings for directory number fields.

Table 39-1 *Directory Number Configuration Settings*

Field	Description
Directory Number	
Directory Number	Indicates a dialable phone number. Values can include a maximum of 50 alphanumeric characters except for (.) and (@).

Table 39-1 Directory Number Configuration Settings (continued)

Field	Description
Partition	<p>Indicates the route partition to which the directory number belongs.</p> <p>Make sure partition designation is unique in combination with the directory number.</p>
Directory Number Settings	
Voice Message Box	<p>Indicates the number to which voice-mail messages are sent.</p> <p>Always designate this number as the same as the directory number.</p>
Calling Search Space	<p>Collection of partitions for which numbers called from this directory number are searched.</p> <p>Entry changes cause update of the numbers listed in the Call Pickup Group field.</p> <p>Designation applies to all devices using this directory number.</p>
User Hold Audio Source	The audio source played when a user initiates a hold action.
Network Hold Audio Source	This audio source plays when the network initiates a hold action.
Call Waiting	<p>Specifies whether this directory number uses call waiting when a line is busy (On), responds with a busy signal (Off), or uses the system-wide default setting (Default).</p> <p>Designation applies to all devices using this directory number.</p>
Activate Auto Answer for this Directory Number	Checking this check box activates the Auto Answer feature for this directory number.

Table 39-1 Directory Number Configuration Settings (continued)

Field	Description
Call Forward and Pickup Settings	
Forward All	<p>Indicates the directory number to which all calls are forwarded.</p> <p>Use any dialable phone number, including an outside destination.</p> <p>Setting applies to all devices using this directory number.</p>
Forward Busy	<p>Use any dialable phone number, including an outside destination.</p> <p>Setting applies to all devices using this directory number.</p>
Forward No Answer	<p>Indicates the directory number to which a call is forwarded when the call is not answered.</p> <p>Use any dialable phone number, including an outside destination.</p> <p>Setting applies to all devices using this directory number.</p>
Call Pickup Group	<p>Indicates a number that can be dialed to answer calls to this directory number (in the specified partition).</p>
Line Settings for this Device	
Display (Internal Caller ID)	<p>Leave this field blank to have the system display the extension.</p> <p>Use a maximum of 30 alphanumeric characters. Typically, use the user name or the directory number.</p> <p>Setting applies only to the current device.</p>

Table 39-1 Directory Number Configuration Settings (continued)

Field	Description
External Phone Number Mask	Indicates phone number (or mask) used to send Caller ID information when placing a call from this line. Number includes a maximum of 30 number and “X” characters. The X characters must appear at the end of the pattern.
Disable Ring on this line	Stops the phone from ringing to indicate incoming calls. Setting applies only to the current device.

Related Topics

- [Finding a Device Profile, page 39-2](#)
- [Adding a New User Device Profile, page 39-3](#)
- [Updating User Device Profiles, page 39-5](#)
- [Deleting a User Device Profile, page 39-6](#)
- [Device Profile Configuration, page 39-1](#)
- [Configuring New Directory Numbers for Autogenerated Device Profiles, page 39-7](#)
- [Configuring Directory Numbers, page 42-27](#)



Gatekeeper Configuration

A gatekeeper device, also known as a Cisco Multimedia Conference Manager (MCM), supports the H.225 Registration, Admission, and Status Protocol (RAS) message set used for call admission control, bandwidth allocation, and dial pattern resolution (call routing). The gatekeeper provides these services for communications between Cisco CallManager clusters. You can configure only one primary gatekeeper device per Cisco CallManager cluster.

Gatekeeper configuration consists of two components:

- Cisco CallManager configuration. Each Cisco CallManager cluster must register with the gatekeeper as a single VoIP gateway. This chapter describes how to configure Cisco CallManager as a VoIP gateway to the gatekeeper.
- Gatekeeper configuration on the router. This type of configuration applies to a Cisco IOS Multimedia Conference Manager (MCM) that acts as the gatekeeper. Recommended platforms for the gatekeeper include Cisco 2600, 3600, or 7200 routers with Cisco IOS Release 12.1(3)T or higher. Refer to the MCM documentation for information on configuring the gatekeeper.

The following topics cover Cisco CallManager configuration for associating Cisco CallManager as a VoIP gateway to the gatekeeper:

- [Adding a Gatekeeper, page 40-2](#)
- [Deleting the Gatekeeper, page 40-3](#)
- [Modifying the Gatekeeper, page 40-3](#)
- [Resetting the Gatekeeper, page 40-4](#)
- [Gatekeeper Configuration Settings, page 40-6](#)

The following topics contain additional information related to gatekeepers:

- [Gatekeeper](#), *Cisco CallManager System Guide*
- *Cisco IP Telephony Network Design Guide*
- Cisco IOS Multimedia Conference Manager (Command Reference) documentation

Adding a Gatekeeper

Perform the following procedure to add a gatekeeper device.

**Note**

You can configure only one primary gatekeeper device per Cisco CallManager cluster.

Procedure

Step 1 Choose **Device > Gatekeeper**.

Step 2 Enter the appropriate settings as described in [Table 40-1](#).

Step 3 Click **Insert** to add the new gatekeeper.

The page updates, and the name of the new gatekeeper displays in the Gatekeepers list.

Related Topics

- [Deleting the Gatekeeper](#), page 40-3
- [Modifying the Gatekeeper](#), page 40-3
- [Resetting the Gatekeeper](#), page 40-4
- [Gatekeeper Configuration Settings](#), page 40-6

Deleting the Gatekeeper

Perform the following steps to delete the gatekeeper.

Procedure

- Step 1** Choose **Device > Gatekeeper**.
- The Gatekeeper Configuration page displays, with the current gatekeeper automatically selected.
- Step 2** Click the **Delete** button.
- A confirmation dialog box displays.
- Step 3** Click **OK** to delete the gatekeeper.
-

Related Topics

- [Adding a Gatekeeper, page 40-2](#)
- [Modifying the Gatekeeper, page 40-3](#)
- [Resetting the Gatekeeper, page 40-4](#)
- [Gatekeeper Configuration Settings, page 40-6](#)

Modifying the Gatekeeper

Perform the following steps to modify gatekeeper settings:

Procedure

- Step 1** Choose **Device > Gatekeeper**.
- The Gatekeeper Configuration page displays, with the current gatekeeper automatically selected.
- Step 2** Update the appropriate settings as described in [Table 40-1](#).

Step 3 Click **Update** to save the changes.

The page refreshes to display the new settings.

Step 4 Reset the gatekeeper and the AnonymousDevice as needed to activate the changes. See the “[Resetting the Gatekeeper](#)” section on page 40-4 for details.

Related Topics

- [Adding a Gatekeeper, page 40-2](#)
- [Deleting the Gatekeeper, page 40-3](#)
- [Resetting the Gatekeeper, page 40-4](#)
- [Gatekeeper Configuration Settings, page 40-6](#)

Resetting the Gatekeeper

Perform the following procedure to reset the gatekeeper and the AnonymousDevice.



Caution

Resetting devices can cause them to drop calls.

Procedure

Step 1 Choose **Device > Gatekeeper**.

The Gatekeeper Configuration pane displays, with the current gatekeeper automatically selected.

Step 2 If you changed any of the settings for the Gatekeeper Device, click **Reset Gatekeeper**. Otherwise, skip to [Step 4](#).

The Reset Device dialog displays.

Step 3 Click one of the following choices:

- **Restart**—Restarts the gatekeeper device without shutting it down first.
- **Reset**—Shuts down, then restarts the internal gatekeeper device. The Cisco CallManager cluster unregisters (URQ) and then reregisters (RRQ) with the gatekeeper.
- **Close**—Closes the Reset Device dialog without performing any action.

Step 4 If you changed any of the settings for the Anonymous Calls Device, click **Reset Gateway**. Otherwise, skip the rest of this procedure.

The Reset Device dialog displays.

Step 5 Click one of the following choices:

- **Restart**—Restarts the AnonymousDevice without shutting it down first.
 - **Reset**—Shuts down, then restarts the AnonymousDevice.
 - **Close**—Closes the Reset Device dialog without performing any action.
-

Related Topics

- [Adding a Gatekeeper, page 40-2](#)
- [Deleting the Gatekeeper, page 40-3](#)
- [Modifying the Gatekeeper, page 40-3](#)
- [Gatekeeper Configuration Settings, page 40-6](#)

Gatekeeper Configuration Settings

Table 40-1 describes the gatekeeper configuration settings.

Table 40-1 Gatekeeper Configuration Settings

Field	Description
Gatekeeper Name	<p>Enter the IP address or DNS name of the gatekeeper.</p> <p>You can register only one gatekeeper per Cisco CallManager cluster.</p>
Description	Enter a descriptive name for the gatekeeper.
Registration Request Time to Live	<p>Do not change this value unless instructed to do so by a Cisco TAC engineer. Enter the time in seconds. The default value is 60 seconds.</p> <p>The Registration Request Time to Live field indicates the length of time that the gatekeeper considers a registration request (RRQ) valid. The system must send a keepalive RRQ to the gatekeeper before the RRQ Time to Live expires.</p> <p>Cisco CallManager sends an RRQ to the gatekeeper to register and subsequently to maintain a connection with the gatekeeper. The gatekeeper may confirm (RCF) or deny (RRJ) the request.</p>
Registration Retry Timer	<p>Do not change this value unless instructed to do so by a Cisco TAC engineer. Enter the time in seconds. The default value is 300 seconds.</p> <p>The Registration Retry Timer field indicates the length of time Cisco CallManager waits before retrying gatekeeper registration after a failed registration attempt.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Terminal Type	<p>Use the Terminal Type field to designate the type for all devices controlled by this gatekeeper.</p> <ul style="list-style-type: none"> • Choose Gateway if all gatekeeper-controlled devices are gateways (including intercluster trunks). • Choose Terminal if all gatekeeper-controlled devices are H.323 clients (for example, Microsoft NetMeeting devices). <p>Make sure all gatekeeper-controlled devices are of the same type.</p> <p>Set this field to Gateway for normal gatekeeper call admission control.</p>
Device Pool	<p>Choose the appropriate device pool for the gatekeeper. A device pool specifies the collection of properties for the devices in that pool, such as Cisco CallManager group, date/time group, region, media resource group list, and calling search space for auto-registration.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Technology Prefix	<p>Use this optional field to eliminate the need for entering the IP address of every Cisco CallManager when configuring the gw-type-prefix on the gatekeeper:</p> <ul style="list-style-type: none"> • If you leave this field blank (the default setting), you must specify the IP address of each Cisco CallManager that can register with the gatekeeper when you enter the gw-type-prefix command on the gatekeeper. • When you use this field, make sure the value entered here exactly matches the <i>type-prefix</i> value specified with the gw-type-prefix command on the gatekeeper. <p>For example, if you leave this field blank and you have two Cisco CallManagers with IP addresses of 10.1.1.2 and 11.1.1.3, enter the following gw-type-prefix command on the gatekeeper:</p> <pre>gw-type-prefix 1#* default-technology gw ip 10.1.1.2 gw ip 11.1.1.3</pre> <p>If you enter 1#* in this field, enter the following gw-type-prefix command on the gatekeeper:</p> <pre>gw-type-prefix 1#* default-technology</pre>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Zone	<p>Use this optional field to request a specific zone on the gatekeeper with which Cisco CallManager will register. The zone specifies the total bandwidth available for calls between this zone and another zone.</p> <ul style="list-style-type: none">• If you do not enter a value in this field, the zone subnet command on the gatekeeper determines the zone with which Cisco CallManager registers. Cisco recommends the default setting for most configurations.• If you want Cisco CallManager to register with a specific zone on the gatekeeper, enter the value in this field that exactly matches the zone name configured on the gatekeeper with the zone command. Specifying a zone name in this field eliminates the need for a zone subnet command for each Cisco CallManager registered with the gatekeeper. <p>Refer to the command reference documentation for your gatekeeper for more information.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Allow Anonymous Calls	<p>Check this check box to enable Cisco CallManager to send calls to and receive calls from remote anonymous devices controlled by this gatekeeper. An anonymous device is one that you have not explicitly configured in the Cisco CallManager database.</p> <p>This setting eliminates the need for you to configure a separate H.323 device in the local Cisco CallManager cluster for each remote Cisco CallManager or H.323 gateway that it can call over the IP WAN.</p> <p>When you enable Allow Anonymous Calls, you must also fill in the configuration settings listed subsequently in this table.</p> <p>If you uncheck this check box, you must configure a separate H.323 gateway for each remote device that the local Cisco CallManager can call over the IP WAN.</p> <p>The default setting disables Allow Anonymous Calls.</p> <p>When you enable Allow Anonymous Calls and fill in the remaining fields in this table, you essentially create a device (an intercluster trunk or gateway) named AnonymousDevice that can send calls to and receive calls from any remote Cisco CallManager controlled by the gatekeeper. The AnonymousDevice gets its device characteristics (such as Cisco CallManager group, region, and so on) from the gatekeeper device pool.</p>
Device Protocol	<p>Choose the appropriate protocol for the AnonymousDevice. Choose Inter-Cluster Trunk if the AnonymousDevice is an intercluster trunk (Cisco CallManager), or choose H.225 if the AnonymousDevice is a gateway.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Calling Search Space	Choose the appropriate calling search space for the AnonymousDevice. The calling search space specifies the collection of route partitions searched to determine how to route a collected (originating) number.
Location	Choose the appropriate location for the AnonymousDevice. The location specifies the total bandwidth available for calls between this location and the central location, or hub. A location setting of None specifies unlimited available bandwidth.
Caller ID DN	<p>Enter the pattern, from 0 to 24 digits, that you want to use to format the caller ID on outbound calls from the AnonymousDevice.</p> <p>For example, in North America:</p> <ul style="list-style-type: none"> • 555XXXX = Variable Caller ID, where X represents an extension number. The Central Office (CO) appends the number with the area code if you do not specify it. • 5555000 = Fixed Caller ID. Use this form when you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Calling Party Selection	<p>Choose the directory number sent on an outbound call on a gateway.</p> <p>The following options specify which directory number is sent:</p> <ul style="list-style-type: none"> • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call.

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Presentation Bit	<p>Choose whether the CO transmits or blocks caller ID.</p> <p>Choose Allowed if you want the CO to send caller ID.</p> <p>Choose Restricted if you do not want the CO to send caller ID.</p>
Display IE Delivery	<p>Check this check box to enable delivery of the display information element (IE) in SETUP and CONNECT messages for the calling and called party name delivery service.</p> <p>The default setting leaves this check box unchecked.</p>
Media Termination Point Required	<p>Indicate whether a media termination point (MTP) is used to implement features that H.323 does not support (such as hold and transfer). You must use an MTP if you need a transcoder.</p> <p>Check the Media Termination Point Required check box if you want to use a media termination point to implement features. Uncheck the Media Termination Point Required check box if you do not want to use a media termination point to implement features.</p> <p>Use this check box only for H.323 clients and those H.323 devices that do not support the H.245 empty capabilities set.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Num Digits	<p>Use this field only if you check the Sig Digits check box. Choose the number of significant digits, from 0 to 32, to collect for incoming calls to the AnonymousDevice.</p> <p>Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>This field processes incoming calls and indicates the number of digits starting from the last digit of the called number used to route calls coming into the H.323 device. See Prefix DN and Sig Digits.</p>
Sig Digits	<p>Check or uncheck this box depending on whether you want to collect significant digits. Choose significant digits to represent the number of final digits retained on inbound calls. A trunk with significant digits enabled truncates all but the final few digits of the address provided by an inbound call.</p> <p>If this box is unchecked, Cisco CallManager does not truncate the inbound number.</p> <p>If this box is checked, you also need to choose the number of significant digits to collect. (See Num Digits.)</p>
Prefix DN	<p>Enter the prefix digits that are appended to the called party number on incoming calls.</p> <p>Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.</p>

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Run H225D On Every Node	<p>This setting determines which Cisco CallManager in the cluster establishes the H.225 session. The default setting (checked) establishes the H.225 session on the Cisco CallManager where the calling device has registered. For most systems, the default setting works best.</p> <p>Unchecking this check box establishes the H.225 session on the controlling Cisco CallManager in the same Cisco CallManager group and device pool as the H.225 gateway. Do not uncheck this box unless advised to do so by Cisco Technical Assistance Center (TAC).</p>
Called party IE number type unknown	<p>Choose the format for the type of number in called party directory numbers.</p> <p>Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—Cisco CallManager sets the directory number type. • Unknown—The dialing plan is unknown. • National—Use when you are dialing within the dialing plan for your country. • International—Use when you are dialing outside the dialing plan for your country.

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Calling party IE number type unknown	<p>Choose the format for the type of number in calling party directory numbers.</p> <p>Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—Cisco CallManager sets the directory number type. • Unknown—The dialing plan is unknown. • National—Use when you are dialing within the dialing plan for your country. • International—Use when you are dialing outside the dialing plan for your country.

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Called Numbering Plan	<p>Choose the format for the numbering plan in called party directory numbers.</p> <p>Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—Cisco CallManager sets the Numbering Plan in the directory number. • ISDN—Use when you are dialing outside the dialing plan for your country. • National Standard—Use when you are dialing within the dialing plan for your country. • Private—Use when you are dialing within a private network. • Unknown—The dialing plan is unknown.

Table 40-1 Gatekeeper Configuration Settings (continued)

Field	Description
Calling Numbering Plan	<p>Choose the format for the numbering plan in calling party directory numbers.</p> <p>Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—Cisco CallManager sets the Numbering Plan in the directory number. • ISDN—Use when you are dialing outside the dialing plan for your country. • National Standard—Use when you are dialing within the dialing plan for your country. • Private—Use when you are dialing within a private network. • Unknown—The dialing plan is unknown.

Related Topics

- [Adding a Gatekeeper, page 40-2](#)
- [Deleting the Gatekeeper, page 40-3](#)
- [Resetting the Gatekeeper, page 40-4](#)
- [Modifying the Gatekeeper, page 40-3](#)



Gateway Configuration

Cisco IP telephony gateways enable Cisco CallManager to communicate with non-IP telecommunications devices. Cisco CallManager supports several types of gateways as described in the *Cisco CallManager System Guide*.

These sections provide information about using Cisco CallManager for working with and configuring Cisco gateways.

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Gateway Configuration Settings, page 41-15](#)
- [Port Configuration Settings, page 41-45](#)
- [Modifying Gateways and Ports, page 41-65](#)
- [Finding Specific Gateways, page 41-56](#)
- [Understanding Voice Gateways, *Cisco CallManager System Guide*](#)

Adding Gateways to Cisco CallManager

To enable Cisco CallManager to manage IP telephony gateways in your network, you must first add each gateway to the Cisco CallManager configuration database. The procedures, web panes, and configuration settings for adding a gateway vary according to the model of gateway that you are adding.

The following procedure describes how to add a new gateway in Cisco CallManager.

Procedure

- Step 1** Choose **Device > Gateway** to display the Find/List Gateways pane.
- Step 2** Click the **Add a New Gateway** link. The Add a New Gateway pane displays.
- Step 3** Choose the type of gateway you want to add from the Gateway type drop-down list box. The Device Protocol field may be automatically populated depending on which gateway type you choose.
- Step 4** Click **Next**.
- Step 5** In the following table, click the specific procedure for the type of gateway you are configuring. Once you are in the correct procedure, start with the step in which you enter the appropriate settings for that particular gateway type.

Table 41-1 Gateways

Type of Gateway	Procedure to Add
Cisco VG200 Cisco IOS 362x, 364x, 366x 26xx gateways Cisco Catalyst 4000 Access Gateway Module Cisco Catalyst 4224 Voice Gateway Switch Cisco IAD2400	Adding a Cisco IOS MGCP Gateway, page 41-3
Cisco Catalyst 6000 E1 VoIP Gateway Cisco Catalyst 6000 T1 VoIP Gateway Cisco DT-24+ or DE-30+ Digital Access Trunk Gateway	Adding a Non-IOS MGCP Gateway, page 41-10
Other Cisco IOS gateway configured in H.323 mode or H.323 intercluster trunk.	Adding a Cisco IOS H.323 Gateway or Intercluster Trunk, page 41-12
Cisco Catalyst 6000 24-Port FXS Gateway Analog Access AS-2, AS-4, AS-8, AT-2, AT-4, AT-8	Adding an Analog Access Gateway and Ports, page 41-13

Adding a Cisco IOS MGCP Gateway

Use the following procedure to add and configure a Cisco IOS MGCP gateway to Cisco CallManager. The following Cisco IOS gateways support MGCP:

- CiscoVG200 Cisco IP Telephony Voice Gateway
- Cisco IOS 362x, 364x, 366x gateways
- Cisco IOS 26xx gateways

- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Cisco IAD2400 gateways

Before You Begin

Before configuring a Cisco IOS MGCP gateway for use with Cisco CallManager, you must configure the gateway using the Cisco IOS command-line interface (CLI). For procedures and commands required to perform this configuration, refer to the configuration documentation supplied with the gateway.

Procedure

Step 1 Choose **Device > Add a New Device**.

The Add a New Device pane appears.

Step 2 From the Device type drop-down list box, choose **Gateway** and click **Next**.

The Add a New Gateway pane appears.

Step 3 From the Gateway Type drop-down list box, choose one of the following gateways:

- Cisco Voice Gateway 200 (VG200)
- Cisco IOS 362x, 364x, 366x gateways
- Cisco IOS 26xx gateways
- Cisco Catalyst 4000 Access Gateway Module
- Cisco Catalyst 4224 Voice Gateway Switch
- Cisco IAD2400 gateway



Note The Cisco Catalyst 6000 gateways also support MGCP, but are configured differently.

When you choose one of the preceding gateways, the Device Protocol drop-down list displays “Not Required for MGCP.”

Cisco IOS MGCP gateways support different device protocols for interfacing to the PSTN or other non-IP devices, depending on the gateway model and the type of installed network modules and voice interface cards (VICs). A subsequent web pane provides configuration for these interfaces.

- Step 4** Click **Next**. The MGCP Configuration pane displays.
- Step 5** Enter the appropriate settings and choose the type of network modules installed in each slot, as described in the “[MGCP Gateway Configuration Settings](#)” section on page 41-16, including any product-specific configuration settings.
- Step 6** Click **Insert**.
- The MGCP Gateway Configuration pane updates and displays drop-down list boxes with options for configuring the type of voice interface cards (VICs) in each sub-unit of each network module.
- The available choices depend on the type of network modules configured in the MGCP Configuration pane.
- Step 7** From the drop-down list boxes, choose the type of VICs installed in each subunit and click **Update**.
- Available VIC types include VIC-2FXS, VIC-2FXO, VWIC-1MFT-T1, VWIC-2MFT-T1, VWIC-1MFT-E1, VWIC-2MFT-E1, and WS-U4604-8FXS.
- The pane updates to add links for configuring endpoint information and ports for the type of VICs chosen.
- Step 8** Click an endpoint identifier (for example, 1/0/0) to configure device protocol information and add ports for the types of VICs installed.
- For detailed instructions, see the following procedures:
- [Adding FXS Ports to an MGCP Gateway, page 41-6](#)
 - [Adding FXO Ports to an MGCP Gateway, page 41-8](#)
 - [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
 - [Adding a T1 PRI or E1 PRI Port to an MGCP Gateway, page 41-10](#)
- Step 9** Reset the gateway to apply the changes.
- Step 10** Continue configuring endpoint information and ports as needed.
- Step 11** After you finish configuring endpoint and adding ports, you need to add the MGCP gateway device to a route group/route list or assign a route pattern to the gateway for calls to be routed to the gateway.

**Note**

You only need to add the MGCP gateway to a route pattern for outbound trunk calling.

Adding Ports to an MGCP Gateway

The device protocols and port types that can be configured on MGCP gateways vary by the type of installed voice interface cards. This section contains the following procedures:

- [Adding FXS Ports to an MGCP Gateway, page 41-6](#)
- [Adding FXO Ports to an MGCP Gateway, page 41-8](#)
- [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
- [Adding a T1 PRI or E1 PRI Port to an MGCP Gateway, page 41-10](#)

Adding FXS Ports to an MGCP Gateway

You can use Foreign Exchange Station (FXS) ports to connect to any POTS device. Use this procedure to configure FXS ports on an MGCP gateway.

Before You Begin

You must add an MGCP gateway before configuring ports. See the [“Adding a Cisco IOS MGCP Gateway” section on page 41-3](#) for instructions.

Procedure

-
- Step 1** Choose **Device > Gateway** to display the Find/List Gateways pane, or skip to [Step 4](#) if you have already located the MGCP gateway to which you want to add FXS ports.
 - Step 2** Enter the appropriate search criteria to locate the MGCP gateway to which you want to add FXS ports.
 - Step 3** Click the name of the desired gateway to display its MGCP configuration settings and endpoint identifiers.

Step 4 From the MGCP Configuration pane, click the endpoint identifier for the FXS VIC you want to configure.

The pane refreshes and displays the Gateway Configuration pane.

Step 5 Enter the appropriate **Gateway Configuration** and **Port Information** settings. Refer to the following sections for details about these fields:

- [FXS/FXO Gateway Configuration Settings, page 41-18](#)
- [POTS Port Configuration Settings, page 41-46](#)

Step 6 Click **Insert**.



Note Once you insert a POTS port, the pane refreshes and displays the POTS port in the list on the left side of the pane. An **Add DN** link displays to the right of the new port.

Step 7 Click **Add DN** to add directory numbers to the POTS port, or, if you configured another type of port, go to [Step 8](#).



Note Refer to the [“Adding a Directory Number” section on page 42-28](#) and [Directory Number Configuration Settings, page 32](#) for information about adding and configuring DNs.

Step 8 Reset the gateway to apply the changes.

Step 9 To return to the main MGCP gateway configuration pane for the gateway to which you just added the ports, click **Back to MGCP Configuration**.

Step 10 Repeat [Step 4](#) through [Step 9](#) to add additional FXS ports.

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Adding a Cisco IOS MGCP Gateway, page 41-3](#)
- [Port Configuration Settings, page 41-45](#)

Adding FXO Ports to an MGCP Gateway

You can use Foreign Exchange Office (FXO) ports for connecting to a central office or PBX. Use this procedure to add and configure FXO ports for loop start or ground start on an MGCP gateway.

**Note**

Cisco CallManager assumes all loop-start trunks lack positive disconnect supervision. Configure trunks with positive disconnect supervision as ground start, so that active calls can be maintained during a Cisco CallManager server failover.

Before You Begin

You must add an MGCP gateway before configuring ports. See the [“Adding a Cisco IOS MGCP Gateway”](#) section on page 41-3 for instructions.

Procedure

-
- Step 1** Choose **Device > Gateway** to display the Find/List Gateways pane, or skip to [Step 4](#) if you have already located the MGCP gateway to which you want to add FXO ports.
 - Step 2** Enter the appropriate search criteria to locate the MGCP gateway to which you want to add FXO ports and click **Find**. The search results pane displays.
 - Step 3** Click on the name of the desired gateway to display its MGCP configuration settings and endpoint identifiers.
 - Step 4** From the MGCP Configuration pane, click the endpoint identifiers of the FXO port you want to configure.
 - Step 5** From the Port Type drop-down list box, choose either **Ground Start** or **Loop Start**.
 - Step 6** Enter the appropriate **Gateway Configuration** and **Port Information** settings as described in the following sections:
 - [“FXS/FXO Gateway Configuration Settings”](#) section on page 41-18
 - [“Ground Start Port Configuration Settings”](#) section on page 41-51.
 - [“Loop Start Port Configuration Settings”](#) section on page 41-49
 - Step 7** Click **Insert**.

- Step 8** To return to the main MGCP gateway configuration pane for the gateway to which you just added the ports, click **Back to MGCP Configuration**.
- Step 9** Repeat [Step 4](#) through [Step 7](#) to add more FXO ports.
- Step 10** Reset the gateway to apply the changes.
-

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Port Configuration Settings, page 41-45](#)

Adding T1-CAS Ports to an MGCP Gateway

- Step 1** Choose **Device > Gateway** to display the Find/List Gateways pane, or skip to
- Step 2** Enter the appropriate search criteria to locate the MGCP gateway to which you want to add a T1-CAS port.
- Step 3** Click the name of the desired gateway to display its MGCP configuration settings and endpoint identifiers.
- Step 4** From the MGCP Configuration pane, click the endpoint identifier of the T1-CAS port you want to configure.
- Step 5** From the drop-down list box, choose the **T1-CAS** protocol.
- Step 6** Enter the appropriate Gateway Configuration settings. See the “[T1-CAS Gateway Configuration Settings](#)” section on [page 41-33](#) for details.
- Step 7** Click **Insert**.
- Step 8** Click **Add New Port**. A port configuration dialog opens in a separate pane.
- Step 9** Choose a port type from the Port Type drop-down list box. See the “[Port Configuration Settings](#)” section on [page 41-45](#) for the appropriate settings for the port type you choose.
- Step 10** Click **Insert** or **Insert and Close**.
- Step 11** Reset the gateway to apply the changes.
-

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Port Configuration Settings, page 41-45](#)

Adding a T1 PRI or E1 PRI Port to an MGCP Gateway

- Step 1** Choose **Device > Gateway** to display the Find/List Gateways pane, or skip to [Step 4](#) if you have already located the MGCP gateway to which you want to add a port.
- Step 2** Enter the appropriate search criteria to locate the MGCP gateway to which you want to add a T1 PRI or E1 PRI port.
- Step 3** Click the name of the desired gateway in the list to display the configuration information for the selected gateway.
- Step 4** From the MGCP Configuration pane, click the endpoint identifier of the T1 or E1 PRI port you want to configure.
- Step 5** Configure the T1 PRI or E1 PRI device protocol settings. See the [“E1/T1 PRI Gateway Configuration Settings” section on page 41-21](#) for detailed field descriptions.
- Step 6** Click **Insert**.
- Step 7** Reset the gateway to apply the changes.
-

Related Topics

- [Adding a Cisco IOS MGCP Gateway, page 41-3](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [E1/T1 PRI Gateway Configuration Settings, page 41-21](#)

Adding a Non-IOS MGCP Gateway

Use the following procedure to add the following non-IOS Cisco MGCP gateways to Cisco CallManager:

- Cisco DT-24+ Gateway
- Cisco DE-30+ Gateway

- Cisco Catalyst 6000 E1 VoIP Gateway
- Cisco Catalyst 6000 T1 VoIP Gateway

Procedure

- Step 1** Choose **Device > Add New Device**.
- The Add a New Device pane appears.
- Step 2** From the Device type drop-down list box, choose **Gateway**.
- From the Gateway Type drop-down list box, choose one of the following digital gateways:
- Cisco DT-24+ Gateway
 - Cisco DE-30+ Gateway
 - Cisco Catalyst 6000 E1 VoIP Gateway
 - Cisco Catalyst 6000 T1 VoIP Gateway
- Step 3** From the drop-down list box, choose the appropriate device protocol for the type of interfaces you are configuring on the gateway. The available choices vary according to gateway model:
- DT-24+ or Cisco Catalyst 6000 T1 VoIP Gateway—Choose either Digital Access PRI (T1 PRI) or Digital Access T1 (T1-CAS)
 - DE-30+ or Cisco Catalyst E1 VoIP Gateway—Choose Digital PRI (E1 PRI).
- Step 4** Click **Next**.
- The Gateway Configuration pane displays.
- Step 5** Enter the appropriate settings, depending on whether you are configuring a Digital T1 or E1 PRI interface or a Digital T1-CAS interface as described in following sections:
- [“E1/T1 PRI Gateway Configuration Settings” section on page 41-21.](#)
 - [“T1-CAS Gateway Configuration Settings” section on page 41-33](#)
- Step 6** Click **Insert**.
- Step 7** If you are configuring a T1-CAS interface on a DT-24+ or Catalyst 6000 T1 VoIP Gateway, click **Add a New Port** to configure ports.

See the “Adding T1-CAS Ports to an MGCP Gateway” section on page 41-9 and begin with [Step 9](#).

Step 8 Reset the gateway to apply the changes.

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [E1/T1 PRI Gateway Configuration Settings, page 41-21](#)
- [T1-CAS Gateway Configuration Settings, page 41-33](#)

Adding a Cisco IOS H.323 Gateway or Intercluster Trunk

Follow these procedures to add a Cisco IOS H.323 gateway or intercluster trunk to Cisco CallManager.

Before You Begin

Before configuring a Cisco IOS H.323 gateway for use with Cisco CallManager, you must configure the gateway using the Cisco IOS command-line interface (CLI). Compared to MGCP gateways, H.323 gateways require more configuration on the gateway because the gateway must maintain the dial plan and route pattern. For procedures and commands required to perform this configuration, refer to the configuration documentation supplied with the gateway.

For information about configuring intercluster trunks, refer to the *Cisco IP Telephone Network Design Guide*.

Procedure

Step 1 Choose **Device > Add a New Device**.

The Add a New Device pane appears.

Step 2 From the Device type drop-down list box, choose **Gateway**.

Step 3 Click **Next**.

The Add a New Gateway pane appears.

Step 4 From the Gateway Type drop-down list box, choose **H.323 Gateway**.

- Step 5** From the Device Protocol drop-down list box, choose one of the two available device protocols:
- **H.225** (default)—Choose H.323 if you are configuring a Cisco IOS gateway in H.323 mode.
 - **Intercluster Trunk**—An intercluster trunk provides a virtual H.323 gateway that is used to interlink Cisco CallManagers in different clusters.
- Step 6** Click **Next**.
- Step 7** Enter the appropriate settings as described in “[H.323 Gateway and Intercluster Trunk Configuration Settings](#)” section on page 41-35.
- Step 8** Click **Insert**.
- Step 9** Reset the gateway to apply the changes.
-

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [H.323 Gateway and Intercluster Trunk Configuration Settings, page 41-35](#)

Adding an Analog Access Gateway and Ports

Use the procedure in this section to add and configure ports for the following Cisco analog access gateways:

- Cisco AS-2, AS-4, and AS-8 Gateways
- Cisco AT-2, AT-4, and AT-8 Gateways
- Cisco Catalyst 6000 24 Port FXS Gateway

Procedure

- Step 1** Choose **Device > Add a New Device**.
- The Add a New Device pane appears.
- Step 2** From the Device type drop-down list box, choose **Gateway**.
- Step 3** Click **Next**.
- The Add a New Gateway pane appears.

- Step 4** From the Gateway type drop-down list box, choose a supported analog gateway:
- Cisco AS-2, AS-4, and AS-8 Gateways
 - Cisco AT-2, AT-4, and AT-8 Gateways
 - Cisco Catalyst 6000 24 Port FXS Gateway

When you choose an analog gateway, Cisco CallManager automatically chooses the appropriate device protocol for the gateway (in this case, Analog Access).

- Step 5** Click **Next**.

The Gateway Configuration pane appears.

- Step 6** Enter the appropriate settings, as described in the [“Analog Access Gateway Configuration Settings”](#) section on page 41-44.

- Step 7** Click **Insert**.

- Step 8** Click **Add New Port**.

A port configuration dialog opens in a separate pane.

- Step 9** From the drop-down list box, choose **POTS** or **Loop Start** as the port type depending on the gateway model you are configuring.

- Step 10** Enter the appropriate port configuration settings as described in the following sections:

- [POTS Port Configuration Settings, page 41-46](#)
- [Loop Start Port Configuration Settings, page 41-49](#)

- Step 11** Click **Insert** or **Insert and Close**.

If you have inserted POTS ports, the pane refreshes and displays the POTS port in the list on the left side of the pane. An **Add DN** link displays to the right of the new port.

- Step 12** Click **Add DN** to add a directory numbers to an FXS port.

See the [“Adding a Directory Number”](#) section on page 42-28 and [“Phone Configuration Settings”](#) section on page 42-12 for information about adding and configuring directory numbers.

- Step 13** Reset the gateway to apply the changes.
-

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Analog Access Gateway Configuration Settings, page 41-44](#)

Gateway Configuration Settings

See the following sections for tables that list detailed descriptions for all gateway configuration fields:

- [MGCP Gateway Configuration Settings, page 41-16](#)
- [FXS/FXO Gateway Configuration Settings, page 41-18](#)
- [E1/T1 PRI Gateway Configuration Settings, page 41-21](#)
- [T1-CAS Gateway Configuration Settings, page 41-33](#)
- [H.323 Gateway and Intercluster Trunk Configuration Settings, page 41-35](#)
- [Analog Access Gateway Configuration Settings, page 41-44](#)

For detailed information about port configuration settings, see the “[Port Configuration Settings](#)” section on page 41-45.

MGCP Gateway Configuration Settings

Table 41-2 provides detailed descriptions for MGCP gateway configuration settings.

Table 41-2 MGCP Gateway Configuration Settings

Field	Description
MGCP Domain Name	<p>Enter a name that identifies the Cisco MGCP gateway.</p> <p>Use the Domain Name Service (DNS) host name if it is configured to resolve correctly; otherwise, use the host name as defined on the Cisco MGCP gateway.</p> <p>If you are using the host name as it is configured on the IOS gateway, the name you enter here must match exactly.</p> <p>For example, if the hostname is configured on the gateway to resolve to vg200-1 and the IP domain name is not configured, enter the hostname in this field (in this case, vg200-1).</p> <p>If the hostname is configured on the gateway as vg200-1 and the IP domain name is configured on the gateway as cisco.com, enter vg200-1.cisco.com in this field.</p>
Description	Enter a description that clarifies the purpose of the device.
Cisco CallManager Group	<p>From the drop-down list box, choose a Cisco CallManager redundancy group.</p> <p>A Cisco CallManager redundancy group includes a prioritized list of up to three Cisco CallManagers. The first Cisco CallManager in the list serves as the primary Cisco CallManager. If the primary Cisco CallManager is not available or fails, the gateway attempts to connect with the next Cisco CallManager in the list, and so on.</p>

Table 41-2 MGCP Gateway Configuration Settings (continued)

Field	Description
Module in Slot 0 Module in Slot 1 Module in Slot 2 Module in Slot 3 (and so on)	<p>For each available slot on the selected MGCP gateway, choose the type of network module installed; for example:</p> <ul style="list-style-type: none"> • NM-1V—Has one voice interface card (VIC) in Sub-Unit 0 for FXS or FXO. • NM-2V—Has two VICs, one in Sub-Unit 0 and one in Sub-Unit 1 for either FXS or FXO. • NM-HDV—Has one VIC in Sub-Unit 0 for either T1-CAS or T1-PRI, or E1-PRI. • None—No network modules installed. <p>The correct number of slots displays for each model of MGCP gateway.</p> <p>Note The VG200 gateway has only one slot.</p>
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a pop up pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Adding a Cisco IOS MGCP Gateway, page 41-3](#)
- [Adding a Non-IOS MGCP Gateway, page 41-10](#)
- [Updating Gateways and Ports, page 41-68](#)

FXS/FXO Gateway Configuration Settings

[Table 41-3](#) provides detailed descriptions for FXS/FXO gateway configuration settings.

**Note**

For the VG200 gateway, not all switch emulation types support the network side. Depending on how you configure the gateway switch type, you may or may not be able to set network side.

Table 41-3 FXS/FXO Gateway Configuration Settings

Field	Description
Description	<p>This display-only field contains a string generated by Cisco CallManager that uniquely identifies the analog MGCP description.</p> <p>For example: AALN/S0/SUI/1@domain.com</p> <p>You can edit this field.</p>
Device Pool	<p>From the drop-down list box, choose the appropriate device pool.</p> <p>The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto registration of devices.</p>

Table 41-3 FXS/FXO Gateway Configuration Settings (continued)

Field	Description
Calling Search Space	Choose the appropriate calling search space. A calling search space comprises a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource List.
Network Audio Hold Source	This audio source plays when the network initiates a hold action.
User Audio Hold Source	This field specifies an audio source played when a user initiates a hold action.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth consumed by this device.
Prefix DN	Enter the prefix digits that are appended to the digits this trunk receives on incoming calls. The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.

Table 41-3 FXS/FXO Gateway Configuration Settings (continued)

Field	Description
Num Digits	<p>Enter the number of significant digits to collect, from 0 to 32.</p> <p>Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number used to route calls coming into the PRI span. See Prefix DN.</p>
Expected Digits	<p>Enter the number of digits expected on the inbound side of the trunk. Leave zero as the default value if you are unsure for this rarely-used field.</p>
Port Direction	<p>Choose the direction of calls passing through this port:</p> <ul style="list-style-type: none"> • Inbound—Use for incoming calls only. • Outbound—Use for outgoing calls. • Bothways—Use for inbound and outbound calls (default).
Attendant DN	<p>Enter the directory number to which you want incoming calls routed; for example, zero or a directory number for an attendant.</p>

Related Topics

- [Adding FXS Ports to an MGCP Gateway, page 41-6](#)
- [Adding FXO Ports to an MGCP Gateway, page 41-8](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Adding a Cisco IOS MGCP Gateway, page 41-3](#)
- [Adding a Non-IOS MGCP Gateway, page 41-10](#)
- [Updating Gateways and Ports, page 41-68](#)

E1/T1 PRI Gateway Configuration Settings

Table 41-4 provides detailed descriptions for E1/T1 PRI configuration settings.

Table 41-4 E1/T1 PRI Configuration Settings

Field	Description
MAC Address (non-IOS gateway)	Enter the appropriate MAC address. The MAC address identifies hardware-based telephones and device name. You must enter a 12-hexadecimal character value.
Domain Name (MGCP gateways)	For MGCP gateways, this display-only field contains a string generated by Cisco CallManager that uniquely identifies the MGCP endpoint. For example: S1/DS1-0@VG200-2 S1 indicates slot 1, DS1-0 designates the digital interface, and @VG200-2 designates the MGCP domain name.
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource List.
Network Hold Audio Source	This audio source plays when the network initiates a hold action.
User Hold Audio Source	This audio source plays when a user initiates a hold action.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Calling Search Space	Choose the appropriate calling search space. A calling search space designates a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth consumed by this device.
Load Information	<p>Enter the appropriate firmware load information for the gateway.</p> <p>The value you enter here overrides the default firmware load for this type of gateway.</p>
Channel Selection Order	<p>Choose the order in which channels or ports are enabled from first (lowest number port) to last (highest number port), or from last to first.</p> <p>Valid entries include TOP_DOWN (first to last) or BOTTOM_UP (last to first). If you are not sure which port order to use, choose TOP_DOWN.</p>
Protocol Side	<p>Choose the appropriate protocol side. This setting specifies whether the gateway connects to a Central Office/Network device or to a User device.</p> <p>Make sure the two ends of the PRI connection use opposite settings. For example, if you connect to a PBX and the PBX uses User as its protocol side, choose Network for this device. Typically, use User for this option for central office connections.</p>

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Caller ID DN	<p>Enter the pattern you want to use for caller ID, from 0 to 24 digits.</p> <p>For example, in North America:</p> <ul style="list-style-type: none"> • 555XXXX = Variable caller ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it. • 5555000 = Fixed caller ID, where you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Calling Party Selection	<p>Any outbound call on a gateway can send directory number information. Choose which directory number is sent:</p> <ul style="list-style-type: none"> • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call.
Channel IE Type	<p>Choose one of the following values to specify whether channel selection is presented as a channel map or a slot map.</p> <ul style="list-style-type: none"> • Number—B-channel usage is always a channel map format. • Slotmap—B-channel usage is always a slotmap format • Use Number When 1B—Channel usage is a channel map for one B-channel but is a slot map if more than one B-channel exists.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Interface Identifier Present	<p>Check the check box to indicate that an interface identifier is present. By default, the Cisco CallManager leaves the check box unchecked.</p> <p>This setting only applies to the DMS100 protocol for digital access gateways in the Channel Identification information element (IE) of the SETUP, CALL PROCEEDING, ALERTING, and CONNECT messages.</p>
Interface Identifier Value	<p>Enter the value obtained from the PBX provider.</p> <p>This field applies to the DMS100 protocol only. Valid values range from 0 to 255.</p>
Display IE Delivery	<p>Check the check box to enable delivery of the display information element (IE) in SETUP and CONNECT messages for the calling and called party name delivery service.</p> <p>Default leaves the check box unchecked.</p>
Redirecting Number IE Delivery	<p>Check the check box to include the Redirecting Number IE in the SETUP message to indicate the first redirecting number and the redirecting reason of the call when Call Forward happens.</p> <p>Default leaves this check box unchecked.</p> <p>This setting applies to the SETUP message only on all protocols for digital access gateways.</p>
Delay for first restart (1/8 sec ticks)	<p>Enter the rate at which the spans are brought in service. The delay occurs when many PRI spans are enabled on a system and the Inhibit Restarts at PRI Initialization check box is unchecked. For example, set the first five cards to 0, and set the next five cards to 16. (Wait 2 seconds before bringing them in service.)</p>
Delay between restarts (1/8 sec ticks)	<p>Enter the time between restarts. The delay occurs when a PRI RESTART is sent if the Inhibit Restarts check box is unchecked.</p>

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Num Digits	<p>Choose the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>Use this field if you check the Sig Digits check box. Use for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number used to route calls coming into the PRI span. See Prefix DN and Sig Digits.</p>
Sig Digits	<p>This field represents the number of final digits a PRI span should retain on inbound calls. A trunk with significant digits enabled truncates all but the final few digits of the address provided by an inbound call.</p> <p>Enable or disable this box depending on whether you want to collect significant digits.</p> <p>If the check box is unchecked, the Cisco CallManager does not truncate the inbound number. If the check box is checked, you also need to choose the number of significant digits to collect.</p>
Prefix DN	<p>Enter the prefix digits that are appended to the digits that this trunk receives on incoming calls.</p> <p>The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.</p>
Presentation Bit	<p>Choose whether you want the central office to transmit or block caller ID.</p> <p>Choose Allowed if you want the central office to send caller ID. Choose Restricted if you do not want the central office to send caller ID.</p>

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Called party IE number type unknown	<p>Choose the format for the type of number in called party directory numbers. Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the directory number type. • International—Use when you are dialing outside the dialing plan for your country. • National—Use when you are dialing within the dialing plan for your country. • Unknown—The dialing plan is unknown.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Calling party IE number type unknown	<p data-bbox="608 289 1239 354">Choose the format for the type of number in calling party directory numbers.</p> <p data-bbox="608 370 1239 654">Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p data-bbox="608 670 1022 695">Choose one of the following options:</p> <ul data-bbox="608 711 1239 977" style="list-style-type: none"><li data-bbox="608 711 1239 776">• CallManager—The Cisco CallManager sets the directory number type.<li data-bbox="608 792 1239 857">• International—Use when you are dialing outside the dialing plan for your country.<li data-bbox="608 873 1239 938">• National—Use when you are dialing within the dialing plan for your country.<li data-bbox="608 954 1239 977">• Unknown—The dialing plan is unknown.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Called Numbering Plan	<p>Choose the format for the numbering plan in called party directory numbers.</p> <p>Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the Numbering Plan in the directory number. • ISDN—Use when you are dialing outside the dialing plan for your country. • National Standard—Use when you are dialing within the dialing plan for your country. • Private—Use when you are dialing within a private network. • Unknown—The dialing plan is unknown.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Calling Numbering Plan	<p data-bbox="608 285 1239 350">Choose the format for the numbering plan in calling party directory numbers.</p> <p data-bbox="608 363 1232 651">Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p data-bbox="608 664 1022 696">Choose one of the following options:</p> <ul data-bbox="608 709 1232 1045" style="list-style-type: none"><li data-bbox="608 709 1232 774">• CallManager—The Cisco CallManager sets the Numbering Plan in the directory number.<li data-bbox="608 787 1232 852">• ISDN—Use when you are dialing outside the dialing plan for your country.<li data-bbox="608 865 1232 930">• National Standard—Use when you are dialing within the dialing plan for your country.<li data-bbox="608 943 1232 1008">• Private—Use when you are dialing within a private network.<li data-bbox="608 1021 1232 1053">• Unknown—The dialing plan is unknown.

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
PRI Protocol Type	<p>Choose the communications protocol for the span:</p> <p>For E1 PRI spans, two options exist:</p> <ul style="list-style-type: none"> • PRI AUSTRALIAN—Australian ISDN • PRI EURO—European ISDN <p>T1 PRI spans have several options, depending on the carrier or switch:</p> <ul style="list-style-type: none"> • 4E—AT&T InterExchange carrier • 5E8 Custom—Cisco IP Phone • 5E9 and NI2—AT&T family local exchange switch or carrier • DMS—MCI family local exchange switch or carrier • ETSI SC—European local exchange carrier on T1; also, Japanese local exchange. <p>Determine the switch to which you are connecting and the preferred protocol, as follows:</p> <ul style="list-style-type: none"> • Nortel Meridian—5E8 Custom • Lucent Definity—4ESS or 5E8 • Madge (Teleos) box—5E8 Teleos • Intecom PBX—5E8 Intecom <p>Alternatively, choose the protocol based on the carrier:</p> <ul style="list-style-type: none"> • MCI—DMS-250 • Sprint—DMS-250 or DMS-100 • AT&T—4ESS

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Inhibit restarts at PRI initialization	<p>A RESTART message confirms the status of the ports on a PRI span. If RESTARTs are not sent, Cisco CallManager assumes the ports are in service.</p> <p>When the D-Channel successfully connects with another PRI D-Channel, it sends restarts when this check box is unchecked.</p>
Enable status poll	Check the check box to view the B-channel status in the debug pane.
Number of digits to strip	<p>Choose the number of digits to strip on outbound calls, from 0 to 32.</p> <p>For example, 8889725551234 is dialed, and the number of digits to strip is 3. In this example, Cisco CallManager strips 888 from the outbound number.</p>
Country Code	Choose the country in which the gateway is located.
Setup non-ISDN Progress Indicator IE Enable	<p>Default leaves this setting disabled (unchecked).</p> <p>Enable this setting only if users are not receiving ringback tones on outbound calls.</p> <p>When this setting is enabled, the Cisco CallManager sends Q.931 Setup messages out digital (that is, non-H.323) gateways with the Progress Indicator field set to non-ISDN.</p> <p>This message notifies the destination device that the Cisco CallManager gateway is non-ISDN and that the destination device should play in-band ringback.</p> <p>This problem usually associates with Cisco CallManagers that connect to PBXs through digital gateways.</p>

Table 41-4 E1/T1 PRI Configuration Settings (continued)

Field	Description
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>

Related Topics

- [Adding a Non-IOS MGCP Gateway, page 41-10](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Updating Gateways and Ports, page 41-68](#)
- [Gateway Configuration, page 41-1](#)

T1-CAS Gateway Configuration Settings

Table 41-5 provides detailed descriptions for T1-CAS configuration settings.

Table 41-5 T1-CAS Configuration Settings

Field	Description
MAC Address (non-IOS gateway)	Enter the MAC address as a 12-digit hexadecimal number that uniquely identifies a hardware device. Make sure that you enter a 12-hexadecimal character value.
Domain Name	For MGCP gateways, this display-only field contains a string generated by Cisco CallManager that uniquely identifies the MGCP digital interface. For example: S1/DS1-0@VG200-2 S1 indicates slot 1, DS1-0 designates the digital interface, and @VG200-2 designates the MGCP domain name.
Note Enter either a MAC address or a domain name, whichever applies.	
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource List.

Table 41-5 T1-CAS Configuration Settings (continued)

Field	Description
Network Audio Hold Source	This audio source plays when the network initiates a hold action.
User Audio Hold Source	This audio source plays when a user initiates a hold action.
Calling Search Space	Choose the appropriate calling search space. A calling search space designates a collection of route partitions that are searched to determine how a collected (originating) number should be routed.
Load Information	Enter the appropriate firmware load information for the gateway. The values you enter here override the default values for this gateway.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth consumed by this device.
Port Selection Order	Choose the order in which channels or ports are enabled from first (lowest number port) to last (highest number port) or from last to first. Valid entries are TOP_DOWN (first to last) or BOTTOM_UP (last to first). If you are not sure which port order to use, choose TOP_DOWN.
Country Code	Choose the country in which the gateway is located.

Related Topics

- [Adding a Non-IOS MGCP Gateway, page 41-10](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Updating Gateways and Ports, page 41-68](#)
- [Gateway Configuration, page 41-1](#)

H.323 Gateway and Intercluster Trunk Configuration Settings

Table 41-6 lists configuration settings for H.323 gateways and intercluster trunks.

Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings

Field	Description
Device Name	Enter a unique name that is used by Cisco CallManager to identify the device.
Description	Enter a description that clarifies the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource Group List.
Network Hold Audio Source	This audio source plays when the network initiates a hold action.
User Hold Audio Source	This audio source plays when a user initiates a hold action.

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Calling Search Space	Choose the appropriate calling search space. A calling search space specifies the collection of Route Partitions searched to determine how a collected (originating) number should be routed.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth consumed by this device.
Caller ID DN	<p>Enter the pattern you want to use for caller ID, from 0 to 24 digits.</p> <p>For example, in North America:</p> <ul style="list-style-type: none"> • 555XXXX = Variable caller ID, where X is equal to an extension number. The CO appends the number with the area code if you do not specify it. • 5555000 = Fixed caller ID. Use when you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.


**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Calling Party Selection	<p>Any outbound call on a gateway can send directory number information. This field determines which directory number is sent.</p> <p>Choose one of the following options to specify which directory number is sent:</p> <ul style="list-style-type: none"> • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call.
Presentation Bit	<p>Choose whether the central office transmits or blocks caller ID.</p> <p>Choose Allowed if you want the central office to send caller ID.</p> <p>Choose Restricted if you do not want the central office to send caller ID.</p>
Display IE Delivery	<p>Check the check box to enable delivery of the display IE in SETUP and CONNECT messages for the calling and called party name delivery service.</p> <p>Default leaves Display IE Delivery check box unchecked.</p>

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Gatekeeper Name	<p>Choose the Domain Name Service (DNS) name or IP address of the H.323 gatekeeper.</p> <p>A gatekeeper H.323 entity on the LAN supports the H.225 RAS message set used for admission control, bandwidth allocation, and dial pattern resolution. It controls access to the LAN for connections between H.323-compliant devices such as terminals and gateways.</p> <p>Use only for H.323-compliant gateways. All other devices do not use this box:</p> <ul style="list-style-type: none"> • If your device is not gatekeeper controlled, choose None. • If a remote gatekeeper controls the H.225 device, choose the name of the gatekeeper from the drop-down list.
Media Termination Point Required	<p>If you want a Media Termination Point to implement features that H.323 does not support (such as hold and transfer), check the check box.</p> <p>Use this check box only for H.323 clients and H.323 devices that do not support the H.245 Empty Capabilities Set message.</p>
Num Digits	<p>Choose the number of significant digits to collect, from 0 to 32.</p> <p>Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>Use this field if you enable Sig Digits. Use for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number used to route calls coming into the H.323 device. See Prefix DN and Sig Digits.</p>

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Sig Digits	<p>Significant digits represent the number of final digits retained on inbound calls. A trunk with significant digits enabled truncates all but the final few digits of the address provided by an inbound call.</p> <p>Check or uncheck this box depending on whether you want to collect significant digits.</p> <p>If check box is unchecked, the Cisco CallManager does not truncate the inbound number.</p> <p>If check box is checked, you also need to choose the number of significant digits to collect (see Num Digits).</p>
Prefix DN	<p>Enter the prefix digits that are appended to the called party number on incoming calls.</p> <p>The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.</p>
Run H225D On Every Node	<p>This option determines which Cisco CallManager in the cluster establishes the H.225 session. The default setting (checked) establishes the H.225 session on the Cisco CallManager where the calling device has registered. For most systems, the default setting works best.</p> <p></p> <p>Caution Unchecking this check box establishes the H.255 session on the controlling Cisco CallManager in the same Cisco CallManager group and device pool as the H.225 gateway. Do not uncheck this box unless advised to do so by Cisco Technical Assistance (TAC).</p>

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Called party IE number type unknown	<p>Choose the format for the type of number in called party directory numbers. Cisco CallManager sets the called directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the directory number type. • International—Use when you are dialing outside the dialing plan for your country. • National—Use when you are dialing within the dialing plan for your country. • Unknown—The dialing plan is unknown.

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Calling party IE number type unknown	<p>Choose the format for the type of number in calling party directory numbers.</p> <p>Cisco CallManager sets the calling directory number (DN) type. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the directory number type. • International—Use when you are dialing outside the dialing plan for your country. • National—Use when you are dialing within the dialing plan for your country. • Unknown—The dialing plan is unknown.

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Called Numbering Plan	<p>Choose the format for the numbering plan in called party directory numbers.</p> <p>Cisco CallManager sets the called DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the Numbering Plan in the directory number. • ISDN—Use when you are dialing outside the dialing plan for your country. • National Standard—Use when you are dialing within the dialing plan for your country. • Private—Use when you are dialing within a private network. • Unknown—The dialing plan is unknown.

**Table 41-6 H.323 Gateway/Intercluster Trunk Configuration Settings
(continued)**

Field	Description
Calling Numbering Plan	<p>Choose the format for the numbering plan in calling party directory numbers.</p> <p>Cisco CallManager sets the calling DN numbering plan. Cisco recommends that you do not change the default value unless you have advanced experience with dialing plans, such as NANP or the European dialing plan. You may need to change the default in Europe because Cisco CallManager does not recognize European national dialing patterns. You can also change this setting when connecting to PBXs using routing as a non-national type number.</p> <p>Choose one of the following options:</p> <ul style="list-style-type: none"> • CallManager—The Cisco CallManager sets the Numbering Plan in the directory number. • ISDN—Use when you are dialing outside the dialing plan for your country. • National Standard—Use when you are dialing within the dialing plan for your country. • Private—Use when you are dialing within a private network. • Unknown—The dialing plan is unknown.

Related Topics

- [Adding a Cisco IOS H.323 Gateway or Intercluster Trunk, page 41-12](#)
- [Updating Gateways and Ports, page 41-68](#)
- [Gateway Configuration, page 41-1](#)

Analog Access Gateway Configuration Settings

Table 41-6 lists configuration settings for Analog Access gateways (Cisco AS-2, AS-4, and AS-8 gateways; Cisco AT-2, AT-4, and AT-8 gateways).

Table 41-7 Access Analog Gateway Configuration Settings

Field	Description
MAC Address	Enter the media access control address. Make sure that you enter a 12-hexadecimal character value. The MAC address uniquely identifies hardware-based devices.
Description	Enter the purpose of the device.
Device Pool	From the drop-down list box, choose the appropriate device pool. The device pool specifies a collection of properties for this device including CallManager Group, Date/Time Group, Region, and Calling Search Space for auto-registration of devices.
Load Information	Enter the appropriate load information for the custom software for gateway. The values you enter here override the default values for this gateway.
Country Code	Choose the country in which the gateway is located.
Location	Choose the appropriate location for this device. The location specifies the total bandwidth available for calls to and from this location. A location setting of None means that the locations feature does not keep track of the bandwidth consumed by this device.
Calling Search Space	Choose the appropriate calling search space. The calling search space specifies a collection of partitions that are searched to determine how a collected (originating) number should be routed.

Table 41-7 Access Analog Gateway Configuration Settings (continued)

Field	Description
Media Resource Group List	This list provides a prioritized grouping of media resource groups. An application chooses the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource Group List.
Network Hold Audio Source	This audio source plays when the network initiates a hold action.
User Hold Audio Source	This audio source plays when a user initiates a hold action.
Port Selection Order	Choose the order in which ports are chosen. If you are not sure which port order to use, choose TOP_DOWN: <ul style="list-style-type: none"> • TOP_DOWN—selects ports in descending order, from port 1 to port 8. • BOTTOM_UP—selects ports in ascending order, from port 8 to port 1.

Related Topics

- [Adding an Analog Access Gateway and Ports, page 41-13](#)
- [Updating Gateways and Ports, page 41-68](#)
- [Gateway Configuration, page 41-1](#)

Port Configuration Settings

See the following sections for tables that list detailed descriptions for all port type configuration fields:

- [POTS Port Configuration Settings, page 41-46](#)
- [Loop Start Port Configuration Settings, page 41-49](#)
- [Ground Start Port Configuration Settings, page 41-51](#)
- [E & M Port Configuration Settings, page 41-52](#)

For detailed information about gateway configuration settings, see the [“Gateway Configuration Settings”](#) section on page 41-15.

POTS Port Configuration Settings

Table 41-8 POTS Port Configuration Settings

Field	Description
Port Type	Choose POTS from the Port Type drop-down list box.
Port Number End Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the Port Number and End Port Number fields. <ul style="list-style-type: none"> To specify a range of ports, choose appropriate values for Port Number and End Port Number. To create a single port, choose the same number in the Port Number and End Port Number fields. To add all available ports, choose All Ports for both the Port Number and End Port Number fields.
Port Direction	Choose the direction of calls passing through this port: <ul style="list-style-type: none"> Inbound—Use for incoming calls only. Outbound—Use for outgoing calls. Bothways—Use for inbound and outbound calls (default).
Audio Signal Adjustment into IP Network	This specifies the gain or loss applied to the received audio signal relative to the port application type.
Audio Signal Adjustment from IP Network	This specifies the gain or loss applied to the transmitted audio signal relative to the port application type.

Table 41-8 POTS Port Configuration Settings (continued)

Field	Description
Prefix DN	<p>Enter the prefix digits that are appended to the digits this trunk receives on incoming calls.</p> <p>The Cisco CallManager adds prefix digits after truncating the number in accordance with the Num Digits setting.</p>
Num Digits	<p>Enter the number of significant digits to collect, from 0 to 32.</p> <p>Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number used to route calls coming into the PRI span. See Prefix DN.</p>
Expected Digits	<p>Enter the number of digits expected on the inbound side of the trunk. For this rarely used field, leave zero as the default value if you are unsure.</p>
Call Restart Timer (1000-5000ms)	<p>Call Restart Timer (1000-5000ms); ms indicates time in milliseconds.</p>
Offhook Validation Timer (100-1000ms)	<p>Offhook Validation Timer (100-1000ms); ms indicates time in milliseconds.</p>
Onhook Validation Timer (100-1000ms)	<p>Onhook Validation Timer (100-1000ms); ms indicates time in milliseconds.</p>
Hookflash Timer (100-1500ms)	<p>Hookflash Timer (100-1500ms); ms indicates time in milliseconds.</p>
SMDI Port Number (0-4096)	<p>Use this field for analog access ports that connect to a voice-mail system.</p> <p>Set the SMDI Port Number equal to the actual port number on the voice-mail system to which the analog access port connects.</p>

Table 41-8 POTS Port Configuration Settings (continued)

Field	Description
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>

Related Topics

- [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
- [Adding an Analog Access Gateway and Ports, page 41-13](#)
- [Gateway Configuration, page 41-1](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)

Loop Start Port Configuration Settings

Table 41-9 Loop Start Port Configuration Settings

Field	Description
Port Type	Choose Loop Start from the Port Type drop-down list box.
Port Number End Port Number	Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the Port Number and End Port Number fields. <ul style="list-style-type: none"> To specify a range of ports, choose appropriate values for Port Number and End Port Number. To create a single port, choose the same number in the Port Number and End Port Number fields. To add all available ports, choose All Ports for both the Port Number and End Port Number fields.
Port Direction	Choose the direction of calls passing through this port: <ul style="list-style-type: none"> Inbound—Use for incoming calls only. Outbound—Use for outgoing calls. Both Ways—Use for inbound and outbound calls.
Audio Signal Adjustment into IP Network	This specifies the gain or loss applied to the received audio signal relative to the port application type.
Audio Signal Adjustment from IP Network	This specifies the gain or loss applied to the transmitted audio signal relative to the port application type.
Caller ID Enable	Check this check box to enable Caller ID.
Attendant DN	Enter the directory number to which you want incoming calls routed; for example, zero or a directory number for an attendant.
Delay Before Dialing Timer (100-5000ms)	Delay Before Dialing Timer (100-5000ms); ms indicates time in milliseconds.

Table 41-9 Loop Start Port Configuration Settings (continued)

Field	Description
Release Guard Timer (100-5000ms)	Release Guard Timer (100-5000ms); ms indicates time in milliseconds
Incoming Ring Halt Timer (1000-8000ms)	Incoming Ring Halt Timer (1000-8000ms); ms indicates time in milliseconds.
Incoming Ring Validation Timer (100-2000ms)	Incoming Ring Validation Timer (100-2000ms); ms indicates time in milliseconds.

Product-Specific Configurations

Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>
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Related Topics

- [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
- [Gateway Configuration, page 41-1](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)

Ground Start Port Configuration Settings

Table 41-10 Ground Start Port Configuration Settings

Field	Description
Port Type	Choose Ground Start from the Port Type drop-down list box.
Port Number End Port Number	<p>Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the Port Number and End Port Number fields.</p> <ul style="list-style-type: none"> To specify a range of ports, choose appropriate values for Port Number and End Port Number. To create a single port, choose the same number in the Port Number and End Port Number fields. To add all available ports, choose All Ports for both the Port Number and End Port Number fields.
Port Direction	<p>Choose the direction of calls passing through this port:</p> <ul style="list-style-type: none"> Inbound—Use for incoming calls only. Outbound—Use for outgoing calls. Both Ways—Use for inbound and outbound calls.
Attendant DN	Enter the number to which you want incoming calls routed; for example, zero or a directory number for an attendant.

Table 41-10 Ground Start Port Configuration Settings (continued)

Field	Description
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>

Related Topics

- [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
- [Gateway Configuration, page 41-1](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)

E & M Port Configuration Settings

E & M (Ear and Mouth or receive and transit) ports allow connection for PBX trunk lines (tie lines). E & M designates a signaling technique for two-wire and four-wire telephone and trunk interfaces.

E & M port configuration values must match those of the PBX to which the port connects. Refer to the documentation that came with your specific PBX for the appropriate E & M voice-port configuration values.

Table 41-11 E & M Port Configuration Settings

Field	Description
Port Type	Choose EANDM from the Port Type drop-down list box.
Port Number End Port Number	<p>Choose whether you want to add and configure all available ports, a single port, or a range of ports by setting values for the Port Number and End Port Number fields.</p> <ul style="list-style-type: none"> To specify a range of ports, choose appropriate values for Port Number and End Port Number. To create a single port, choose the same number in the Port Number and End Port Number fields. To add all available ports, choose All Ports for both the Port Number and End Port Number fields.
Port Direction	<p>Choose the direction of calls passing through this port:</p> <ul style="list-style-type: none"> Inbound—Use for incoming calls only. Outbound—Use for outgoing calls. Both Ways—Use for inbound and outbound calls.
Calling Party Selection	<p>Because any outbound call on a gateway can send directory number information, choose which directory number to send:</p> <ul style="list-style-type: none"> Originator—Send the directory number of the calling device. First Redirect Number—Send the directory number of the redirecting device. Last Redirect Number—Send the directory number of the last device to redirect the call.
Digit Sending	<p>Choose one of the following digit sending types for out-dialing:</p> <ul style="list-style-type: none"> DTMF—Dual-tone multifrequency. Normal touchtone dialing MF—Multifrequency PULSE—Pulse (rotary) dialing

Table 41-11 E & M Port Configuration Settings (continued)

Field	Description
Caller ID Type	<p>Choose the type of caller ID that displays to the called party:</p> <ul style="list-style-type: none"> • ANI—Automatic number identification displays the number of the calling party. • DNIS—Dialed number identification service displays the number that the caller dialed.
Caller ID DN	<p>Enter the pattern you want to use for caller ID, from 0 to 24 digits.</p> <p>For example, in North America:</p> <ul style="list-style-type: none"> • 555XXXX = Variable caller ID, where X equals an extension number. The CO appends the number with the area code if you do not specify it. • 5555000 = Fixed caller ID, for when you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Prefix DN	<p>Enter the prefix digits that are appended to the called party number on incoming calls.</p> <p>The Cisco CallManager adds prefix digits after first truncating the number in accordance with the Num Digits setting.</p>
Num Digits	<p>Choose the number of significant digits to collect, from 0 to 32. Cisco CallManager counts significant digits from the right (last digit) of the number called.</p> <p>Use this field if you check the Sig Digits check box. Use this field for the processing of incoming calls and to indicate the number of digits starting from the last digit of the called number used to route calls coming into the PRI span. See Prefix DN and Sig Digits.</p>

Table 41-11 E & M Port Configuration Settings (continued)

Field	Description
Expected Digits	Enter the number of digits expected on the inbound side of the trunk. If you are unsure, leave zero as the default value for this rarely used field.
Product-Specific Configuration	
Model-specific configuration fields defined by the gateway manufacturer	<p>The model-specific fields under product-specific configuration define the gateway manufacturer. Because they are dynamically configured, they can change without notice.</p> <p>To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup pane.</p> <p>If you need more information, refer to the documentation for the specific gateway that you are configuring or contact the manufacturer.</p>

Related Topics

- [Adding T1-CAS Ports to an MGCP Gateway, page 41-9](#)
- [Gateway Configuration, page 41-1](#)
- [Adding Gateways to Cisco CallManager, page 41-2](#)

Finding Specific Gateways

Because you might have hundreds of gateways in your network, Cisco CallManager lets you locate specific gateways based on specific criteria. Use these sections to find specific gateways:

- [Searching by Device Name, page 41-56](#)
- [Searching by Description, page 41-58](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Device Pool, page 41-62](#)
- [Searching by Route Group, page 41-64](#)

Searching by Device Name

Use this procedure if you know the device name of a specific gateway or if you want to get a listing of all gateways registered with Cisco CallManager.

Procedure

- Step 1** Choose **Device > Gateway**.
- The Find and List Gateways pane appears.
- Step 2** From the drop-down list box, choose **Device Name**; then, choose one of the following criteria:
- begins with
 - contains
 - ends with
 - is exactly
 - is not empty
 - is empty
- Step 3** Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.

Step 4 Click **Find**.

A list of discovered gateways displays by:

- Device icon
- Device name
- Description (if applicable)
- Device pool (if applicable)
- Status
- IP address

**Note**

You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Description, page 41-58](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Device Pool, page 41-62](#)
- [Searching by Route Group, page 41-64](#)

Searching by Description

Use this procedure if you know any of the key words used in the Description field of a specific gateway registered with Cisco CallManager.

Procedure

- Step 1** Choose **Device > Gateway**.
- The Find and List Gateways pane appears.
- Step 2** From the drop-down list box, choose **Description**; then, choose one of the following criteria:
- begins with
 - contains
 - ends with
 - is exactly
 - is not empty
 - is empty
- Step 3** Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.
- Step 4** Click **Find**.
- A list of discovered gateways displays by:
- Device icon
 - Description (if applicable)
 - Device name
 - Device pool
 - Status
 - IP address

**Note**

You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Device Name, page 41-56](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Device Pool, page 41-62](#)
- [Searching by Route Group, page 41-64](#)

Searching by Directory Number

Use this procedure to locate gateways assigned to a specific extension or range of extensions and registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways pane appears.

Step 2 From the drop-down list box, choose **Directory Number**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty

- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.

Step 4 Click **Find**.

A list of discovered gateways displays by:

- Extension
- Partition
- Device name
- Description (if applicable)
- Status
- IP address



Note You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Device Name, page 41-56](#)
- [Searching by Description, page 41-58](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Device Pool, page 41-62](#)
- [Searching by Route Group, page 41-64](#)

Searching by Calling Search Space

Use this procedure to locate gateways assigned to a calling search space and registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways pane appears.

Step 2 From the drop-down list box, choose **Calling Search Space**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.



Tips

You can locate an existing calling search space by choosing one from the drop-down list box under the **Find** button. This automatically inserts the name of the calling search space you choose into the **Find** field.

Step 4 Click **Find**.

A list of discovered gateways displays by:

- Calling search space
- Device name
- Description (if applicable)
- Status
- IP address

**Note**

You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Device Name, page 41-56](#)
- [Searching by Description, page 41-58](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Device Pool, page 41-62](#)
- [Searching by Route Group, page 41-64](#)

Searching by Device Pool

Use this procedure to locate gateways assigned to a specific device pool and registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways pane appears.

Step 2 From the drop-down list box, choose **Device Pool**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty

- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.

**Tips**

You can locate an existing device pool by choosing one from the drop-down list box under the **Find** button. This automatically inserts the name of the device pool you choose into the **Find** field.

Step 4 Click **Find**.

A list of discovered gateways displays by:

- Device pool
- Device name
- Description (if applicable)
- Status
- IP address

**Note**

You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Device Name, page 41-56](#)
- [Searching by Description, page 41-58](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Route Group, page 41-64](#)

Searching by Route Group

Use this procedure to locate gateways assigned to a specific route group and registered with Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways pane appears.

Step 2 From the drop-down list box, choose **Route Group**; then, choose one of the following criteria:

- begins with
- contains
- ends with
- is exactly
- is not empty
- is empty

Step 3 Specify the appropriate search text, if applicable. You can also specify how many items per page to display, and whether to hide or show endpoints.



Tips

You can locate an existing route group by choosing one from the drop-down list box under the **Find** button. This automatically inserts the name of the route group you choose into the **Find** field.

Step 4 Click **Find**.

A list of discovered gateways displays by:

- Route group priority)
- Device name (port)
- Description (if applicable)
- Status
- IP address

**Note**

You can delete or reset multiple gateways from the Find and List Gateways pane by checking the check boxes next to the appropriate gateways and clicking **Delete Selected** to delete the gateways or clicking **Reset Selected** to reset the gateways. You can choose all of the gateways on the pane by checking the check box in the matching records title bar.

Related Topics

- [Searching by Device Name, page 41-56](#)
- [Searching by Description, page 41-58](#)
- [Searching by Directory Number, page 41-59](#)
- [Searching by Calling Search Space, page 41-60](#)
- [Searching by Device Pool, page 41-62](#)

Modifying Gateways and Ports

Using Cisco CallManager, you perform the following tasks identically regardless of the gateway type:

- [Deleting Gateways, page 41-66](#)
- [Resetting and Restarting Gateways, page 41-67](#)
- [Updating Gateways and Ports, page 41-68](#)

Deleting Gateways

Complete the following steps to delete a gateway from Cisco CallManager.

Procedure

- Step 1** Choose **Device > Gateway**.
The Find and List Gateways pane appears.
- Step 2** Enter search criteria to locate a specific gateway.
- Step 3** Click **Find**.
A list of discovered gateways matching your search criteria displays.
- Step 4** Check the check box next to the gateway you want to delete.
- Step 5** Click **Delete Selected**.
A message displays stating that you cannot undo this action.
- Step 6** Click **OK** to delete the gateway, or **Cancel** to cancel the operation.



Tips

You can delete all of the gateways on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Finding Specific Gateways, page 41-56](#)

Resetting and Restarting Gateways

Complete the following steps to reset or restart a gateway using Cisco CallManager.

Procedure

- Step 1** Choose **Device > Gateway**.
The Find and List Gateway pane appears.
- Step 2** Enter search criteria to locate a specific gateway.
- Step 3** Click **Find**.
A list of discovered gateways matching your search criteria displays.
- Step 4** Check the check box next to the gateway you want to reset.
- Step 5** Click **Reset Selected**.
The Reset Gateway(s) pane appears.
- Step 6** Click one of the following choices:
- **Restart**—Restarts a device without shutting it down.
 - **Reset**—Shuts down a device and brings it back up.
-

Related Topics

- [Finding Specific Gateways, page 41-56](#)
- [Updating Gateways and Ports, page 41-68](#)

Updating Gateways and Ports

Complete the following steps to update a gateway or reconfigure gateway ports from Cisco CallManager.

Procedure

Step 1 Choose **Device > Gateway**.

The Find and List Gateways pane appears.

Step 2 Enter search criteria to locate a specific gateway.

Step 3 Click **Find**.

A list of discovered devices displays.

Step 4 Click the **Device Name** of the gateway you want to update.

The Gateway Configuration pane appears.

Step 5 Update the appropriate gateway or port settings as described in the following sections.

To access gateway ports, click the icon of the gateway port or the MGCP endpoint link on the left side of the configuration pane for the selected gateway.

- [MGCP Gateway Configuration Settings, page 41-16](#)
- [FXS/FXO Gateway Configuration Settings, page 41-18](#)
- [E1/T1 PRI Gateway Configuration Settings, page 41-21,](#)
- [T1-CAS Gateway Configuration Settings, page 41-33.](#)
- [Analog Access Gateway Configuration Settings, page 41-44](#)
- [Port Configuration Settings, page 41-45](#)

Step 6 Click **Update**.

Step 7 Reset the gateway to apply the changes.

Related Topics

- [Adding Gateways to Cisco CallManager, page 41-2](#)
- [Finding Specific Gateways, page 41-56](#)

- [Resetting and Restarting Gateways, page 41-67](#)
- [Deleting Gateways, page 41-66](#)



Cisco IP Phone Configuration

Cisco IP phones as full-featured telephones can plug directly into your IP network. You can use the Cisco CallManager Administration phone configuration panes to configure the following Cisco IP phones and devices:

- Cisco IP Phone 7900 Family
- Cisco IP Phone model 30 VIP
- Cisco IP Phone model 12 SP+
- H.323 clients
- CTI ports

Once you add a Cisco IP phone to Cisco CallManager Administration, information from the RIS Data Collector service displays on the Phone Configuration pane. When available, the IP address of the device and the name of the Cisco CallManager with which the device registered display.

The following topics provide information about working with and configuring Cisco IP phones in Cisco CallManager Administration:

- [Configuring Cisco IP Phones, page 42-2](#)
- [Finding a Phone, page 42-26](#)
- [Configuring Directory Numbers, page 42-27](#)
- [Phone Button Template Configuration, page 43-1](#)
- [Phone Configuration Settings, page 42-12](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Configuring Cisco IP Phones

You can add phones to the Cisco CallManager database automatically using auto-registration, manually using the phone configuration panes, or in groups with the Bulk Administration Tool (BAT). By enabling auto-registration, you can automatically add a Cisco IP phone to the Cisco CallManager database when you connect the phone to your IP telephony network. During auto-registration, Cisco CallManager assigns the next available sequential directory number to the phone. In many cases, you might not want to use auto-registration; for example, if you want to assign a specific directory number to a phone. If you do not use auto-registration, you must manually add phones to the Cisco CallManager database or use the Bulk Administration Tool (BAT). BAT, a plug-in application, enables system administrators to perform batch add, modify, and delete operations on large numbers of Cisco IP phones. Refer to the *Bulk Administration Tool Guide for Cisco CallManager* for detailed instructions on using BAT.

Once you add a Cisco IP phone to Cisco CallManager Administration, the RIS Data Collector service displays the device name, registration status, and the IP address of the Cisco CallManager to which it is registered on the Phone Configuration pane.

For information on how to configure phones as well as H.323 clients and CTI ports from Cisco CallManager Administration, see the following topics:

- [Cisco IP Phone Configuration, page 42-1](#)
- [Displaying the MAC Address of a Phone, page 42-3](#)
- [Adding a Phone, page 42-4](#)
- [Deleting a Phone, page 42-10](#)
- [Resetting a Phone, page 42-7](#)
- [Updating a Phone, page 42-9](#)
- [Copying an Existing Phone, page 42-6](#)
- [Phone Configuration Settings, page 42-12](#)
- [Configuring Speed Dial Buttons, page 42-20](#)
- [Speed Dial Configuration Settings, page 42-22](#)
- [Cisco IP Phones, *Cisco CallManager System Guide*](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Displaying the MAC Address of a Phone

The Media Access Control (MAC) address comprises a unique, 12-character, hexadecimal number that identifies a Cisco IP phone or other hardware device. Locate the number on a label on the bottom of the phone (for example, 000B6A409C405 for Cisco IP Phone 7900 Family models or SS-00-0B-64-09-C4-05 for Cisco IP Phone models SP 12+ and 30 VIP). Cisco CallManager makes the MAC address a required field for Cisco IP phone device configuration. When entering the MAC address in Cisco CallManager fields, do not use spaces or dashes and do not include the "SS" that may precede the MAC address on the label.

To display the MAC address when the phone is powered on, perform the following steps:

- Cisco IP Phone 7960 and 7940 models—Press **Settings**, use the arrow buttons to highlight the **Network Configuration** menu option, and press the **Select** softkey.
- Cisco IP Phone 7910 — Press **Settings**, use the arrow buttons to locate Network Config options, and press **6** on the phone keypad to begin displaying the Network Config options; then, use the arrow keys to scroll the Network Config option display to the MAC address.
- Cisco IP Phone models 12 SP+ and 30VIP—Press ****** to display the MAC address on the second line of the LCD display.

For more information about displaying additional configuration settings on Cisco IP phones, refer to the *Cisco IP Phone 7900 Family Administration Guide* and the individual *Getting Started* publications provided with Cisco IP phones.

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Adding a Phone, page 42-4](#)
- [Updating a Phone, page 42-9](#)
- [Cisco IP Phones, *Cisco CallManager System Guide*](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Adding a Phone

Before a Cisco IP phone can be used, you must use this procedure to add the phone to Cisco CallManager. You can also use this procedure to configure H.323 clients or CTI ports. H.323 clients can be Symbol NetVision phones or Microsoft NetMeeting clients. CTI ports designate virtual devices used by Cisco CallManager applications such as Cisco SoftPhone and Cisco AutoAttendant.

**Note**

If you are planning to use a TAPI application to control CTI port devices using the Cisco TAPI Service Provider (TSP), then you may only configure one line per CTI port device.

Procedure

-
- Step 1** Choose **Device > Add a Device**.
- The Add a New Device pane displays.
- Step 2** From the Device Type drop-down list box, choose **Phone** and click **Next**.
- The Add a New Phone pane displays.
- Step 3** From the Phone type drop-down list, choose the appropriate phone type (Cisco IP Phone model, H.323 client, or CTI port) and click **Next**. Once you choose a phone type, you cannot modify it.
- The Phone Configuration pane displays.
- Step 4** Enter the appropriate settings as described in [Table 42-1](#).
- Only the settings appropriate to the chosen phone type appear on your pane.
- Step 5** Click **Insert**.
- A message displays stating that the phone has been added to the database.
- Step 6** To add a directory number to this phone, click **OK** and enter the appropriate settings on the Directory Number Configuration pane as described in the [“Directory Number Configuration Settings”](#) section on page 42-32. To return to the Phone Configuration pane, click **Cancel**.

Once you add a Cisco IP phone to Cisco CallManager Administration, information from the RIS Data Collector service displays on the Phone Configuration pane. When available, the IP address of the device and the name of the Cisco CallManager with which the device registered display as illustrated in Figure 42-1.

Figure 42-1 Phone Configuration Pane

The screenshot shows the Cisco CallManager Administration interface. At the top, there is a navigation menu with options: System, Route Plan, Service, Feature, Device, User, Application, and Help. Below this is the Cisco CallManager Administration logo and the text 'For Cisco IP Telephony Solutions'. The main heading is 'Phone Configuration'. On the right side, there are several links: 'Add a new phone', 'Update Speed Dial buttons', 'Update Services', and 'Back to Find/List Phones'. The main content area displays the following information:

- Phone:** SEP003094C2D83A (Center Shelf)
- Registration:** Registered with Cisco CallManager DLS2-CM166-CM1
- IP Address:** 172.28.235.165
- Status:** Ready

Below this information are five buttons: Copy, Update, Delete, Reset Phone, and Cancel Changes. On the left side, under 'Directory Numbers', there is a 'Base Phone' section with two lines:

- Line 1 - 2235 (no Partition)
- Line 2 - Add new DN

On the far right edge of the screenshot, there is a vertical label '036893'.

Step 7 Reset the phone after making changes to apply the new settings. Refer to the “Resetting a Phone” section on page 42-7.

Next Steps

If you want to configure speed-dial buttons to this phone, see the “Configuring Speed Dial Buttons” section on page 42-20. If you want to configure services for this phone, see the “Configuring Cisco IP Phone Services” section on page 42-22.

Related Topics

- Cisco IP Phone Configuration, page 42-1
- Resetting a Phone, page 42-7
- Adding a Directory Number, page 42-28
- Deleting a Phone, page 42-10
- Updating a Phone, page 42-9
- Phone Configuration Settings, page 42-12
- Configuring Speed Dial Buttons, page 42-20

- [Cisco IP Phones](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Copying an Existing Phone

If you want to manually add several similar phones to the Cisco CallManager database, you can add one and then copy its basic settings to apply to another phone. You must change at least the Media Access Control (MAC) address before inserting the new phone into the database.

Perform the following procedure to copy phone settings.

Procedure

Step 1 Choose **Device > Phone**.

The Find and List Phones pane displays.

Step 2 Enter search criteria to locate a specific phone and click **Find**.

A list of phones that match the search criteria appears.

Step 3 Click the Copy icon for the phone whose settings you want to copy.

The Phone Configuration pane displays.

Step 4 Enter the MAC address of the new phone.



Note For information on obtaining the MAC address, see the [“Displaying the MAC Address of a Phone”](#) section on page 42-3.

Step 5 Update the appropriate settings as described in [Table 42-1](#).

Step 6 Click **Insert**.

A message displays stating that the phone has been added to the database.

Step 7 To add a directory number to this phone, click **OK** and enter the appropriate settings on the Directory Number Configuration pane as described in the [“Directory Number Configuration Settings”](#) section on page 42-32. To return to the Phone Configuration pane, click **Cancel**.

Related Topics

- [Cisco IP Phone Configuration](#), page 42-1
- [Finding a Phone](#), page 42-26
- [Adding a Phone](#), page 42-4
- [Resetting a Phone](#), page 42-7
- [Updating a Phone](#), page 42-9
- [Deleting a Phone](#), page 42-10
- [Phone Configuration Settings](#), page 42-12
- [Configuring Speed Dial Buttons](#), page 42-20
- [Adding a Directory Number](#), page 42-28
- [Cisco IP Phones](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Resetting a Phone

You must reset a Cisco IP phone after you add a directory number or update its settings for your changes to take affect. Perform the following procedure to reset a Cisco IP phone using Cisco CallManager.



Note If a call is in progress, the phone does not reset until the call finishes.

Procedure

Step 1 Choose **Device > Phone**.

The Find and List Phones pane displays.

Step 2 Enter search criteria to locate a specific phone and click **Find**.

A list of phones that match the search criteria appears as illustrated in [Figure 42-2](#).

Figure 42-2 Find and List Phones Pane

Matching record(s) 1 to 20 of 1703
Real-time Information Service returned information for 20 of 20 devices listed below.

<input type="checkbox"/>	Device Name	Description	Device Pool	Status	IP Address	Copy
<input type="checkbox"/>	SEP0001968FF752	Auto 1594	Default	Not Registered	10.35.5.161	
<input type="checkbox"/>	SEP0001968FF75C	Auto 2010	Default	Not Registered	10.35.5.164	
<input type="checkbox"/>	SEP0001968FF75D	Auto 2225	Default	Not Registered	10.35.7.109	
<input type="checkbox"/>	SEP0001968FF75E	Auto 1691	Default	Not Registered	10.35.6.158	
<input type="checkbox"/>	SEP0001968FF75F	Auto 1073	Default	Not Registered	10.35.6.84	
<input type="checkbox"/>	SEP0001968FF760	Auto 1789	Default	Not Registered	10.35.5.86	
<input type="checkbox"/>	SEP0001968FF761	Auto 2042	Default	Not Registered	10.35.4.215	

589349

Step 3 Check the check boxes next to the phones you want to reset. To select all of the phones on the pane, check the check box in the matching records title bar.

Step 4 Click **Reset Selected**.

The Reset Device pane displays.

Step 5 Click one of the following items:

- **Restart Device**—Restarts the selected devices without shutting them down (reregisters the phones with Cisco CallManager).
- **Reset Device**—Shuts down the selected devices and brings them back up (performs a complete shutdown and reinitialization of the phones).

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Adding a Phone, page 42-4](#)
- [Updating a Phone, page 42-9](#)
- [Cisco IP Phones, Cisco CallManager System Guide](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Updating a Phone

Perform the following procedure to update a Cisco IP phone from Cisco CallManager.

Procedure

Step 1 Choose **Device > Phone**.

The Find and List Phones pane displays.

Step 2 Enter search criteria to locate a specific phone, and click **Find**.

A list of phones that match the search criteria appears.

Step 3 From the list, click the name of the phone you want to update.

The Phone Configuration pane displays.

Step 4 Update the appropriate settings as described in [Table 42-1](#).

Step 5 Click **Update**.

Step 6 Click **Reset Phone** to reset or restart the phone and apply the new settings.

Restarting the phone re-registers the phones with Cisco CallManager without shutting the phone down. Resetting the phone shuts down the phone and brings it back up (performs a complete shut-down and re-initialization of the phones).

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Adding a Phone, page 42-4](#)
- [Resetting a Phone, page 42-7](#)
- [Phone Configuration Settings, page 42-12](#)
- [Configuring Speed Dial Buttons, page 42-20](#)
- [Speed Dial Configuration Settings, page 42-22](#)
- [Finding a Phone, page 42-26](#)
- [Cisco IP Phones, *Cisco CallManager System Guide*](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Deleting a Phone

Perform the following procedure to delete a Cisco IP phone from Cisco CallManager.

Procedure

Step 1 Choose **Device > Phone**.

The Find and List Phones pane displays.

Step 2 Enter search criteria to locate a specific phone and click **Find**.

A list of phones that match the search criteria appears as illustrated in [Figure 42-2](#).

Figure 42-3 Find and List Phones Pane

<input type="checkbox"/>	Device Name	Description	Device Pool	Status	IP Address	Copy
<input type="checkbox"/>	SEP000196BFF752	Auto 1594	Default	Not Registered	10.35.5.161	
<input type="checkbox"/>	SEP000196BFF75C	Auto 2010	Default	Not Registered	10.35.5.164	
<input type="checkbox"/>	SEP000196BFF75D	Auto 2225	Default	Not Registered	10.35.7.109	
<input type="checkbox"/>	SEP000196BFF75E	Auto 1691	Default	Not Registered	10.35.6.158	
<input type="checkbox"/>	SEP000196BFF75F	Auto 1073	Default	Not Registered	10.35.6.84	
<input type="checkbox"/>	SEP000196BFF760	Auto 1789	Default	Not Registered	10.35.5.86	
<input type="checkbox"/>	SEP000196BFF761	Auto 2042	Default	Not Registered	10.35.4.215	

Step 3 Perform one of the following actions:

- Check the check boxes next to the phones you want to delete and clicking **Delete Selected**.
- Delete all of the phones on the pane by checking the check box in the matching records title bar and clicking **Delete Selected**.
- Choose the name of the phone you want to delete from the list to display its current settings, and click **Delete**.

A confirmation dialog displays.

Step 4 Click **OK**.

Related Topics

- [Cisco IP Phone Configuration](#), page 42-1
- [Finding a Phone](#), page 42-26
- [Adding a Phone](#), page 42-4
- [Cisco IP Phones](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Phone Configuration Settings

Table 42-1 describes the available settings on the Phone Configuration pane.



Note

The Product-Specific Configuration section contains model-specific fields defined by the phone manufacturer. Cisco CallManager dynamically populates the fields with default values.

To view field descriptions and help for product-specific configuration items, click the “i” information icon to the right of the Product Specific Configuration heading to display help in a popup window.

If you need more information, refer to the documentation for the specific phone that you are configuring or contact the manufacturer.

Table 42-1 Phone Configuration Settings

Field	Description
MAC Address	Enter the Media Access Control (MAC) address that identifies Cisco IP phones (hardware phones only). The value must be 12 hexadecimal characters. Refer to the “Displaying the MAC Address of a Phone” section on page 42-3 for information on how to access the MAC address.
Device Name	Enter a name to identify software-based telephones. The value can include 1 to 15 characters, including alphanumeric, dot, dash, and underscores. Cisco CallManager makes this field available only for H.323 clients and CTI ports.
Description	Identify the purpose of the device. You can enter the user name (such as John Smith) or the phone location (such as Lobby) in this field.

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Device Pool	<p>Choose the device pool to which you want this phone assigned. The device pool defines sets of common characteristics for devices, such as region, date/time group, and Cisco CallManager group for auto-registration.</p> <p>The value you choose overrides the default value for this type of device. Refer to the “Device Defaults Configuration” section on page 6-1.</p>
Media Resource Group List	<p>Choose the appropriate Media Resource Group List. A Media Resource Group List comprises a prioritized grouping of media resource groups. An application selects the required media resource, such as a Music On Hold server, among the available media resources according to the priority order defined in a Media Resource Group List.</p> <p>If you select <none>, Cisco CallManager uses the Media Resource Group defined in the device pool.</p> <p>For more information, refer to the “Media Resource Management” section in the <i>Cisco CallManager System Guide</i>.</p>
Calling Search Space	<p>Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched to determine how a dialed number should be routed.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
User Hold Audio Source	<p>To specify the audio source played when a user initiates a hold action, click the drop-down arrow and choose an audio source from the list that displays.</p> <p>If you do not choose an audio source, Cisco CallManager uses the audio source defined in the device pool or the system default if the device pool does not specify an audio source ID.</p> <p>Note You define audio sources in the Music On Hold Audio Source Configuration pane. For access, choose Service > Music On Hold.</p>
Network Hold Audio Source	<p>To specify the audio source played when the network initiates a hold action, click the drop-down arrow and choose an audio source from the list that displays.</p> <p>If you do not choose an audio source, Cisco CallManager uses the audio source defined in the device pool or the system default if the device pool does not specify an audio source ID.</p> <p>Note You define audio sources in the Music On Hold Audio Source Configuration pane. For access, choose Service > Music On Hold.</p>
Location	<p>Choose the appropriate location for this Cisco IP phone. The location specifies the total bandwidth available for calls to and from this location. A location setting of <i>None</i> means that the locations feature does not keep track of the bandwidth consumed by this Cisco IP phone.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Phone Button Template	<p>Choose the appropriate phone button template. The phone button template determines the configuration of buttons on a phone and identifies which feature (line, speed dial, and so on) is used for each button.</p> <p>The value you enter overrides the default value for this type of device. Refer to the “Device Defaults Configuration” section on page 6-1.</p> <p>Cisco CallManager does not make this field available for H.323 clients or CTI ports.</p>
Expansion Module 1	Choose the appropriate template, if your phone is connected to a Cisco IP Phone 7914 Expansion Module.
Expansion Module 2	Choose the appropriate template, if your phone is connected to a second Cisco IP Phone 7914 Expansion Module.
Phone Load Name	<p>Enter the custom software for the Cisco IP Phone.</p> <p>The value you enter overrides the default value for the current model. For more information, see the “Device Defaults Configuration” section on page 6-1.</p> <p>This field is not available for H.323 clients or CTI ports.</p>
Module 1 Load Name	<p>Enter the custom software for the Cisco IP Phone 7914 Expansion Module, if applicable.</p> <p>The value you enter overrides the default value for the current model.</p>
Module 2 Load Name	<p>Enter the custom software for the second Cisco IP Phone 7914 Expansion Module, if applicable.</p> <p>The value you enter overrides the default value for the current model.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Outgoing Caller ID Pattern	<p>Enter the number to send as Caller ID for outgoing calls.</p> <p>For example, in North America:</p> <ul style="list-style-type: none"> • NNNXXXX = Variable Caller ID, where XXXX is equal to an extension number or directory number (X is a number from 0 to 9), and NNN is the office code. The Central Office (CO) appends the number with the area code if you do not specify it. • 5555000 = Fixed Caller ID. Use when you want the Corporate number to be sent instead of the exact extension from which the call is placed. The CO appends the number with the area code if you do not specify it.
Calling Party Selection	<p>From the following list, choose which value displays if a call to this device is forwarded or transferred:</p> <ul style="list-style-type: none"> • Originator—Send the directory number of the calling device. • First Redirect Number—Send the directory number of the redirecting device. • Last Redirect Number—Send the directory number of the last device to redirect the call.
Caller ID Presentation	<p>Choose whether the central office transmits or blocks caller ID.</p> <p>Choose Allowed if you want the central office to send caller ID.</p> <p>Choose Restricted if you do not want the central office to send caller ID.</p>
Display IE Delivery	<p>To enable delivery of the display incoming exclusion (IE) in SETUP and CONNECT messages for the calling and called party name delivery service, check the Display IE Delivery check box.</p> <p>By default, the Display IE Delivery check box is unchecked.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Media Termination Point Required	<p>If a media termination point is used to implement features that H.323 does not support (such as hold and transfer), check the Media Termination Point Required check box. If a media termination point is not used to implement features that H.323 does not support, uncheck the check box.</p> <p>Use this check box for H.323 devices that do not support the H.245 Empty Capabilities Set message.</p>
Information	<p>Enter the location (URL) of the help text for the information (<i>i</i>) button. Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>
Directory	<p>Enter the server from which the phone obtains directory information. Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>
Messages	<p>Enter the location (URL) from which the phone obtains messaging information. Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>
Services	<p>Enter the location (URL) for Cisco IP Phone Services. Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Idle	<p>Enter the URL to display on the Cisco IP Phone 7960 and Cisco IP Phone 7940 LCD when the phone has not been used for the time specified in Idle Timer field. For example, you can display a logo on the LCD when the phone has not been used for 5 minutes.</p> <p>Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>
Idle Timer (seconds)	<p>Enter the amount of time (in seconds) that you want to elapse before the URL specified in the Idle field displays.</p> <p>Leave this field blank to accept the default setting.</p> <p>Cisco CallManager only displays this field for Cisco IP Phone 7960 and 7940 models.</p>
Authentication Server	<p>Enter the URL the phone uses to validate requests made to the phone web server. If you do not provide an authentication URL, the advanced features on the 7960 and 7940 that require authentication will not function.</p> <p>By default, this URL accesses a Cisco IP Phone User Options pane configured during installation.</p> <p>Leave this field blank to accept the default setting.</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Proxy Server	<p>Enter the host and port (for example, proxy.cisco.com:80) used to proxy HTTP requests for access to non-local host addresses from the phone HTTP client.</p> <p>If the phone receives a URL such as www.cisco.com in a service and the phone is not configured in the cisco.com domain, the phone uses the proxy server to access the URL. If the phone is configured in cisco.com domain, the phone accesses the URL without using the proxy because it is in the same domain as the URL.</p> <p>If you do not configure this URL, the phone attempts to connect directly to the URL.</p> <p>Leave this field blank to accept the default setting.</p>
Enable Extension Mobility Feature	<p>Check this check box to enable Extension Mobility.</p> <p>Note The items under the Extension Mobility (Device Profile) Information heading show current device information regarding the login status of the device.</p> <p>You must enable this feature on a device-by-device basis.</p>
Log Out Profile	<p>Choose the device profile you want to be the default logout device profile of the device. Choosing <Use Current Device Settings> creates an autogenerated device profile as the default device profile.</p> <p>If you choose <Select a User Device Profile>, you can then assign a user device profile that has already been defined; this user device profile becomes the default device profile for this device.</p> <p>If a user device profile is chosen as the default device profile, that user device profile is loaded onto the device when the device is logged out (when no user is logged in).</p>

Table 42-1 Phone Configuration Settings (continued)

Field	Description
Log In User ID	Cisco CallManager populates this field with the user ID of the user who is currently logged into this device. If no user is logged into the device, <None> displays.
Log In Time	Cisco CallManager populates this field with the maximum duration specified for the login to be in effect. Once the time is reached, the system automatically logs out the device.
Log Out Time	Cisco CallManager populates this field with the time specified for the logout to be in effect.

Configuring Speed Dial Buttons

You can configure speed-dial buttons for phones in the Cisco CallManager Administration if you want to provide speed dial buttons for users or if you are configuring phones that do not have a specific user assigned to them. Users can change the speed-dial buttons on their phones using the Cisco IP Phone User Options panes.

Procedure

- Step 1** From the Phone Configuration pane, click the Update Speed Dial buttons link at the top of the pane.



Note To display the Phone Configuration pane, choose **Device > Phone**. Enter your search criteria and click **Find**. Choose the phone for which you want to configure speed-dial buttons.

- Step 2** Enter the appropriate settings as described in [Table 42-2](#).
- Step 3** Click **Update** to apply the changes or click **Update and Close** to apply the changes and close the dialog.

Related Topics

- [Cisco IP Phone Configuration](#), page 42-1
- [Resetting a Phone](#), page 42-7
- [Adding a Directory Number](#), page 42-28
- [Updating a Directory Number](#), page 42-29
- [Cisco IP Phones](#), *Cisco CallManager System Guide*
- [Phone Features](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Speed Dial Configuration Settings

Table 42-2 describes the speed-dial button configuration settings.

Table 42-2 Speed Dial Configuration Settings

Field	Description
Speed Dial	This field identifies the speed-dial button on the phone or on the Cisco IP Phone 7914 Expansion Module.
Number	Enter the number you want dialed when the user presses the speed-dial button.
Label	Enter the text you want to appear for the speed dial button. This field is not available for the Cisco IP Phone 7910.

Related Topics

- [Cisco IP Phone Configuration](#), page 42-1
- [Adding a Directory Number](#), page 42-28
- [Updating a Directory Number](#), page 42-29
- [Configuring Speed Dial Buttons](#), page 42-20
- [Cisco IP Phones](#), *Cisco CallManager System Guide*
- [Phone Features](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Configuring Cisco IP Phone Services

From a Cisco IP Phone 7960/7940, users can access information services, such as weather, stock quotes, or other services available to their company. Using the Cisco CallManager Administration, you can set up the available services for phones. Users can modify the services using the Cisco IP Phone User Options panes. For information about the Cisco IP Phone User Options panes, refer to the *Cisco IP Phone 7960/7940 User Guide*. For more information on maintaining services in Cisco CallManager Administration, see the “[Cisco IP Phone Services Configuration](#)” section on page 35-1.

Subscribing to a Service

Perform the following steps to subscribe to new services for a phone.

Before You Begin

Add the services to Cisco CallManager. For more information, see the [“Adding a Cisco IP Phone Service”](#) section on page 35-2.

Procedure

- Step 1** Choose **Device > Phone**.
- The Find and List Phones pane displays.
- Step 2** Enter search criteria to locate a specific phone and click **Find**.
- A list of phones that match the search criteria appears.
- Step 3** Choose the phone to which you want to add a service.
- The Phone Configuration pane displays.
- Step 4** On the upper, right side of the pane, click the Update Services link.
- Step 5** From the Select a Service drop-down list box, choose the service you want to add to the phone.
- Step 6** Click **Continue**.
- The pane displays with the service you chose. If you want to choose a different service, click **Back** and repeat [Step 5](#).
- Step 7** Click **Subscribe**.
- The service appears in the Your Subscribed Services list.
-

Related Topics

- [Resetting a Phone, page 42-7](#)
- [Updating Services, page 42-24](#)
- [Unsubscribing from a Service, page 42-25](#)
- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Updating Services

Perform the following steps to update a service. You can update the service name and service parameter values, if necessary.

Procedure

- Step 1** Choose **Device > Phone**.
- The Find and List Phones pane displays.
- Step 2** Enter search criteria to locate a specific phone and click **Find**.
- A list of phones that match the search criteria appears.
- Step 3** Choose the phone for which you want to update a service.
- The Phone Configuration pane displays.
- Step 4** On the upper, right side of the pane, click the Update Services link.
- Step 5** From the Your Subscribed Services list, choose a service.
- Step 6** Update the appropriate parameter and click **Update**.
-

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Resetting a Phone, page 42-7](#)
- [Unsubscribing from a Service, page 42-25](#)
- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Unsubscribing from a Service

Perform the following steps to unsubscribe from a service.

Procedure

- Step 1** Choose **Device > Phone**.
- The Find and List Phones pane displays.
- Step 2** Enter search criteria to locate a specific phone and click **Find**.
- A list of phones that match the search criteria appears.
- Step 3** Choose the phone from which you want to delete a service.
- The Phone Configuration pane displays.
- Step 4** On the upper, right side of the pane, click the Update Services link.
- Step 5** From the Your Subscribed Services list, choose a service.
- Step 6** Click **Unsubscribe**.
- A warning message verifies that you want to unsubscribe from the service.
- Step 7** Click **OK** to unsubscribe or click **Cancel** to restore your previous settings.
-

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Resetting a Phone, page 42-7](#)
- [Subscribing to a Service, page 42-23](#)
- [Adding a Cisco IP Phone Service, page 35-2](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Finding a Phone

Because you might have thousands of Cisco IP phones in your network, Cisco CallManager lets you search for phones based on specified criteria. Follow these steps to search for a specific Cisco IP phone in the Cisco CallManager database.



Tips

For methods to limit your search, refer to the [“Phone Search”](#) section in the *Cisco CallManager System Guide*.

This list does not include analog phones and fax machines connected to gateways (such as a Cisco VG200). The list only includes phones configured in Cisco CallManager Administration.

Procedure

Step 1 Choose **Device > Phone**.

The Find and List Phones pane displays.

Step 2 Choose the field you want to use to locate a phone.



Note To find all phones registered in the database, choose Device Name from the list of fields, and choose “is not empty” from the list of patterns; then, click **Find**.

Step 3 Choose the appropriate search pattern for your text search. If you do not want to perform a text search, choose “is empty.”

Step 4 Enter your search text in the Find field, if any.

Step 5 If you choose calling search space or device pool in [Step 2](#), the options available in the database display. From the drop-down list box below the **Find** button, you can choose one of these options.

Step 6 Click **Find**.

A list of devices matching the criteria appears. The field you selected in [Step 2](#) determines how the devices in the list are sorted.

This pane also lists the total number of devices and panes on this pane.

Step 7 To view the next set of discovered devices, click **Next**.

**Note**

You can delete or reset multiple phones from the Find and List Phones pane by checking the check boxes next to the appropriate phones and clicking **Delete Selected** to delete the phones or clicking **Reset Selected** to reset the phones. You can choose all of the phones on the pane by checking the check box in the matching records title bar.

Related Topics

- [Configuring Cisco IP Phones, page 42-2](#)
- [Cisco IP Phones, Cisco CallManager System Guide](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Configuring Directory Numbers

Using Cisco CallManager, you can configure and modify directory numbers assigned to specific phones. These sections provide instructions for working with directory numbers.

Use this area of Cisco CallManager Administration to perform tasks such as adding or removing directory numbers, configuring call forward, call pickup, and call waiting, setting the display text that appears on the called party phone when a call is placed from a line, and disabling ring on a line.

Related Topics

- [Adding a Directory Number, page 42-28](#)
- [Deleting a Directory Number, page 42-30](#)
- [Updating a Directory Number, page 42-29](#)
- [Directory Number Configuration Settings, page 42-32](#)

Adding a Directory Number

Follow these instructions to add a directory number to a specific phone. You can configure the call waiting, call forward, and call pickup phone features while adding the directory number.

Before You Begin

You must add a Cisco IP phone to Cisco CallManager before adding a directory number. See the [“Adding a Phone” section on page 42-4](#) for details.

Procedure

- Step 1** Choose **Device > Phone**.
The Find and List Phones pane displays.
- Step 2** Enter search criteria to locate a specific phone and click **Find**.
A list of phones that match the search criteria displays.
- Step 3** Click the device name to which you want to add a directory number.
The Phone Configuration pane displays.
- Step 4** In the Directory Numbers list, click an unassigned line, such as Line 1 or Line 2.
The Configure a Directory Number pane displays.
- Step 5** Enter the appropriate settings as described in [Table 42-3](#).
- Step 6** Click **Insert**.
A message displays stating that the directory number has been added to the database.
- Step 7** Click **OK** to display the Phone Configuration pane. Click **Cancel** to return to the Directory Number Configuration pane.



Note You must restart the device before your changes take affect.

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Finding a Phone, page 42-26](#)
- [Adding a Phone, page 42-4](#)
- [Deleting a Directory Number, page 42-30](#)
- [Updating a Directory Number, page 42-29](#)
- [Directory Number Configuration Settings, page 42-32](#)
- [Cisco IP Phones, *Cisco CallManager System Guide*](#)
- [Phone Features, *Cisco CallManager System Guide*](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Updating a Directory Number

Follow these instructions to update a directory number assigned to a specific phone.

Procedure

-
- Step 1** Choose **Device > Phone**.
- The Find and List Phones pane displays.
- Step 2** Enter search criteria to locate a specific phone.
- A list of phones that match the search criteria displays.
- Step 3** Click the name of the phone to update.
- The Phone Configuration pane displays.
- Step 4** From the Directory Numbers list, click the line you want to update.
- The Directory Number Configuration pane displays.



Note If your phone uses a Cisco IP Phone 7914 Expansion Module, the Directory Numbers list displays the lines for the phone and for the Cisco IP Phone 7914 Expansion Module.

- Step 5** Update the appropriate settings as described in [Table 42-3](#).
- Step 6** Click **Update**.
- Step 7** Click **Restart Devices**.
-

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Finding a Phone, page 42-26](#)
- [Adding a Phone, page 42-4](#)
- [Adding a Directory Number, page 42-28](#)
- [Deleting a Directory Number, page 42-30](#)
- [Directory Number Configuration Settings, page 42-32](#)
- [Cisco IP Phones, Cisco CallManager System Guide](#)
- [Phone Features, Cisco CallManager System Guide](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)

Deleting a Directory Number

Perform the following procedure to delete a directory number from a specific phone.

Procedure

- Step 1** Choose **Device > Phone**.
- The Find and List Phones pane displays.
- Step 2** Enter the search criteria to locate a specific phone and click **Find**.
- A list of phones that match the search criteria displays.
- Step 3** Choose the device name that contains the directory number you want to delete.
- The Phone Configuration pane displays.

- Step 4** From the Directory Numbers list, choose the line you want to delete.
The Directory Number configuration pane displays.
- Step 5** Click **Delete**.
A message appears verifying that you want to delete the line.
- Step 6** Click **OK**.
The Phone Configuration pane displays with the line deleted.
- Step 7** Click **Reset Phone** to reset or restart the phone and apply the new settings.
Restarting the phone re-registers the phones with Cisco CallManager without shutting the phone down. Resetting the phone shuts down the phone and brings it back up (performs a complete shut-down and re-initialization of the phones).
-

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Finding a Phone, page 42-26](#)
- [Adding a Directory Number, page 42-28](#)
- [Updating a Directory Number, page 42-29](#)
- [Resetting a Phone, page 42-7](#)
- [Cisco IP Phones, *Cisco CallManager System Guide*](#)
- [Phone Configuration Checklist, *Cisco CallManager System Guide*](#)

Directory Number Configuration Settings

Table 42-3 describes the fields available on the Directory Number Configuration Settings pane.

Table 42-3 Directory Number Configuration Settings

Field	Description
Directory Number	<p>Enter a dialable phone number. Values can include numeric characters and route pattern wildcards and special characters except for (.) and (@). The directory number you enter can appear in more than one partition.</p> <p>If the words Shared Line appear in red next to the directory number, the directory number appears on more than one device in the same partition. Refer to the “Directory Numbers” section in the <i>Cisco CallManager System Guide</i> for more information.</p>
Partition	<p>Choose the partition to which the directory number belongs. Make sure the directory number you enter in the Directory Number field is unique within the partition you choose.</p>
Voice Message Box	<p>Enter the voice mailbox you want to associate with this line. When a call is forwarded to voice mail, the Cisco CallManager sends the number you enter here to your voice-mail application. The voice-mail system then leaves voice-mail messages in the configured mailbox.</p> <p>By default, the Cisco CallManager Administration enters the directory number in this field.</p> <p>During auto-registration, Cisco CallManager applies the default mask value you entered in the the Voice Message Box Mask field on the Cisco CallManager Configuration pane to this field.</p> <p>For example, if you enter 97281XXXXX in the Voice Message Box Mask field and you enter 30000 in the Voice Message Box field, Cisco CallManager identifies the voice message box for this directory number as 9728130000.</p>

Table 42-3 Directory Number Configuration Settings (continued)

Field	Description
Calling Search Space	<p>Choose the appropriate calling search space. A calling search space comprises a collection of partitions that are searched for numbers called from this directory number. The value you choose applies to all devices using this directory number.</p> <p>Changes cause update of the numbers listed in the Call Pickup Group field.</p>
Call Waiting	<p>Choose the appropriate call-waiting settings. This field determines whether this directory number uses call waiting when a line is busy (On), responds with a busy signal (Off), or uses the system-wide default setting (Default).</p> <p>The value you choose applies to all devices using this directory number.</p>
Active Auto Answer for this Directory Number	<p>Check the check box to enable the user to answer calls automatically when the user enables the headset button on the Cisco IP Phone 7960/7940.</p> <p>You cannot activate auto answer for a directory number with a shared line appearance. The Cisco CallManager automatically unchecks and disables this check box if you are configuring a directory number with a shared line appearance.</p>
Call Pickup Group	<p>Choose the number that can be dialed to answer calls to this directory number (in the specified partition).</p>
Forward All	<p>Enter the directory number to which all calls are forwarded. You can enter any dialable phone number, including an outside destination.</p> <p>The value you enter applies to all devices using this directory number.</p>

Table 42-3 Directory Number Configuration Settings (continued)

Field	Description
Forward Busy	<p>Enter the directory number to which a call is forwarded when the line is in use. You can enter any dialable phone number, including an outside destination.</p> <p>The value you enter applies to all devices using this directory number.</p>
Forward No Answer	<p>Enter the directory number to which a call is forwarded when no one answers after four rings. You can enter any dialable phone number, including an outside destination.</p> <p>The value you enter applies to all devices using this directory number.</p>
Forward On Failure	<p>Enter the directory number to which a call is forwarded when a CTI application fails.</p>

Table 42-3 Directory Number Configuration Settings (continued)

Field	Description
Calling Search Space	<p>Choose the calling search space to use when forwarding to the specified destination.</p> <p>You can configure calling search space for Forward All, Forward Busy, Forward No Answer, and Forward on Failure directory numbers. The value you choose applies to all devices using this directory number.</p> <p>If you set the Forward All Calling Search Space field to <none>, Cisco CallManager uses the calling search spaces of the line and the phone when the user forwards calls using the Cisco IP Phone User Options panes or the CFwdAll softkey on the phone. If you want to restrict users from forwarding calls on their phones, you must choose a restrictive calling search space from the Forward All Calling Search Space field; for example:</p> <p>You have two calling search spaces: Building and PSTN. The Building calling search space only allows users to call within the building, while the PSTN calling search space allows users to call within and outside the building. You assign the phone to the PSTN calling search space and the line on your phone to the Building calling search space. If you set the Call Forward All calling search space to <none>, the Cisco CallManager can forward calls to any number within the PSTN or building calling search spaces. To prevent the user from forwarding calls to numbers outside the building, set the Call Forward All calling search space to Building.</p>
Display	<p>Enter the text that you want to appear on the called party phone when a call is placed from this line; typically, use the user name or the directory number. You can enter up to 30 alphanumeric characters.</p> <p>Leave this field blank to display the extension.</p> <p>The value you enter applies only to the current device.</p>

Table 42-3 Directory Number Configuration Settings (continued)

Field	Description
Disable ring on this line	To stop the phone from ringing to indicate incoming calls, check the check box. This setting only applies to the current device.
External Phone Number Mask	Enter the phone number (or mask) used to send Caller ID information when placing a call from this line. You can enter a maximum of 30 number and “X” 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.

Related Topics

- [Cisco IP Phone Configuration, page 42-1](#)
- [Resetting a Phone, page 42-7](#)
- [Adding a Directory Number, page 42-28](#)
- [Updating a Directory Number, page 42-29](#)
- [Cisco IP Phones, Cisco CallManager System Guide](#)
- [Phone Features, Cisco CallManager System Guide](#)
- [Phone Configuration Checklist, Cisco CallManager System Guide](#)



Phone Button Template Configuration

Cisco CallManager includes several default phone button templates. When adding phones, you can assign one of these templates to the phones or create a new template.

Creating and using templates provides a fast way to assign a common button configuration to a large number of phones. For example, if users in your company do not use the conference feature, you can create a template that reassigns this button to a different feature, such as speed dial.

Make sure all phones have at least one line assigned. Normally, this is button 1. You can assign additional lines to a phone, depending on the Cisco IP phone model. Phones also generally have several features, such as speed dial and call forward, assigned to the remaining buttons.

The following sections provide details about using and working with the phone button templates:

- [Adding Phone Button Templates](#), page 43-2
- [Phone Button Configuration Settings](#), page 43-3
- [Modifying Phone Button Templates](#), page 43-3
- [Phone Button Templates](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Adding Phone Button Templates

Cisco CallManager includes default templates for each Cisco IP phone model. When adding phones, you can assign one of these templates to the phone or create one of your own.

Before You Begin

If you are creating a custom phone button template, refer to the guidelines for creating new phone button templates. See the “[Guidelines for Customizing Phone Button Templates](#)” section in the *Cisco CallManager System Guide*.

Procedure

- Step 1** Choose **Device > Phone Button Template**.
- Step 2** Choose a template and click **Copy** to create a new template.
- The new template exactly duplicates the existing template and automatically assigns it a new name. You must update this new template if you want it to differ from the original.
- Step 3** Update the appropriate settings as described in [Table 43-1](#).
- Step 4** Click **Insert** to add the new template.
- Step 5** Click **View Button Layout** to verify the button layout.
-

Related Topics

- [Adding Phone Button Templates](#), page 43-2
- [Modifying Phone Button Templates](#), page 43-3
- [Guidelines for Customizing Phone Button Templates](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*

Phone Button Configuration Settings

Table 43-1 describes the phone button configuration settings.

Table 43-1 Phone Button Configuration Settings

Field	Description
Template Name	Enter a unique name used by Cisco CallManager to identify the template.
Feature	Choose the function of the phone button you want to specify in the template.

Modifying Phone Button Templates

You can make changes to the default templates included with Cisco CallManager or to custom templates you created. You can rename existing templates and modify them to create new ones, update custom templates to add or remove features, lines, or speed dials, and delete templates that are no longer being used.

Related Topics

- [Renaming a Phone Button Template, page 43-4](#)
- [Deleting a Phone Button Template, page 43-5](#)
- [Updating a Phone Button Template, page 43-6](#)

Renaming a Phone Button Template

Use this procedure to rename a phone button template. Renaming a template does not affect the phones that use that template. All Cisco IP phones that use this template continue to use this template once it is renamed.

Procedure

- Step 1** Choose **Device > Phone Button Template**.
- A listing of current phone button templates appears in the Phone Button Templates list.
- Step 2** Choose the phone button template you want to rename.
- The Phone Button Template Configuration page displays.
- Step 3** In the Template Name field, enter the new name.
- Step 4** Click **Update**.
- The template redisplay with the new name.
-

Related Topics

- [Adding Phone Button Templates, page 43-2](#)
- [Deleting a Phone Button Template, page 43-5](#)
- [Updating a Phone Button Template, page 43-6](#)

Deleting a Phone Button Template

You can delete phone templates that are not currently assigned to any phone in your system. You cannot delete a template that is assigned to one or more devices, the last template for a model, or the default template for a model (specified on the Device Defaults Configuration screen.) You must reassign all Cisco IP phones that are using the template you want to delete to a different phone button template before you can delete the template.

Procedure

- Step 1** Choose **Device > Phone Button Template**.
- A listing of current phone button templates appears in the Phone Button Templates list.
- Step 2** Choose the phone button template you want to delete.
- The Phone Button Template Configuration page displays.
- Step 3** Click **Delete**.
- A message verifies that you want to delete the template.
- Step 4** Click **OK** to delete the template.
- A message verifies that the template was deleted.
- Step 5** Click **OK** to continue.
-

Related Topics

- [Adding Phone Button Templates, page 43-2](#)
- [Updating a Phone Button Template, page 43-6](#)
- [Renaming a Phone Button Template, page 43-4](#)

Updating a Phone Button Template

You can update a phone button template to add or remove features, add or remove lines and speed dials, or assign features, lines, and speed dials to different buttons on the phone. If you update a phone template, be sure to inform affected users of the changes.

Follow these instructions to update a phone button template.

**Note**

When you update a template, the change affects all phones that use the template.

Procedure

Step 1 Choose **Device > Phone Button Template**.

A listing of current phone button templates appears in the Phone Button Templates list.

Step 2 Choose the phone button template you want to update.

The phone button template configuration page displays.

Step 3 Update the appropriate settings as described in [Table 43-1](#).

Step 4 Click **Update**.

The template reappears with the changes assigned to it.

**Note**

After updating the template, you must restart devices using the template.

Step 5 Click **Restart Devices** to apply the updated phone button template.

Related Topics

- [Adding Phone Button Templates](#), page 43-2
- [Deleting a Phone Button Template](#), page 43-5
- [Renaming a Phone Button Template](#), page 43-4
- [Guidelines for Customizing Phone Button Templates](#), *Cisco CallManager System Guide*
- [Phone Configuration Checklist](#), *Cisco CallManager System Guide*



PART 7

User Configuration



Adding a New User

The User option in the Cisco CallManager Administration allows the administrator to add, search, display, and maintain information about Cisco CallManager users. This chapter describes the options for managing user directory information.

This chapter includes the following procedures:

- [Adding a User, page 44-2](#)
- [User Configuration Settings, page 44-2](#)
- [Configuring Application Profiles, page 44-3](#)
- [Associating Devices to a User, page 44-4](#)
- [Auto Attendant, page 44-6](#)
- [Extension Mobility, page 44-6](#)
- [SoftPhone, page 44-7](#)

Adding a User

The following procedure provides instructions on adding a user.

Procedure

-
- Step 1** Choose **User > Add a New User**.
- Step 2** Enter the appropriate settings as described in [Table 44-1](#).
- Step 3** When you have completed the user information, you can either
- Save your changes and add the user by clicking **Insert**.
 - Or, if you want to associate devices to this user, continue with the [“Associating Devices to a User”](#) procedure.
-

Related Topics

- [Adding a User, page 44-2](#)
- [User Configuration Settings, page 44-2](#)
- [Associating Devices to a User, page 44-4](#)
- [Using Basic Search, page 45-2](#)
- [Using Advanced Search, page 45-3](#)

User Configuration Settings

[Table 44-1](#) describes the user configuration setting.

Table 44-1 *User Configuration Settings*

Field	Description
First Name	Enter the user first name.
Last Name	Enter the user last name.
UserID	Enter the user identification name. Cisco CallManager does not permit modifying the user ID once it is created

Table 44-1 User Configuration Settings (continued)

Field	Description
User Password	Enter the user password.
Confirm Password	Enter the user password again.
PIN	Enter a Personal Identification Number (PIN).
Confirm PIN	Enter the PIN again.
Telephone Number	Enter the user telephone number.
Manager	Enter the name of the user manager ID. The manager name you enter must already exist in the directory as a user.
Department	Enter the user department number.
Enable CTI Application Use	To configure users so that they can use CTI applications, check the Enable CTI Application Use check box.

Configuring Application Profiles

After you add a new user, options in the Application Profile section of the User Information pane in the Cisco CallManager Administration allows you to configure the user profile. These profiles allows each user to personalize phone features, mobility, and Cisco IP SoftPhone capability.

Before you begin

Make sure the user is in the database. See the chapter on [“Searching the Global Directory” section on page 45-1](#) for more information.

You can create a profile for each of the applications that appears on the left in the Application Profile pane.

To return to the User Information pane to continue configuring profiles, Click **Personal Information**.

Associating Devices to a User

Once you have added a user, you can associate devices over which users will have control. Users can control some devices, such as phones. Other devices, such as CTI ports, can be controlled by applications that are identified as users. When users have control of a phone, they have the ability to control certain settings for that phone, such as speed dial and call forwarding.

The User Device Assignment window consists of a device filter section and a list of available devices.

Available Device List Filters

The device filter allows you to limit your list of devices by entering search criteria based on all or part of the device name, description, or directory number. To limit the list of available devices to a specific selection, enter the criteria by which you wish to search using the following methods:

- Choose device name, description, or directory number.
- Choose the comparison operator.
- Enter a text or number entry.

For example, to list all extensions that begin with “5”, you would choose “Directory Number” “begins with” and then enter **5** in the text box.

Available Devices

Once you have specified the search criteria to display devices, all available devices that match your criteria appear in the Available Devices list. The list displays in groups of 20 devices and you can navigate it using the buttons at the bottom of the window. You can page through the device list by clicking **First**, **Previous**, **Next**, and **Last**, or you can jump to a specific page by entering the page number in the page entry box and then clicking **Page**.

If you are modifying the device assignment for an existing user, the devices previously assigned to that user appear in a group at the beginning of the device list.

You can associate one or more devices to the user by checking the checkbox next to that device. If a device has multiple extensions associated with it, each line extension appears in the list. You need to choose only one line extension to choose all the lines associated with that device.

To assign devices to a user, you must access the User Information window for that user. See the chapter on [“Searching the Global Directory”](#) section on page 45-1 for information on accessing information on existing users.

Once the User Information window displays, perform the following procedure to assign devices.

Procedure

- Step 1** Click **Device Association** in the Application Profiles column.
- Step 2** You can limit the list of available devices by entering the search criteria in the Available Device List Filters section. You should specify
- The device name, description, or directory number
 - The comparison operator
 - A text or number entry
- Then, click **Select Devices**.
- Step 3** Check the check box of one or more devices you want to associate with the user. You can assign one primary extension from the devices to which the user is assigned by checking the radio button in the right column for that device.
- Step 4** When you have completed the assignment, click **Update** to assign devices to a user. Or, you can click **Personal Information** to return to the User Information window, **Back to user list** to return to the search list, or **Cancel Changes** to return to the User information window.
-

Related Topics

The following list contains additional information and procedures related to this section:

- [Adding a User, page 44-2](#)
- [Using Basic Search, page 15-3](#)
- [Using Advanced Search, page 15-3](#)

Auto Attendant

The Automated Attendant (AA) service answers incoming calls and prompts the caller for a user name or extension. The directory is scanned for a match to resolve the user name or extension and transfers the caller to the appropriate endpoint.

Procedure

Step 1 Choose **Auto Attendant** in the Application Profiles pane.

Step 2 Enter the Auto Attendant Name Dialing (LastFirstM).

If a same name or same numerical mapping occurs, a prompt returns indicating a duplicate key. At this point, you can either change the user name (through nicknames or removal of middle initials) or allow duplicates.

Step 3 Click **Insert**.

Extension Mobility

Extension Mobility allows a user to configure a Cisco IP Phone 7940 or Cisco IP Phone 7960 to appear as that user phone temporarily. The user can log in to a phone and their extension mobility profile (including line and speed dial numbers) resides on the phone. This feature is used primarily in environments where users are not permanently assigned to physical phones.

Procedure

Step 1 Choose **Extension Mobility** in the Application Profiles pane.

Step 2 Select the appropriate criteria from the pull down menus or Click **Select Profiles**.

A list of available profiles displays at the bottom of the pane.

Step 3 Check the appropriate box.

Step 4 Click **Update**.

SoftPhone

You can associate a device (line) to a user as a Cisco IP SoftPhone. This will enable the user to use their desktop PC to place and receive telephone calls and to control an IP telephone.

Include the IP Address or host name in the Associated PC field.

For more information, refer to the *Cisco IP SoftPhone Administrator Guide*

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/softphon/



Searching the Global Directory

The Global Directory for Cisco CallManager contains every user within a Cisco CallManager directory. Cisco CallManager uses Lightweight Directory Access Protocol (LDAP) to interface with a directory that contains user information. This is an embedded directory supplied with Cisco CallManager. Its primary purpose is to maintain the associations of devices with users.

Using either a basic or an advanced user search, you can access the Global Directory.

Refer the [“Adding a New User” section on page 44-1](#) for details on adding and configuring a new user.

This chapter includes the following topics:

- [Using Basic Search, page 45-2](#)
- [Using Advanced Search, page 45-3](#)

Using Basic Search

The Basic User search utility searches the first name, last name, and user ID fields for matches of any substring that you enter as search criteria. For example, if you enter “li” in the search field, the search results would include users whose first name, last name, or user ID matches that substring, as indicated in the following list:

Last name	First Name	User ID
Johnson	Charlie	cjohnson
Ni	Liang	lni
Collins	Manny	mcollins
Lin	Mike	michaell
Ivey	Gabriel	Gabrieli

If you enter two or more substrings separated by spaces, the search will look for matches for any substring in any of the three search fields.

The following procedure contains information about how to use the Global Directory Basic User Search engine.

Procedure

-
- Step 1** Choose **User > Global Directory**.
The User Search pane appears.
- Step 2** In the User Search field, enter the first name, last name, user ID, or substring of the user for whom you are searching.
- Step 3** From the resulting list of matching names, click on the desired name to get specific information on that user.

- Step 4** To modify this user information, update the appropriate fields as described in [Table 44-1](#) and click **Update**.
- Step 5** To view or modify this user device assignment, refer to the [“Associating Devices to a User”](#) section on [page 44-4](#) for more information.
-

Related Topics

- [Adding a User, page 44-2](#)
- [Associating Devices to a User, page 44-4](#)
- [Using Advanced Search, page 45-3](#)

Using Advanced Search

With the Advanced User Search utility, you can enter search criteria using three search fields and built-in Boolean logic to perform more complex searches.

If you enter two or more names or substrings separated by spaces in any one field, the search will interpret the request with the OR relationship operator, and will look for matches where any of your specified criteria is true. For example, if you enter “john jerry,” the search will return all users whose first names are John or Jerry.

If you enter a substring in two or more search fields, the search will interpret the request with the AND relationship operator and look for matches where both criteria are true. For example, if you enter “Ling” for first name and ‘Chu’ for last name, the search will return the user named Ling Chu.



Tips

Use ORs with multiple entries in a single field, and ANDs across fields. For example, if you enter:

First Name: john jane
Last Name: jones smith
UserID: jjones jsmith

the search will be for (firstname=”john” OR ‘jane’) AND lastname=”jones” OR “smith”) AND (userid=”jjones” OR “jsmith”).

The following procedure contains information about how to use the Global Directory Advanced User Search engine.

Procedure

Step 1 Choose **User > Global Directory**.

Step 2 Click **Advanced Search**.

The Advanced User Search pane appears.

Step 3 In the appropriate fields, enter the first name, last name, and user ID search criteria of the user for whom you are searching.

Step 4 Click **Search**.



Note Click **Refine Search** if you want to further limit your search. When refining a search, you can enter new search criteria and then click **Search**, or click **Reset** to populate the fields with the last search criteria. Click **Clear** to delete all entries from the fields.

Step 5 Once the desired user appears in the search list, click on the user ID or name.

Step 6 To modify this user information, update the appropriate fields as described in [Table 44-1](#) and click **Update**.

Step 7 To view or modify this user device assignment, refer to the [“Associating Devices to a User”](#) section on page 44-4 for more information.

Related Topics

- [Adding a User, page 44-2](#)
- [Associating Devices to a User, page 44-4](#)
- [Using Basic Search, page 45-2](#)



PART 8

Application Configuration



Plugin Configuration

Application plugins extend the functionality of the Cisco CallManager. For example, the Cisco WebAttendant plugin allows a receptionist to rapidly answer and transfer calls within an organization, and the JTAPI plugin allows a computer to host applications that access the CallManager via the Java Telephony Application Programming Interface (JTAPI).

This section contains instructions on how to install plugins:

- [Installing Plugins, page 46-1](#)

Installing Plugins

Perform the following procedure to install any plugin.

- Step 1** Choose **Application > Install Plugins**.
The Install Plugins page displays all available plugin applications.
 - Step 2** Click the icon next to the plugin you want to install.
 - Step 3** To download the plugin, click **Run this program from its current location or Save this program to disk**.
 - Step 4** Follow the instructions in the installation wizard to complete the installation.
-

Related Topics

- [Cisco WebAttendant Configuration, page 24-1](#)
- [Plugin Configuration, page 46-1](#)
- [Cisco TAPI Service Provider Installation and Configuration, page 47-1](#)
- [Cisco JTAPI Installation and Configuration, page 48-1](#)



Cisco TAPI Service Provider Installation and Configuration

The Cisco Telephony Application Programming Interface (TAPI) solution allows you to install multiple Cisco TAPI Service Providers (TSPs) on the same machine. This configuration allows TAPI applications to increase the number of lines that can be supported and to increase the amount of call traffic. Configure each Cisco TSP with a different username and password that is administered in the Cisco CallManager Directory. Configure each user in the Directory, so that no two users are associated to the same device. TSPs in the multiple TSP system do not communicate with each other and create a separate computer telephony integration (CTI) connection to the Cisco CallManager.



Note

If you have upgraded to Cisco CallManager 3.1, you must upgrade the TAPI client software on any application server or client workstation on which TAPI applications are installed. If you do not upgrade the TAPI client, your application will fail to initialize. If you need to upgrade, download the appropriate client from the Cisco CallManager Administration as described in the [“Installing the Cisco TSP” section on page 47-3](#).

The upgraded TAPI client software does not work with older releases of Cisco CallManager.

The following sections outline the installation of the Cisco TSP and describe some of the issues you need to be aware of after installation:

- [Installing the Cisco TSP, page 47-3](#)
- [Activating the Cisco TSP, page 47-4](#)
- [Configuring the Cisco TSP, page 47-6](#)
- [Cisco TSP Configuration Settings, page 47-7](#)
- [Installing the Wave Driver, page 47-21](#)
- [Saving Wave Driver Information, page 47-23](#)
- [Verifying the Wave Driver Exists, page 47-24](#)
- [Verifying the Cisco TSP Installation, page 47-25](#)
- [Setting up Client-Server Configuration, page 47-26](#)
- [Uninstalling the Wave Driver, page 47-26](#)
- [Removing the Cisco TSP, page 47-28](#)
- [Managing the Cisco TSP, page 47-29](#)

Installing the Cisco TSP

Install the Cisco TSP software either directly from the Cisco CallManager CD-ROM or from Cisco CallManager Administration. For information on installing plugins from the Cisco CallManager, see the [“Installing Plugins” section on page 46-1](#).

To install the Cisco TSP from the Cisco CallManager CD-ROM, perform the following steps.

**Note**

If you install TSP 3.1 on a system that contains a previous version of TSP, the installation program deletes the old version and installs TSP 3.1. The installation wizard varies depending on whether you have a previous version of TSP installed.

**Note**

Installing multiple TSPs installs multiple CiscoTSPXXX.tsp and CiscoTUIISPXXX.dll files in the same Windows system directory.

Procedure

- Step 1** Insert the Cisco CallManager CD-ROM.
- Step 2** Double-click **My Computer**.
- Step 3** Double-click the CD-ROM drive.
- Step 4** Double-click the **Installs** folder.
- Step 5** Double-click **Cisco TSP.exe**.
- Step 6** Follow the online instructions.

Next Steps

You should install Cisco wave driver if you plan to use first-party call control. (Do this even if you are performing your own media termination.) For more information, see the [“Installing the Wave Driver” section on page 47-21](#).

Activating the Cisco TSP

You can install up to 10 TSPs on a computer. Use the following procedure to activate each of these TSPs. When you install a Cisco TSP, you add it to the set of active TAPI service providers. The TSP displays as CiscoTSPXXX, where X is between 001 and 010. If a TSP has been removed or if some problem has occurred, you can manually add it to this set.

To manually add the Cisco TSP to the list of telephony drivers, perform the following steps.

Procedure for Windows 2000

- Step 1** Open the Control Panel.
- Step 2** Double-click **Phone and Modem Options**.
- Step 3** On the Phone and Modem Options dialog box, click the **Advanced** tab.



Note If the Cisco TSP is either not there or you removed it previously and want to add it now, you can do so from this window.

- Step 4** Click **Add**.
 - Step 5** On the Add Provider dialog box, choose the appropriate TSP. Labels identify the TSPs in the Telephony providers pane as CiscoTSPXXX, where XXX is between 001 and 010.
 - Step 6** Click **Add**.
The TSP you chose displays in the provider list on the Phone and Modem Options window.
 - Step 7** Configure the Cisco TSP as described in the [“Configuring the Cisco TSP” section on page 47-6](#) or click **Close** to complete the setup.
-

Procedure for Windows NT, Windows 98, and Windows 95

Step 1 Open the Control Panel.

Step 2 Double-click **Telephony**.

Step 3 Click the **Telephony Drivers** tab.



Note If the Cisco TSP is either not there or you removed it previously and want to add it now, you can do so from this window.

Step 4 Click **Add**.

Step 5 On the Add Provider dialog box, choose the appropriate TSP. Labels identify the TSPs in the Telephony providers pane as CiscoTSPXXX, where XXX is between 001 and 010.

Step 6 Click **Add**.

The Provider list on the Telephony Drivers window now includes the CiscoTSPXXX range 001 - 010.

Step 7 Configure the Cisco TSP as described in the [“Configuring the Cisco TSP”](#) section on page 47-6 or click **Close** to complete the setup.

Configuring the Cisco TSP

You configure the Cisco TSP by setting parameters on the Cisco IP-PBX Service Provider configuration window. Perform the following steps to configure Cisco TSP.

Procedure for Windows 2000

- Step 1** Open the Control Panel.
- Step 2** Double-click **Phone and Modem Options**.
- Step 3** Choose the Cisco TSP you want to configure.
- Step 4** Click **Configure**.
The system displays the Cisco IP PBX Service Provider dialog box.
- Step 5** Enter the appropriate settings as described in [“Cisco TSP Configuration Settings” section on page 47-7](#).
- Step 6** Click **OK** to save changes.



Note After the TSP is configured, you must restart the telephony service before an application can run and connect with its devices.

Procedure for Windows NT, Windows 98, and Windows 95

- Step 1** Open the Control Panel.
- Step 2** Double-click **Telephony**.
- Step 3** Choose the Cisco TSP you want to configure.
- Step 4** Click **Configure**.
The system displays the Cisco IP PBX Service Provider dialog box.
- Step 5** Enter the appropriate settings as described in [“Cisco TSP Configuration Settings” section on page 47-7](#).

Step 6 Click **OK** to save changes.



Note

After configuring the TSP, you must restart the telephony service before an application can run and connect with its devices.

Cisco TSP Configuration Settings

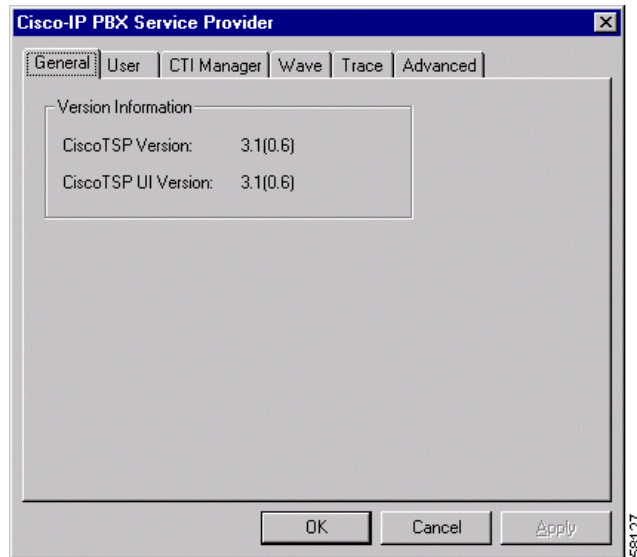
The following sections describe the fields on the Cisco_IP PBX Service Provider dialog box:

- [General Tab, page 47-8](#)
- [User Tab, page 47-9](#)
- [CTI Manager Tab, page 47-11](#)
- [Wave Tab, page 47-13](#)
- [Trace Tab, page 47-16](#)
- [Advanced Tab, page 47-19](#)

General Tab

The General Tab displays TSP and TSPUI version information, as illustrated in [Figure 47-1](#).

Figure 47-1 Cisco-IP PBX Service Provider General Tab



User Tab

The User tab allows you to configure security information, as illustrated in [Figure 47-2](#).

Figure 47-2 Cisco-IP PBX Service Provider User Tab

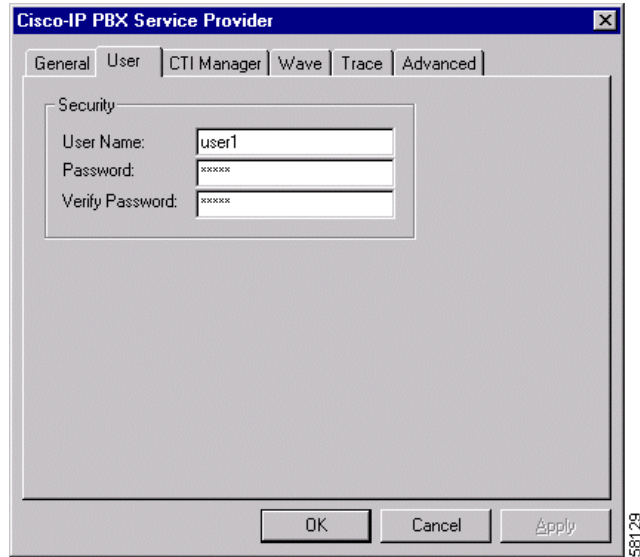


Table 47-1 contains a list of the fields for the User tab that must be set and their descriptions.

Table 47-1 User Tab Configuration Fields

Field	Description
User Name	<p>Enter the user name of the user you want to give access to devices. This TSP can access devices and lines associated with this user. Make sure this user is also configured in the Cisco CallManager, so that TSP can connect to Cisco CallManager.</p> <p>The TSP configuration registry keys store the user name and password you enter.</p> <p>Note You can designate only one user name and password to be active at a time for a TSP.</p>
Password	Enter the password associated with the user you entered in the User Name field. The computer encrypts the password and stores it in the registry.
Verify Password	Reenter the user password.

CTI Manager Tab

The CTI Manager tab allows you to configure primary and secondary CTI Manager information, as illustrated in [Figure 47-3](#).

Figure 47-3 Cisco-IP PBX Service Provider CTI Manager Tab

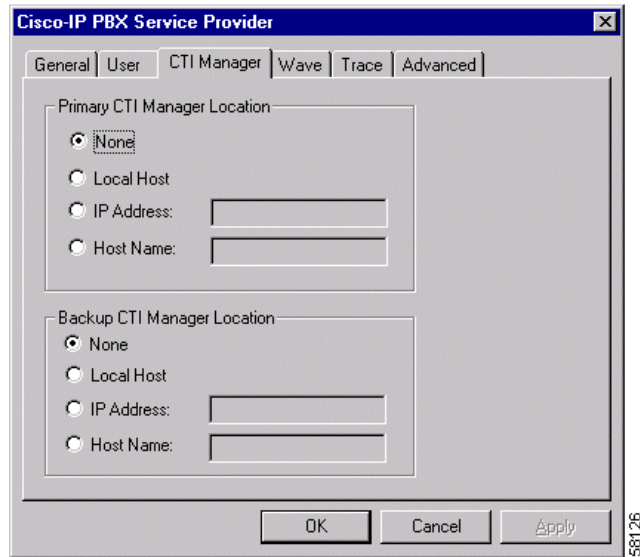


Table 47-2 contains a list of the CTI Manager tab fields that must be set and their descriptions.

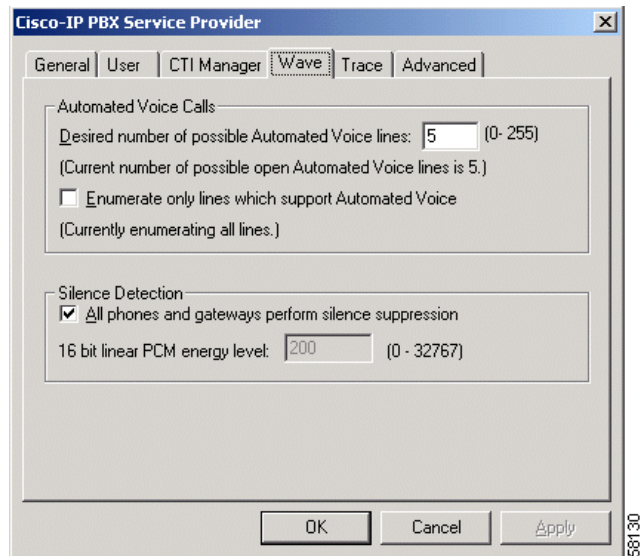
Table 47-2 CTI Manager Configuration Fields

Field	Description
Primary CTI Manager Location	<p>Specifies the CTI Manager to which the TSP attempts to connect first.</p> <p>If the TSP is on the same computer as the primary CTIManager, choose the Local Host radio button.</p> <p>If the primary CTIManager is on a different computer, choose the IP Address radio button and enter the IP address of primary CTIManager or choose the Host Name radio button and enter the host name of primary CTI Manager.</p>
Backup CTI Manager Location	<p>Specifies the CTI Manager to which the TSP attempts to connect if a connection to the primary CTI Manager fails.</p> <p>If the TSP is on the same computer as the backup CTIManager, choose the Local Host radio button.</p> <p>If the backup CTIManager is on a different computer, choose the IP Address radio button and enter the IP address of backup CTIManager or choose the Host Name radio button and enter the host name of backup CTI Manager.</p>

Wave Tab

The Wave tab allows you to configure settings for your wave devices, as illustrated in [Figure 47-4](#).

Figure 47-4 Cisco-IP PBX Service Provider Wave Tab



[Table 47-3](#) contains a list of the Wave tab fields that must be set and their descriptions.

Table 47-3 Wave Tab Configuration Fields

Field	Description
Automated Voice Calls	<p>The number of Cisco wave devices you are using determines the possible number of automated voice lines. (The default is 5.) You can open as many CTI ports as the number of Cisco wave devices configured. For example, if you enter “5,” you need to create five CTI port devices in Cisco CallManager. If you change this number, you need to remove and then reinstall any Cisco wave devices that you installed.</p> <p>You can only configure a maximum of 255 wave devices for all installed TSPs because Microsoft limits the number of wave devices per wave driver to 255.</p> <p>When you configure 256 or more wave devices (including Cisco or other wave devices), Windows displays the following error when you access the Sounds and Multimedia control panel: “An Error occurred while Windows was working with the Control Panel file C:\Winnt\System32\MMSYS.CPL.” TSP can still handle the installed Cisco wave devices as long as you have not configured more than 255 Cisco devices.</p> <p>The current number of possible automated voice lines designates the maximum number of lines that can be simultaneously opened using both LINEMEDIAMODE_AUTOMATEDVOICE and LINEMEDIAMODE_INTERACTIVEVOICE.</p> <p>If you are not developing a third-party call control application, check the Enumerate only lines that support automated voice check box, so that the Cisco TSP detects only lines associated with a CTI port device.</p>

Table 47-3 Wave Tab Configuration Fields (continued)

Field	Description
Silence Detection	<p>If you use silence detection, this check box notifies the wave driver which method to use to detect silence on lines that support automated voice calls using the Cisco Wave Driver. If the check box is checked (default), the wave driver searches for the absence of audio-stream RTP packets. Because all devices on the network suppress silence and stop sending packets, this method provides a very efficient way for the wave driver to detect silence.</p> <p>However, if some phones or gateways do not perform silence suppression, the wave driver must analyze the content of the media stream and, at some threshold, declare that silence is in effect. This CPU-intensive method handles media streams from any type of device.</p> <p>If some phones or gateways on your network do not perform silence suppression, you must specify the energy level at which the wave driver declares that silence is in effect. This value of the 16-bit linear PCM energy level ranges from 0 to 32767, and the default is 200. If all phones and gateways perform silence suppression, the system ignores this value.</p>

Trace Tab

The Trace tab allows you to configure various trace settings, as illustrated in [Figure 47-5](#). Changes to trace parameters take effect immediately, even if TSP is running.

Figure 47-5 Cisco-IP PBX Service Provider Trace Tab

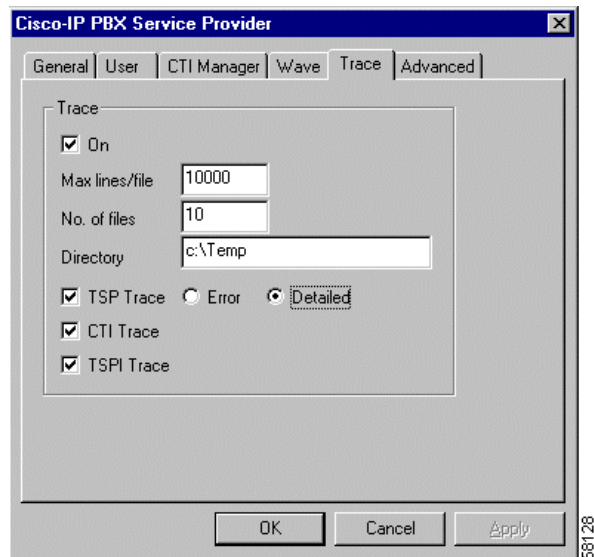


Table 47-4 contains a list of the Trace tab fields that must be set and their descriptions.

Table 47-4 Trace Tab Configuration Fields

Field	Description
On	<p>Allows you to enable Global CiscoTSP trace.</p> <p>Check the check box to enable CiscoTSP trace. When you enable trace, you can modify other trace parameters in the dialog box. The CiscoTSP trace depends on the other values you enter in these fields.</p> <p>Uncheck the check box to disable CiscoTSP trace. When you disable trace, you cannot choose any trace parameters in the dialog box, and TSP ignores the values entered in these fields.</p>
Max lines/file	<p>Specifies the maximum number of lines the trace file can contain. The default is 10,000. Once the file contains the maximum number of lines, trace opens the next file and writes to that file.</p>
No. of files	<p>Specifies the maximum number of trace files. The default is 10. File numbering occurs in a rotating sequence starting at 0. The counter restarts at 0 after it reaches the maximum number of files minus one.</p>
Directory	<p>Specifies the location in which trace files for all Cisco TSPs are stored. Make sure that the specified directory exists.</p> <p>The system creates a subdirectory for each Cisco TSP. For example, the CiscoTSP001Log directory stores Cisco TSP 1 log files. The system creates trace files with filename TSP001Debug000xxx.txt for each TSP in its respective subdirectory.</p>

Table 47-4 Trace Tab Configuration Fields (continued)

Field	Description
TSP Trace	<p>Activates internal TSP tracing. When you activate TSP tracing, Cisco TSP logs internal debug information that you can use for debugging purposes. You can choose one of the following levels:</p> <p>Error—Logs only TSP errors.</p> <p>Detailed—Logs all TSP details (i.e., log function calls in the order they are called.)</p> <p>The system checks the TSP Trace check box and chooses the Error radio button by default.</p>
CTI Trace	<p>Traces all messages and function calls between TAPI and Cisco TSP. The system leaves this check box unchecked by default.</p> <p>If you check the check box, TSP traces all the function calls made by TAPI to Cisco TSP with parameters and messages (events) from Cisco TSP to TAPI.</p>
TSPI Trace	<p>Traces messages flowing between Cisco TSP and CTI. Cisco TSP communicates with the CTI Manager. By default, the system leaves the check box unchecked.</p>

Advanced Tab

The Advanced tab allows you to configure timer settings, as illustrated in [Figure 47-6](#).

**Note**

These timer settings meant for advanced users only rarely change.

Figure 47-6 Cisco-IP PBX Service Provider Advanced Tab

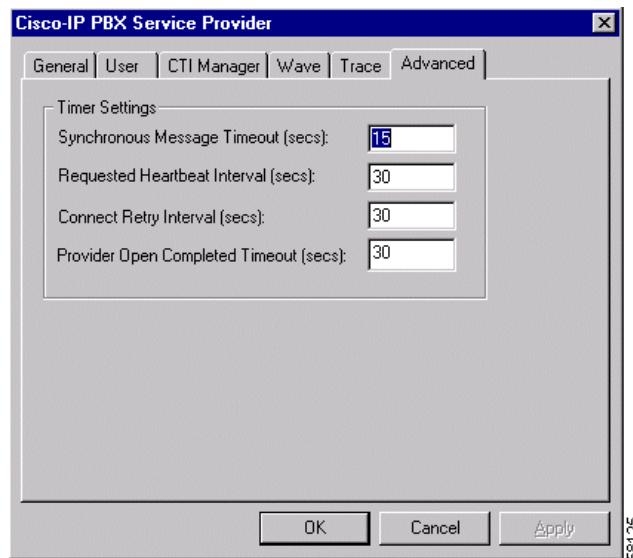


Table 47-5 contains a list of the Advanced tab fields that must be set and their descriptions.

Table 47-5 Advanced Configuration Fields

Field	Description
Synchronous Message Timeout (secs)	Designates the time the TSP waits to receive a response to a synchronous message. The value displays in seconds, and the default is 15. Range goes from 5 to 60 seconds.
Requested Heartbeat Interval (secs)	Designates the time the heartbeat messages are sent from TSP to detect whether the CTI Manager connection is still alive. TSP sends heartbeats when no traffic exists between the TSP and CTI Manager for 30 seconds or more. The default interval is 30 seconds. Range goes from 30 to 300 seconds.
Connect Retry Interval (secs)	Designates the interval between reconnection attempts after a CTI Manager connection failure. The default is 30 seconds. Range goes from 10 to 300 seconds.
Provider Open Completed Timeout (secs)	Designates the time the TSP waits for a Provider Open Completed Event. This event indicates the initialization of CTI Manager is done and is ready to serve TSP requests. This initialization time is directly proportional to the number of devices configured in the system. The default value is 30 seconds. Range goes from 5 to 300 seconds.

Installing the Wave Driver

You can use the Cisco wave driver with Windows 2000 and Windows NT only. Windows 98 and Windows 95 do not support it.

You should install Cisco wave driver if you plan to use first-party call control. (Do this even if you are performing your own media termination.)



Caution

Because of a restriction in Windows NT, the software may overwrite or remove existing wave drivers from the system when you install or remove the Cisco wave driver on a Windows NT system. The procedures in this section for installing and uninstalling the Cisco wave driver on Windows NT include instructions on how to prevent existing wave drivers from being overwritten or removed.

To install the Cisco wave driver, perform the following steps.

Procedure for Windows 2000

- Step 1** Open the Control Panel.
- Step 2** Double-click **Add/Remove Hardware**.
- Step 3** Click **Next**.
- Step 4** Click **Add/Troubleshoot a Device** and click **Next**.
- Step 5** Click **Add a New Device** and click **Next**.
- Step 6** Click **No, I want to select the hardware from a list**.
- Step 7** Choose **Sound, video and game controllers** and click **Next**.
- Step 8** Click **Have Disk**.
- Step 9** Click **Browse** and change to the Wave Drivers folder in the folder where the Cisco TSP is installed.
- Step 10** Choose **OEMSETUP.INF** and click **Open**.
- Step 11** In the Install From Disk window, click **OK**.
- Step 12** The Cisco TAPI Wave Driver displays on the screen. Click **Next**.
- Step 13** Click **Next**.

- Step 14** Click **Yes**.
 - Step 15** Click **Finish**.
 - Step 16** Click **Yes** to restart.
-

Procedure for Windows NT

- Step 1** Before you add the Cisco wave driver, you must save the wave driver information from the registry in a separate file as described in the [“Saving Wave Driver Information”](#) section on page 47-23.
 - Step 2** Open the Control Panel.
 - Step 3** Double-click **Multimedia**.
 - Step 4** Click **Next**.
 - Step 5** Click **Add**.
 - Step 6** Click **Unlisted** or **Updated Driver**.
 - Step 7** Click **OK**.
 - Step 8** Click **Browse** and change to the Wave Drivers folder in the folder where the Cisco TSP is installed.
 - Step 9** Click **OK**. Follow the online instruction, but *do not restart the system when prompted*.
 - Step 10** Examine the contents of the registry to verify the new driver was installed and the old drivers still exist, as described in the [“Verifying the Wave Driver Exists”](#) section on page 47-24.
 - Step 11** Restart the computer.
-

Saving Wave Driver Information

Use the following steps to save wave driver information from the registry in a separate file. You must perform this procedure when installing or uninstalling the Cisco wave driver on a Windows NT computer.

Procedure

- Step 1** Click **Start > Run**.
 - Step 2** Enter **regedit** in the text box.
 - Step 3** Click **OK**.
 - Step 4** Choose the Drivers32 key located in the following path:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\
CurrentVersion
 - Step 5** Choose **Registry > Export Registry File**.
 - Step 6** Enter a filename and choose the location to save.
 - Step 7** Click **Save**.
The file receives a .reg extension.
-

Verifying the Wave Driver Exists

When you install or uninstall the Cisco wave driver, you must verify whether it exists on your system. Use these steps to verify whether the wave driver exists.

Procedure

- Step 1** Click **Start > Run**.
 - Step 2** Enter **regedit** in the text box.
 - Step 3** Click **OK**.
 - Step 4** Choose the Drivers32 key located in the following path:
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion
 - Step 5** If you are installing the wave driver, make sure the driver “avaudio32.dll” displays in the data column. If you are uninstalling the wave driver, make sure the driver “avaudio32.dll does not display in the data column. This designates the Cisco wave driver.
 - Step 6** Verify that the previously existing wave values appear in the data column for wave1, wave2, wave3, and so on. You can compare this registry list to the contents of the .reg file you saved in the [“Saving Wave Driver Information” section on page 47-23](#) by opening the .reg file in a text editor and viewing it and the registry window side-by-side.
 - Step 7** If necessary, add the appropriate waveX string values for any missing wave values that should be installed on the system. For each missing wave value, choose **Edit > New > String Value** and enter a value name. Then, choose **Edit > Modify**, enter the value data, and click **OK**.
 - Step 8** Close the registry by choosing **Registry > Exit**.
-

Verifying the Cisco TSP Installation

You can use the Microsoft Windows Phone Dialer Application to verify that the Cisco TSP is operational. For Windows NT and Windows 2000, locate the dialer application in

C:\Program Files\Windows NT\dialer.exe

For windows 95 and Windows 98, locate the dialer application in

C:\Windows\dialer.exe

Procedure For Windows 2000

- Step 1** Open the Dialer application by locating it in Windows Explorer and double-clicking it.
 - Step 2** Choose **Edit > Options**.
 - Step 3** Choose **Phone** as the Preferred Line for Calling.
 - Step 4** In the Line Used For area, choose one of the Cisco Lines in the Phone Calls drop-down menu.
 - Step 5** Click **OK**.
 - Step 6** Click **Dial**.
 - Step 7** Enter a number to dial, choose **Phone Call** in the Dial as box, and then click **Place Call**.
-

Procedure for Windows NT, Windows 98, and Windows 95

- Step 1** Open the Dialer application by locating it in Windows Explorer and double-clicking it:

A dialog box appears requesting the line and address that you want to use. If no lines are listed in the **Line** drop-down list box, a problem may exist between the Cisco TSP and the Cisco CallManager.
- Step 2** Choose one of the lines from the Line drop-down menu. Make sure Address is set to **Address 0**.
- Step 3** Click **OK**.

Step 4 Enter a number to dial.

If the call succeeds, you have verified that the Cisco TSP is operational on the machine where the Cisco TSP is installed.

If you encounter problems during this procedure, or if no lines appear in the line drop-down list on the dialer application, check the following items:

- Make sure the Cisco TSP is configured properly.
- Test the network link between the Cisco TSP and the Cisco CallManager by using the ping command to check connectivity.
- Make sure the Cisco CallManager server is functioning.

Setting up Client-Server Configuration

For information on setting up a client-server configuration (Remote TSP) in Windows 2000, refer to the Microsoft Windows Help feature. For information on client-server configuration in Windows NT, refer to Microsoft White Papers.

Uninstalling the Wave Driver

To remove the Cisco wave driver, perform the following steps.

Procedure for Windows 2000

- Step 1** Open the Control Panel.
- Step 2** Double-click **Add/Remove Hardware**.
- Step 3** Click **Next**.
- Step 4** Choose **Uninstall/Unplug a device** and click **Next**.
- Step 5** Choose **Uninstall a device** and click **Next**.
- Step 6** Choose **Cisco TAPI Wave Driver** and click **Next**.
- Step 7** Choose **Yes, I want to uninstall this device** and click **Next**.

- Step 8** Click **Finish**.
- Step 9** Restart the computer.
-

Procedure for Windows NT

- Step 1** Before you uninstall the Cisco wave driver, you must save the wave driver information from the registry in a separate file. For information on how to save the wave drive information to a separate file, see the [“Saving Wave Driver Information”](#) section on page 47-23.
- Step 2** After the registry information is saved, open the Control Panel.
- Step 3** Double-click **Multimedia**.
- Step 4** Click the **Devices** tab.
- Step 5** Click the ‘+’ symbol next to Audio Devices to view all the audio devices.
- Step 6** Click **Audio** for Cisco Sound System.
- Step 7** Click **Remove**.
- Step 8** Click **Finish**. *Do not restart the system.*
- Step 9** Verify that the Cisco wave driver was removed and the old drivers still exist. For information on how to do this, see the [“Verifying the Wave Driver Exists”](#) section on page 47-24.



Note When you verify the removal of the driver, make sure that Cisco wave driver “avaudio32.dll” does not appear in the data column.

- Step 10** Restart the computer.
-

Removing the Cisco TSP

This process removes the Cisco TSP from the provider list but does not uninstall the TSP. To make these changes, perform the following steps.

Procedure for Windows 2000

- Step 1** Open the Control Panel.
 - Step 2** Double-click the **Phone and Modem** icon.
 - Step 3** Click the **Advanced** tab.
 - Step 4** Choose the Cisco TSP you want to remove.
 - Step 5** Click **Remove** to delete the Cisco TSP from the list.
-

Procedure for Windows NT, Windows 98, and Windows 95

- Step 1** Open the Control Panel.
 - Step 2** Double-click the **Telephony** icon.
 - Step 3** Click the **Advanced** tab.
 - Step 4** Choose the Cisco TSP you want to remove.
 - Step 5** Click **Remove** to delete the Cisco TSP from the list.
-

Managing the Cisco TSP

You can perform the following actions on all installed TSPs:

- Reinstall the existing Cisco TSP version
- Upgrade to the newer version of the Cisco TSP
- Uninstall the Cisco TSP

You cannot change the number of installed Cisco TSPs when you reinstall or upgrade the CiscoTSPs.

Related Topics

- [Reinstalling the Cisco TSP, page 47-29](#)
- [Upgrading the Cisco TSP, page 47-30](#)
- [Uninstalling the Cisco TSP, page 47-31](#)

Reinstalling the Cisco TSP

Use the following procedure to reinstall the Cisco TSP on all supported platforms.

Procedure

-
- Step 1** Open the Control Panel and double-click **Add/Remove Programs**.
 - Step 2** Choose CiscoTSP and click **Add/Remove**.
The Cisco TSP maintenance install dialog box displays.
 - Step 3** Click **Reinstall TSP 3.1(0.X)** radio button and click **Next**.
 - Step 4** Follow the online instructions.



Note The installation program prompts you to restart the computer if TSP files are locked.

Upgrading the Cisco TSP

Use the following procedure to reinstall the Cisco TSP on all supported platforms.

Procedure

- Step 1** Double-click CiscoTSP.exe.
- Step 2** The CiscoTSP maintenance install dialog box displays.
- If CiscoTSP.exe contains different version of Cisco TSP than you have installed, the installation program displays Upgrade from TSP 3.1(0.X) to 3.1(0.Y) or Uninstall options.
- Step 3** Choose **Upgrade from TSP 3.1(0.X) to 3.1(0.Y)** radio button and click **Next**.
- Step 4** Follow the online instructions.



Note The installation program prompts you to restart the computer if TSP files are locked.

Uninstalling the Cisco TSP

Use the following procedure to reinstall the Cisco TSP on all supported platforms.

Procedure

- Step 1** Open the Control Panel and double-click **Add/Remove Programs**.
- Step 2** Choose CiscoTSP and click **Add/Remove**.
The Cisco TSP maintenance install dialog box displays.
- Step 3** Choose **Uninstall: Remove the installed TSP** radio button and click **Next**.
- Step 4** Follow the online instructions.



Note The installation program prompts you to restart the computer if TSP files are locked.



Cisco JTAPI Installation and Configuration

Cisco Java Telephony API (JTAPI) implementation comprises Java classes that reside on all client machines running Cisco JTAPI applications. Installation of the Cisco JTAPI implementation must take place before Cisco JTAPI applications will function correctly. Make sure the Cisco JTAPI classes are installed wherever JTAPI applications will run, whether on Cisco CallManager, on a separate machine, or on both. Installation requires 5 MB of local disk space.



Note

If you have upgraded to Cisco CallManager 3.1, you must upgrade the JTAPI client software on any application server or client workstation on which JTAPI applications are installed. If you do not upgrade the JTAPI client, your application will fail to initialize. If you need to upgrade, download the appropriate client from the Cisco CallManager Administration as described in the [“Installing the Cisco JTAPI Software”](#) section on page 48-2.

The upgraded JTAPI client software does not work with older releases of Cisco CallManager.

This section discusses the software installation and configuration required to ready the Cisco JTAPI environment for programming and running applications.

- [Installing the Cisco JTAPI Software](#), page 48-2
- [Verifying the Installation](#), page 48-4

- [Configuring Cisco JTAPI Tracing](#), page 48-4
- [Administering User Information for JTAPI and TAPI Applications](#), page 48-15

Installing the Cisco JTAPI Software

The Cisco JTAPI installation utility installs the following items on the local disk drive:

- JTAPI java classes in %SystemRoot%\java\lib
- JTAPI Preferences (jtprefs.exe) in Program Files\JTAPITools
- JTAPI sample applications (makecall, jtrace) in Program Files\JTAPITools
- JTAPI documentation in Program Files\JTAPITools\doc



Note

To run JTAPI applications, you need a Java 1.1-compatible environment such as the Sun JDK 1.1.x, JDK 1.2, or Microsoft Virtual Machine (bundled with Internet Explorer 4.0 and higher). Cisco JTAPI will also run on Sun JDK1.2.

To use JTPREFS with Cisco JTAPI, however, requires Microsoft Java Virtual Machine 5.00.3190 or later. For information on JTPrefs, see the “[Configuring Cisco JTAPI Tracing](#)” section on page 48-4.

If you are installing Cisco JTAPI on a Windows 2000 workstation or server, you already have a compatible version of the Microsoft Virtual Machine. On all other Microsoft platforms such as Windows 95, Windows 98, and Windows NT, verify the current version of the Microsoft Virtual Machine by running the command "jview /?" and noting the version printed at the top of the console. You can download the latest version of the Microsoft Java Virtual Machine from <http://www.microsoft.com/java>.

Perform the following steps to install the Cisco JTAPI software.

Procedure

- Step 1** Log in to the computer where you want to install the Cisco JTAPI client software.
- Step 2** Close all Windows programs.
- Step 3** Open a web browser.
- Step 4** Go to the Cisco CallManager administration panes:
`http://Name/CCMAdmin/main.asp`
where:
- Name* specifies the name or IP address of the Cisco CallManager
- Step 5** Choose **Application > Install Plugins**.
- Step 6** Choose the **Cisco JTAPI** link.
- Step 7** Save the file on your desktop.
- Step 8** Follow the instructions in the popup windows.



Note Install Cisco JTAPI software on the default drive as directed by the installation software. When Windows NT is installed in C:\WINNT, the default directory, for example, is C:\WINNT\Java\lib.

Verifying the Installation

To verify the JTAPI installation, you can use the makecall application that allows you to place a call via JTAPI. Perform the following procedure to use the makecall application.

Procedure

- Step 1** From the Windows NT command line, navigate to the directory where you installed Cisco JTAPI Tools. By default, this directory is C:\Program Files\JTAPITools.
- Step 2** Execute the following command:
- Jview makecall** <server name> <login> <password> **1000** <phone1> <phone2>
- where:

server name specifies the hostname or IP address of the Cisco CallManager (for example, CTISERVER).

phone1 and *phone2* designate directory numbers of IP phones or virtual phones that the user controls according to the user configuration. See the [“Adding a User” section on page 44-2](#) for details.

For *login* and *password*, use the user ID and password that you configured in the Cisco CallManager User Configuration pane.

Configuring Cisco JTAPI Tracing

Use the Cisco JTAPI tracing preferences application (JTPREFS.EXE) to configure trace levels and trace destinations. Installation of the Cisco JTAPI Preferences into the Program Files\JTAPITools directory utility takes place by default. To open the Cisco JTAPI Preferences utility, choose **Start > Programs > Cisco JTAPI > JTAPI Preferences**.

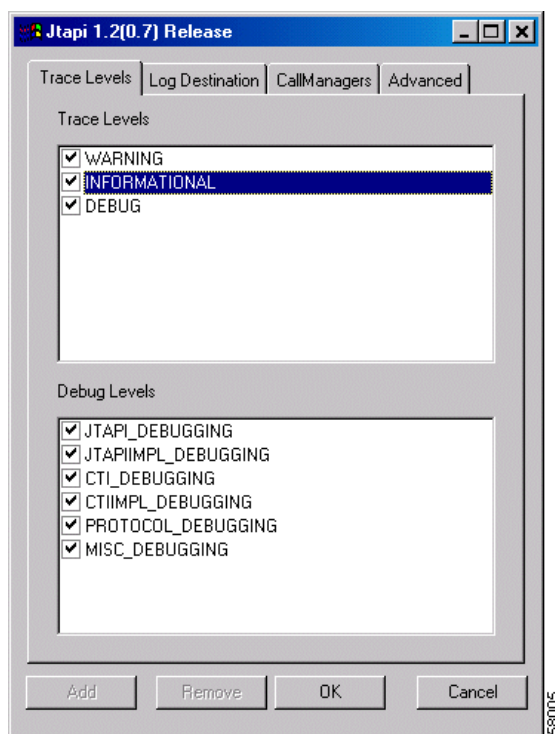
This section, which describes how to use the Cisco JTAPI preferences application, discusses the following topics:

- [Trace Levels, page 48-5](#)
- [Log Destination, page 48-7](#)
- [Cisco CallManager, page 48-10](#)
- [Advanced, page 48-11](#)

Trace Levels

Figure 48-1 illustrates the Trace Levels tab of the Cisco JTAPI preferences application. The window title shows the JTAPI version number.

Figure 48-1 Trace Levels Tab



The Trace Level tab allows you to enable or disable the following JTAPI trace levels:

- WARNING—Low-level warning events
- INFORMATIONAL—Status events
- DEBUG—Highest level debugging events

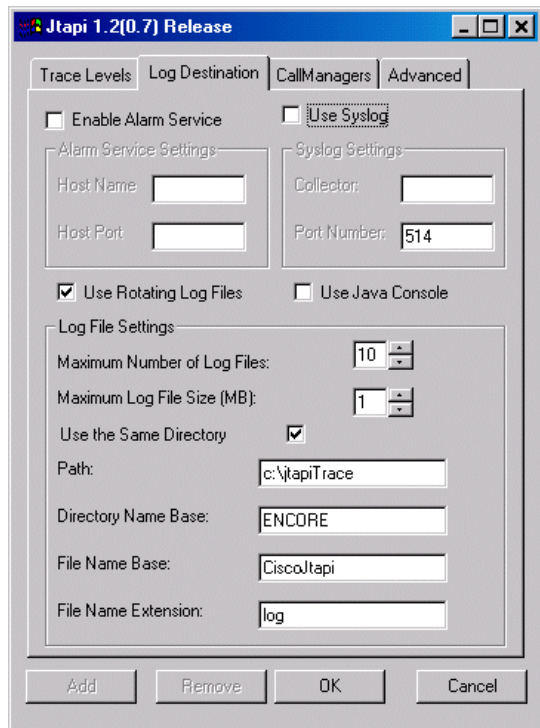
You may enable or disable additional debugging levels in the Debug Levels pane, as described in the following list:

- JTAPI_DEBUGGING—JTAPI methods and events trace
- JTAPI_IMPLDEBUGGING—Internal JTAPI implementation trace
- CTI_DEBUGGING—Trace Cisco CallManager events that are sent to the JTAPI implementation
- CTIIMPL_DEBUGGING—Internal CTICLIENT implementation trace
- PROTOCOL_DEBUGGING—Full CTI protocol decoding
- MISC_DEBUGGING—Miscellaneous low-level debug trace

Log Destination

Figure 48-2 illustrates the Log Destination tab of the Cisco JTAPI preferences application.

Figure 48-2 Log Destination Tab



The Log Destination tab allows you to configure how JTAPI creates traces and how they are stored. [Table 48-1](#) contains descriptions of the log destination fields:

Table 48-1 Log Destination Configuration Fields

Field	Description
Enable Alarm Service	When this option is enabled, JTAPI alarms go to an alarm service running on the specified machine. You must specify the host name and port number when enabling this option.
Use Java Console	When this option is enabled, tracing goes to the standard output or console (command) window.
Use Syslog	When this option is enabled, traces go to a UDP port as specified in the Syslog Collector and Port Number fields. Syslog collector service collects traces and directs them to the CiscoWorks2000 server.
Use Rotating Log Files	This option allows you to direct the traces to a specific path and folder in the system. No fewer than two log files and no more than 99 files can exist. Cisco JTAPI rotates through the log files in numerical order, returning to the first log file after filling the last. Log files increase in size in 1-megabyte increments.
Use the Same Directory	<p>This option allows you to specify whether the same folder name should be used for each instance of an application.</p> <p>When the option is enabled, JTAPI traces the log files to the same directory. In this case, successive instances of a JTAPI application will restart the log files starting at index 01.</p> <p>When the option is disabled, each application instance, whether successive or simultaneous, will cause the trace files to be placed in a new folder sequential to the last folder written. Cisco JTAPI detects the last folder present in the trace path and automatically increments the numeric index.</p>

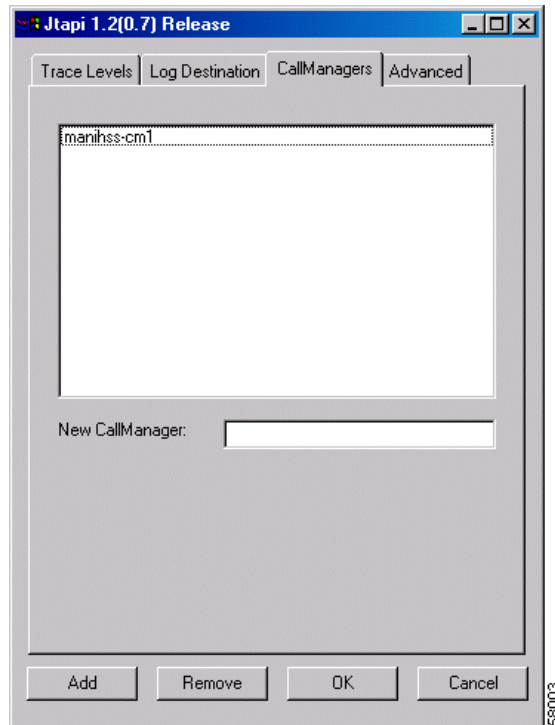
Table 48-1 Log Destination Configuration Fields (continued)

Field	Description
Path	This field allows you to specify the path name to which the trace files are written. When the path is not specified, JTAPI makes the default the application path.
Directory Name Base	This field allows you to specify a folder name where the trace files will be contained.
File Name Base and File Name Extension	Use these values to create the trace file names with a numerical index appended to the file base name to indicate the order in which the files are created. For example, if you enter jtapiTrace in the File Name Base field and log in the File Name Extension field, the trace files would rotate between jtapiTrace01.log, jtapiTrace02.log and jtapiTrace10.log. If the File Name Base and File Name Extension fields are left blank, Cisco JTAPI picks the trace files names as CiscoJtapi01.log, CiscoJtapi02.log, and so on.

Cisco CallManager

Figure 48-3 illustrates the Cisco CallManager tab of the Cisco JTAPI preferences application.

Figure 48-3 CallManager Tab

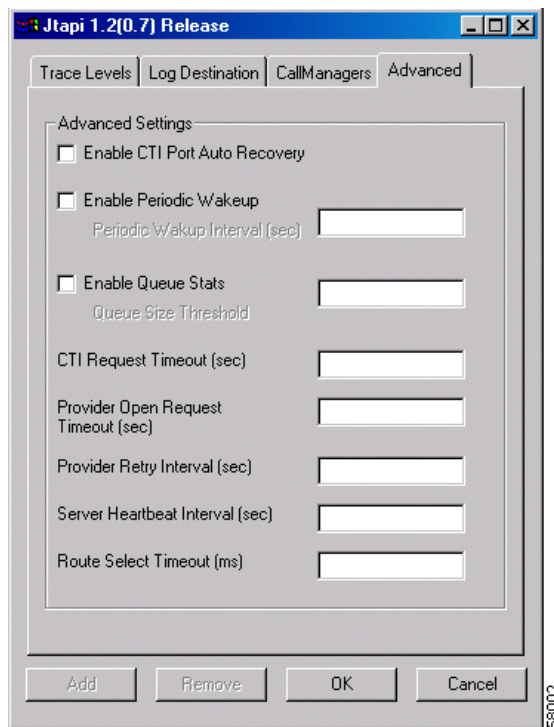


This tab allows you to define a list of Cisco CallManagers that a JTAPI application can present to the user for optional Cisco CallManager connectivity.

Advanced

Figure 48-4 illustrates the Advanced tab of the Cisco JTAPl preferences application.

Figure 48-4 *Advanced Tab*



You can configure the parameters in [Table 48-2](#) through the Advanced tab in the JTPrefs application. You may need these low-level parameters for troubleshooting and debugging purposes only.

**Note**

Cisco recommends that you *not* modify the parameters in [Table 48-2](#) unless instructed to do so by Cisco Technical Assistance Center (TAC).

Table 48-2 Advanced Configuration Fields

Field	Description
Enable CTI Port Auto Recovery	This setting specifies recovery treatment for CTI ports under the control of the JTAPI application. When this setting is enabled, JTAPI will reregister the CTI port in case of a system failure. When this setting is disabled, the application must reregister CTI ports after a system failure. The default setting is enabled.
Enable Periodic Wakeup	This setting enables a heartbeat in the internal message queue that JTAPI uses. It causes the thread to wake up if it has not received a message in the time defined in the <code>PeriodicWakeupInterval</code> and creates log an event. The default setting is disabled.
Periodic Wakeup Interval (sec)	This setting allows you to define a time of inactivity in the JTAPI internal message thread. If JTAPI has not received a message during this time, the thread wakes up and logs an event. The default is 50 seconds.
Enable Queue Stats	This setting causes JTAPI to log the max queue depth over the specified number of messages queued to JTAPI main event thread. In other words, for every x messages processed, JTAPI logs a DEBUGGING level trace reporting the maximum queue depth over that interval, where x is the number of messages specified in <code>Queue Size Threshold</code> . The default setting is disabled.
Queue Size Threshold	This setting allows you to specify the number of messages that define the time over which JTAPI will report the maximum queue depth. The default is 25 messages.

Table 48-2 Advanced Configuration Fields (continued)

Field	Description
CTI Request Timeout (sec)	This setting specifies the time in seconds that JTAPI will wait for a response from a CTI request. The default is 15 seconds.
Provider Open Request Timeout (sec)	This setting specifies the time in seconds that JTAPI will wait for a response for the Provider Open Request. The default is 30 seconds.
Provider Retry Interval (sec)	This setting specifies the time in seconds that JTAPI will retry opening a connection to the CallManager cluster in case of system failure. The default is 30 seconds.
Server heartbeat Interval (sec)	This setting specifies how often in seconds that the connection between JTAPI and the Cisco CallManager cluster will be verified to be alive. If JTAPI fails to receive heartbeats, it will establish a connection via the second CTIManager specified in the provider open request.
Route Select Timeout (ms)	This setting specifies the time in milliseconds that JTAPI will wait for the application to respond to the Route event. If the application does not respond within this time, JTAPI will end the route and send the corresponding RouteEnd event.

JTAPI Preferences on non-Microsoft environments

For non-Microsoft environments, you must create a jtapi.ini file manually and place it in the CLASSPATH. The following list provides the parameter names with sample values:

```

PROTOCOL_DEBUGGING=0
UseSameDirectory=1
JTAPIIMPL_DEBUGGING=0
UseSystemDotOut=0
QueueStatsEnabled=0
PeriodicWakeupInterval=50
RouteSelectTimeout=5000
UseTraceFile=0
ProviderOpenRequestTimeout=30
Directory=
DEBUG=0
DesiredServerHeartbeatInterval=30
AlarmServicePort=1444
CTI_DEBUGGING=0
SyslogCollector=
JTAPI_DEBUGGING=0
PeriodicWakeupEnabled=0
NumTraceFiles=10
AlarmServiceHostname=
MISC_DEBUGGING=0
TracePath=.
UseAlarmService=0
CTIIMPL_DEBUGGING=0
WARNING=0
Traces=WARNING; INFORMATIONAL; DEBUG
INFORMATIONAL=0
UseSyslog=0
CtiPortAutoRecovery=1
FileNameBase=CiscoJtapi
CtiRequestTimeout=15
TraceFileSize=1048576
Debugging=JTAPI_DEBUGGING; JTAPIIMPL_DEBUGGING; CTI_DEBUGGING;
    CTIIMPL_DEBUGGING; PROTOCOL_DEBUGGING; MISC_DEBUGGING
FileNameExtension=log
QueueSizeThreshold=25
ProviderRetryInterval=30
CallManagers=cml
SyslogCollectorUDPPort=514

```

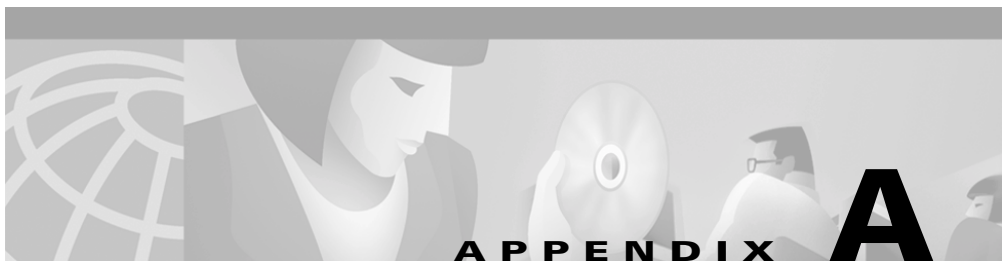
Administering User Information for JTAPI and TAPI Applications

JTAPI and TAPI applications require that users be administered in the directory and be given privilege to control one or more devices. Follow the procedures for adding a user and assigning devices to a user in the “Adding a New User” section before using a JTAPI or TAPI application. The list of devices assigned to the user represents the phones that the user needs to control from the application (e.g., make calls, answer calls).



PART 9

Appendix



Personal Directory

Personal Directory provides a personal address book stored in the Cisco CallManager LDAP directory, a Cisco IP Phone synchronizer, and two Cisco IP Phone services: Personal Address Book and Personal Fast Dials.

This section contains the following sections:

- [Understanding Personal Directory, page A-1](#)
- [System Requirements, page A-3](#)
- [Configuring Personal Directory, page A-3](#)
- [Downloading the Cisco IP Phone Address Book Synchronizer, page A-9](#)
- [Preparing the Phone User for Personal Directory, page A-9](#)

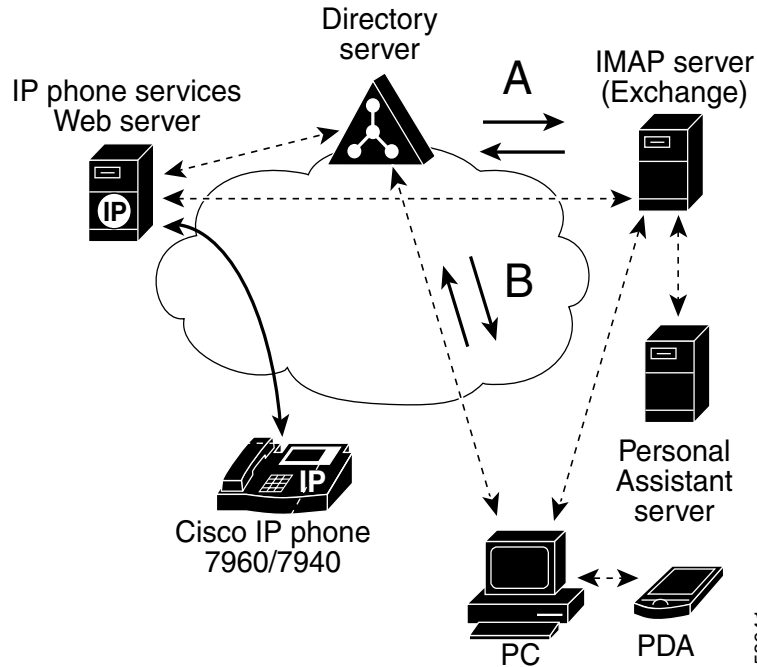
Understanding Personal Directory

With the stored personal address book, users can synchronize their Microsoft Outlook and/or Outlook Express address book entries. The Personal Address Book service accesses the stored entries. From a Cisco IP Phone 7960 or 7940, users can look up entries, choose a selection, and press a softkey to dial the chosen number.

With Personal Fast Dials, the Cisco IP phone user can assign index numbers (from 1 to 99) for quick dialing. The index numbers can be assigned to Personal Address Book entries or to directory entries the user adds that do not correspond to the address book. Users can assign and remove the Personal Fast Dials entries from their phones.

Figure A-1 illustrates how the Personal Address Book and Personal Fast Dials services interact with other components in your system.

Figure A-1 Using Personal Address Book and Personal Fast Dials



Cisco Personal Assistant allows users to synchronize their exchange server with the Personal Address Book stored in the LDAP directory in Cisco CallManager. With Personal Directory, the Cisco CallManager directory synchronizes with Exchange Server (A) and with Microsoft Outlook clients on your users' PCs (B).

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System Requirements

Make sure your system contains the following components:

- Cisco IP Phones models 7960 or 7940
- A PC running Cisco CallManager 3.1 or later
- A PC running Windows 2000
- A Microsoft IIS Server
- Microsoft Outlook and/or Outlook Express

**Note**

Microsoft Outlook must be set up in Internet-only mode and the Windows Address Book must be configured to share entries.

Configuring Personal Directory

To configure the Personal Directory, perform the following procedures:

- [Configuring the Personal Address Book Service, page A-3](#)
- [Configuring the Personal Fast Dials Service, page A-6](#)

Configuring the Personal Address Book Service

You configure Personal Address Book by adding the service to Cisco CallManager Administration and configuring the service parameters. To configure the Personal Address Book service, perform the following steps.

Procedure

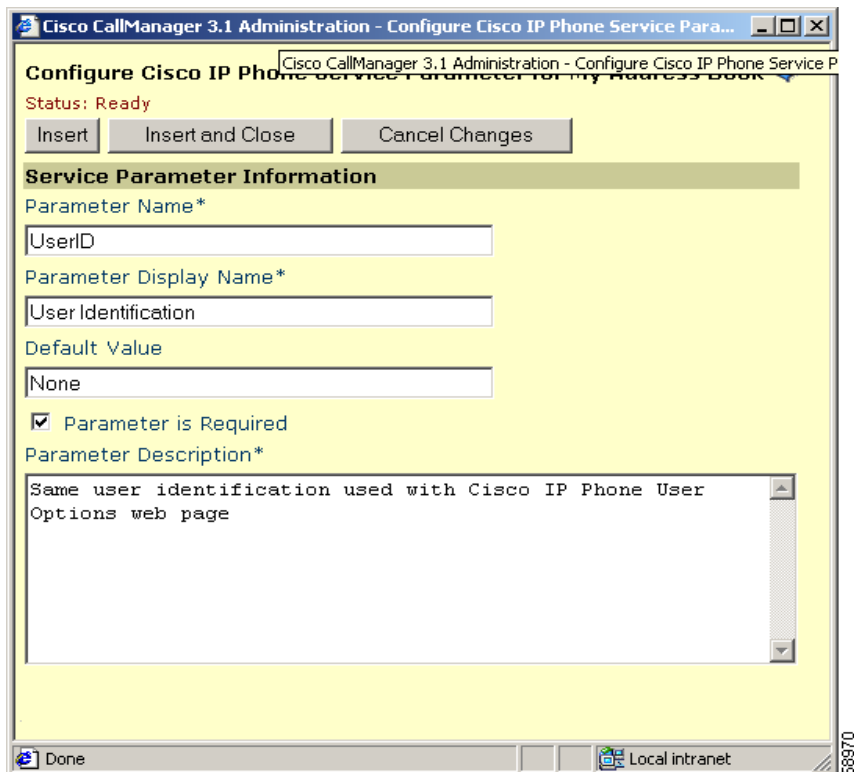
-
- Step 1** Choose **Feature > Cisco IP Phone Services**.
- The Cisco IP Phone Services Configuration pane displays.
- Step 2** In the Service Name field, enter the name of the service you want to display in the menu of available services on the Cisco IP Phone User Options pane, for example, My Address Book.

- Step 3** In the Service Description field, enter a description of the content provided by the service, for example, Personal Directory - Personal Address Book.
- Step 4** In the Service URL field, enter the URL of the server where the application for the Personal Address Book service is located:
<http://<CallManager hostname or IP address>/ccmpd/xmlAddressBookInput.asp>
 Figure A-2 shows the service configuration entries for Personal Address Book.

Figure A-2 Personal Address Book Service Configuration

The screenshot shows the Cisco CallManager Administration web interface. At the top, there is a navigation menu with links for System, Route Plan, Service, Feature, Device, User, Application, and Help. Below the menu is a header with the Cisco CallManager Administration logo and the Cisco Systems logo. The main content area is titled 'Cisco IP Phone Services Configuration'. On the left, there is a sidebar with 'Cisco IP Phone Services' and a list of services: 'My Address Book' (selected) and 'My Fast Dials'. The main area displays the configuration for 'Service: My Address Book'. The status is 'Ready'. There are four buttons: 'Update', 'Delete', 'Cancel Changes', and 'Update Subscriptions'. Below this is a 'Service Information' section with two rows of input fields: 'Service Name*' (My Address Book) and 'Service Description' (Personal Directory - Personal Address Book). The 'Service URL*' field contains the URL: http://<CallManager hostname or IP address>/ccmpd/xmlAddressBookInput.asp. A vertical text '69693' is visible on the right side of the screenshot.

- Step 5** Click **Insert**.
- Step 6** Click the **New** button to the right of the Parameters list box.
 The Configure Cisco IP Phone Service Parameter window appears.
- Step 7** Add each parameter as described in [Table A-1](#), beginning with UserID. When specified, enter the parameter name exactly as it appears in the table.
 Figure A-3 shows the UserID service parameter settings for this service.

Figure A-3 UserID Service Parameter Settings

- Step 8** Click **Insert** to add the parameter.
- Step 9** When you have added the last service parameter specified in [Table A-1](#), click **Insert and Close** to insert that parameter and close the window. The Cisco IP Phone Services Configuration pane displays.
- Step 10** Click **Update Subscriptions**.

Related Topics

- [Updating a Cisco IP Phone Service Parameter, page 35-7](#)
- [Deleting a Cisco IP Phone Service Parameter, page 35-8](#)
- [Personal Address Book Service Parameter Settings, page A-6](#)

Personal Address Book Service Parameter Settings

Table A-1 contains the service parameter settings for the three service parameters required for the Personal Address Book service. When indicated, use the exact parameter name.

For a general description of these fields, see Table A-1.

Table A-1 Personal Address Book Service Parameter Settings

Field	Definition		
Parameter Name	UserID (Use this exact name.)	UserPIN (Use this exact name.)	PreDial
Parameter Display Name	User Identification	PIN	Outside Access code
Default Value	None	None	None
Parameter Required	Yes	Yes	No
Parameter Description	Same user identification used with the Cisco IP Phone User Options pane	Same user PIN used with the Cisco IP Phone User Options pane	This access code is added as a prefix to the stored directory number to provide access to an outline line.

Configuring the Personal Fast Dials Service

You configure Personal Fast Dials by adding the service to Cisco CallManager Administration and configuring the appropriate service parameters. To configure the Personal Fast Dials service, perform the following steps.

Procedure

-
- Step 1** Choose **Feature > Cisco IP Phone Services**.
- The Cisco IP Phone Services Configuration pane displays.
- Step 2** In the Service Name field, enter the name of the service you want to display in the menu of available services on the Cisco IP Phone User Options pane, for example, My Fast Dials.

- Step 3** In the Service Description field, enter a description of the content provided by the service, for example, Personal Directory - Personal Fast Dials.
- Step 4** In the Service URL field, enter the URL of the server where the application for the Personal Address Book service is located:
`http://<CallManager hostname or IP address>/ccmpd/xmlFastDials.asp`
- Step 5** Click **Insert**.
- Step 6** Click the **New** button to the right of the Parameters list box.
The Configure Cisco IP Phone Service Parameter window appears.
- Step 7** Add each parameter as described in [Table A-2](#), beginning with UserID. When specified, enter the parameter name exactly as it appears in the table.
- Step 8** Click **Insert** to add the parameter.
- Step 9** When you have added the last service parameter specified in [Table A-2](#), click **Insert and Close** to insert that parameter and close the window.
The Cisco IP Phone Services Configuration pane displays.
- Step 10** Click **Update Subscriptions**.
-

Related Topics

- [Updating a Cisco IP Phone Service Parameter, page 35-7](#)
- [Deleting a Cisco IP Phone Service Parameter, page 35-8](#)
- [Personal Fast Dials Service Parameter Settings, page A-8](#)

Personal Fast Dials Service Parameter Settings

Table A-2 contains the service parameter settings for the three service parameters required for Personal Fast Dials service. When indicated, use the exact parameter name.

For a general description of these fields, see Table A-2.

Table A-2 Personal Fast Dials Service Parameter Settings

Field	Definition		
Parameter Name	UserID (Use this exact name.)	UserPIN (Use this exact name.)	PreDial
Parameter Display Name	User Identification	PIN	Outside Access code
Default Value	None	None	None
Parameter Required	Yes	Yes	No
Parameter Description	Same user identification used with the Cisco IP Phone User Options pane	Same user PIN used with the Cisco IP Phone User Options pane	This access code will be added as a prefix to the stored directory number to provide access to an outline line

Downloading the Cisco IP Phone Address Book Synchronizer

Users must install the Cisco IP Phone Address Book Synchronizer plugin on their computers before they can use the Personal Directory. Use the following procedure to download the Cisco IP Phone Address Book Synchronizer installation file. Once you download the file, you can distribute it to the users in your network.

Procedure

- Step 1** Choose **Applications > Install Plugins**.
 - Step 2** Choose **Cisco IP Phone Address Book Synchronizer**.
 - Step 3** Follow the online instructions.
 - Step 4** Make the installation file available to the end users so they can install the Cisco IP Phone Address Book Synchronizer application on their own work stations.
-

Preparing the Phone User for Personal Directory

Once you have added the Personal Directory services and configured the service parameters, provide the phone user with the following information:

- Notification of the feature's availability
- Access to the installation file for the Cisco IP Phone Address Book Synchronizer for users to install on their own work stations
- Their user ID and PIN, if they do not already have it
- The URL for the Cisco IP Phone User Options web page for the user, if they do not already have it
- Information on using the Personal Directory services. Direct them to the *Cisco IP Phone 7960/7940 Quick Start Guide*.



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