Intercom

This chapter provides information about Intercom, a type of phone line, which combines the functionality of a traditional line and a speed dial. With an intercom line, a user can call the intercom line of another user, which auto-answers to one-way audio whisper. The recipient can then acknowledge the whispered call and initiate a two-way intercom call.

Configure Intercom

Intercom, a type of phone line, combines the functionality of a traditional line and a speed dial. With an intercom line, a user can call the intercom line of another user, which auto-answers to one-way audio whisper. The recipient can then acknowledge the whispered call and initiate a two-way intercom call.

Users can use an intercom line to dial any other intercom line in the intercom partition, or you can preconfigure the line to target an intercom line outside the intercom partition.

Note Users can use an intercom line only to dial other intercom lines.

Intercom allows a user to place a call to a predefined target. The called destination auto-answers the call in speakerphone mode with mute activated. This sets up a one-way voice path between the initiator and the destination, so the initiator can deliver a short message, regardless of whether the called party is busy or idle.

To ensure that the voice of the called party does not get sent back to the caller when the intercom call is automatically answered, Cisco Unified Communications Manager implements whisper intercom. Whisper intercom means that only one-way audio exists from the caller to the called party. The called party must manually press a key to talk to the caller.

Note An auto-answer tone indicates the beginning of the whisper state for both the sender and the recipient.

Perform the following steps to configure the Cisco Unified Communications Manager Intercom feature in Cisco Unified Communications Manager.

Procedure

Step 1 Create intercom partition.

Note When you create an intercom partition, the administration user interface will automatically generate a corresponding intercom calling search space with the same name and includes this new intercom partition initially.

Step 2 Create intercom calling search space.

Note Do this if you need to create an intercom calling search space other than the one that is generated automatically when you create the intercom partition.

Step 3 Create intercom translation pattern (optional).

Step 4 Create intercom directory number.

Step 5 Assign intercom directory number to a phone.

Related Topics

Intercom Partition Configuration, on page 8
Intercom Calling Search Space Configuration, on page 14
Intercom Translation Pattern Configuration, on page 18
Intercom Directory Number Configuration, on page 27
Intercom Line and Speed Dial Configuration, on page 38

Intercom Feature

Intercom, a type of phone line, combines the functionality of a traditional line and a speed dial. With an intercom line, a user can call the intercom line of another user, which auto-answers to one-way audio whisper. The recipient can then acknowledge the whispered call and initiate a two-way intercom call.

Users can use an intercom line to dial any other intercom line in the intercom partition, or you can preconfigure the line to target an intercom line outside the intercom partition.

Note Users can use an intercom line only to dial other intercom lines.

Intercom allows a user to place a call to a predefined target. The called destination auto-answers the call in speakerphone mode with mute activated. This sets up a one-way voice path between the initiator and the destination, so the initiator can deliver a short message, regardless of whether the called party is busy or idle.

To ensure that the voice of the called party does not get sent back to the caller when the intercom call is automatically answered, Cisco Unified Communications Manager implements whisper intercom. Whisper intercom means that only one-way audio exists from the caller to the called party. The called party must manually press a key to talk to the caller.

Note An auto-answer tone indicates the beginning of the whisper state for both the sender and the recipient.

Intercom Directory Numbers and Default Devices

Each intercom line needs a default device. The intercom feature requires configuration of the Default Activated Device field in the Intercom Directory Number Configuration window to make an intercom line display as active. The intercom line displays only on the designated default device.

When the administrator assigns an intercom line to a device, the system sets the device as the default device for the intercom line if not set previously. The administrator can modify the default device for the intercom line. When the administrator changes the default device to a different device, the intercom line gets removed from the original device, even though the intercom line may still be assigned to the original device.

You can assign an intercom line to a device profile. Only when a user uses a device profile to log in to the default device that matches the default device of the intercom line does the intercom line become available. Otherwise, no intercom line displays when the user logs in.

See the Intercom Directory Number Configuration, on page 27 for configuration details.

Note If an intercom line has been configured and assigned to a phone but fails to display on the phone, check that the Default Activated Device value is set to this device for this intercom line. If that configuration has taken place, check that the phone has been reset.

Intercom Directory Numbers and Cisco Extension Mobility

Be aware that intercom directory numbers (lines) are restricted to one device per intercom line. Because Cisco Extension Mobility is widely used, mobile users need the intercom feature but need it to be available only on a single device. You can assign intercom lines to either a regular device or to an extension mobility profile, but the system needs to enforce that an intercom line gets associated to either a regular device or to an extension mobility profile.

Because an extension mobility profile can be used on more than one phone simultaneously, use the Default Activated Device field to specify which device can display this intercom line. Intercom lines that are not used for extension mobility also require configuration of the Default Activated Device field.

The Intercom section of the Extension Mobility chapter provides additional details about upgrading from Release 6.0(1) of Cisco Unified Communications Manager to Release 6.1(1) or later.

System Requirements

The system requirements for the intercom feature follow:

- Cisco Unified Communications Manager Release 6.0 or later

- Microsoft Internet Explorer (IE) 7 or Internet Explorer 8 or FireFox 3.x or Safari 4.x
- Cisco Unified IP Phones firmware release 8.3(1) or later

Determine Intercom Support for Cisco Unified IP Phones

The list of devices that support the Intercom feature varies per version and device pack.

Use the Cisco Unified Reporting application to generate a complete list of devices that support the Intercom feature for a particular release and device pack. To do so, follow these steps:

Procedure

Step 1 Start Cisco Unified Reporting by using any of the methods that follow. The system uses the Cisco Tomcat service to authenticate users before allowing access to the web application. You can access the application

- by choosing **Cisco Unified Reporting** in the Navigation menu in Cisco Unified Communications Manager Administration and clicking **Go.**
- by choosing **File** > **Cisco Unified Reporting** at the Cisco Unified Real Time Monitoring Tool (RTMT) menu.
- by entering `https://<server name or IP address>:8443/cucreports/` and then entering your authorized username and password.

Step 2 Click **System Reports** in the navigation bar.

Step 3 In the list of reports that displays in the left column, click the **Unified CM Phone Feature List** option.

Step 4 Click the Generate a new report link to generate a new report, or click the Unified CM Phone Feature List link if a report already exists.

Step 5 To generate a report of all devices that support Intercom, choose these settings from the respective drop-down list boxes and click the **Submit** button:

Product: All

Feature: Intercom

The List Features pane displays a list of all devices that support the Intercom feature. You can click on the Up and Down arrows next to the column headers (Product or Protocol) to sort the list.

For additional information about the Cisco Unified Reporting application, see the *Cisco Unified Reporting Administration Guide*.

Call and Line States

Intercom introduces a new call state for the intercom line, Whisper. Intercom also uses the existing Idle, Connected, Offhook, and Digits After First line states.

Because only one intercom call can occur at a time, the intercom call state maps directly to the line state, and call sort rules will remain unaffected.

The following table lists the intercom call and line states.

Table 1: Intercom Call and Lines States

	Idle	Whisper	Off hook	Digits After First	Connected
Description	Idle intercom state	During whisper, the recipient receives the initiator voice, but the initiator does not receive the recipient voice. Callers on any other active calls with the recipient do not receive the initiator voice.	Only present when a target has not been preconfigured and an intercom target must be dialed.	Only present when a target has not been preconfigured and an intercom target must be dialed.	Connected specifies the connected state for the Intercom feature.
LED Behavior	LED not illuminated	Feature Key: Solid Amber	Feature Key: Solid Amber.	Feature Key: Solid Amber.	Feature Key: Solid Green
Icon	Idle	Whisper	Whisper	Whisper	Connected
Softkey Template	Default Cisco Unified Communications Manager Template	Connected No Feature	Intercom Off hook	Default Unified CM Digits After First template, Connected No Feature.	Connected No Feature
Other		An auto-answer tone precedes whisper.	“Inside” dial tone	No dial tone	

Interactions and Restrictions

This section describes the interactions and restrictions that are associated with intercom.

Interactions

This section describes how intercom interacts with Cisco Unified Communications Manager applications and call processing features.

Bulk Administration Tool

The Cisco Unified Communications Manager administrator can use the Bulk Administration Tool (BAT) to add many intercom users at once instead of adding users individually. See the Cisco Unified Communications Manager Bulk Administration Guide for more information.

Barge

When the intercom destination is a barge target, the Cisco Unified IP Phone can still support whisper intercom.

When the destination caller opts to talk to the intercom caller by pressing the intercom button, the original call has been put on hold, and the barge initiator will get released.

Do Not Disturb (DND)

The intercom call will override DND on the destination phone.

Call Preservation

When a call is preserved, the end user needs to hang up before the phone can reregister with Cisco Unified Communications Manager. When the intercom call is in whisper mode, it represents a one-way medium, and the terminating side might have no user at all; therefore, only the intercom call in talkback mode will get preserved. (Whisper intercom will not get preserved.)

Cisco Unified Survivable Remote Site Telephony (SRST)

When Cisco Unified IP Phones register with SRST, the phones do not register intercom lines; therefore, the intercom feature will not be available when the phones are registered with SRST.

Cisco Unified Communications Manager Assistant

See the Cisco Unified Communications Manager Assistant Configuration Wizard chapter in the Cisco Unified Communications Manager Administration Guide.

CTI

You can use CTI/JTAPI/TSP to set or modify the preconfigured target directory number for an intercom line. You will receive notification if the target directory number is updated or reconfigured through Cisco Unified Communications Manager Administration.

Be aware that CTI/JTAPI/TSP is backward compatible if the intercom line is not configured to be controlled by the application. If the intercom line is configured in the application user list, you may have to make changes and test the compatibility.

Cisco Extension Mobility

The intercom feature interacts with Cisco Extension Mobility. The system presents an intercom line to a user who uses Cisco Extension Mobility to log in to a phone that supports the intercom feature if the device profile that the user uses to log in has an intercom line that is provisioned. The phone must be the default device for that intercom line.

See the Intercom Directory Number Configuration, on page 27 and to the Extension Mobility for configuration details.

Internet Protocol Version 6 (IPv6)

Intercom can support phones with an IP Addressing Mode of IPv4 Only or IPv4 and IPv6. During an intercom call, the talkback mode establishes media streams with the same IP version as the media stream that is used when the caller initiates intercom. For more information on IPv6, see the Internet Protocol Version 6 (IPv6).

Restrictions

The following restrictions apply to the Intercom feature:

- Intercom calls do not follow a coverage path.
- Hold - The system does not allow intercom calls to be placed on hold.
- Call Forwarding - Intercom calls cannot be forwarded.
- Transfer - The system does not allow an intercom call to be transferred.
- iDivert - The system does not allow an intercom call to be diverted.
- Call Pickup/Directed Call Pickup - The call pickup groups do not include intercom calls.
- DND - Intercom overrides Do Not Disturb (DND).
- If sufficient bandwidth does not exist, the intercom call fails.
- If two intercom calls are directed to a target, the first one goes through; the second fails with a busy tone.
- Barge and cBarge - Intercom does not work with Barge and cBarge.
- Conferencing - The system does not allow intercom calls to be conferenced.
- When an active call is being monitored or recorded, the user cannot receive nor place intercom calls
- Video is not supported with intercom.

Install and Activate Intercom

Because intercom comes standard with Cisco Unified Communications Manager Release 6.0 and later, it automatically gets installed and activated.

Configure Intercom

To use the intercom feature, both the caller and called phones require a dedicated intercom line button. This line will have its own Directory Number (DN), which is its intercom code, and partition (intercom group). The Calling Search Space for this intercom line gets used to restrict the access of intercom destination from this phone.

Note To guarantee that no accidental use of the intercom feature occurs by an unauthorized phone, users cannot access intercom partition and intercom calling search space from other administrative windows, except under the intercom feature.

Note The system does not allow an intercom line to be shared on multiple devices. It should not have any other feature-related configuration, such as forward, pickup, voice mail profile, and so on.

Tip A phone can have more than one intercom button that is assigned.

Tip Before you configure intercom, review the configuration summary task for this feature..

Related Topics

Configure Intercom, on page 1

Intercom Partition Configuration

This section provides information to find, add, update, or delete intercom partitions. An intercom 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 that are based on organization, location, and call type. For more information about partitions, see the *Cisco Unified Communications Manager System Guide*.

Add an Intercom Partition

You can add a new intercom partition by using the following procedure.

Procedure

Step 1 From the Cisco Unified Communications Manager Administration window, click **Call Routing** > **Intercom** > **Intercom Route Partition**.

The Find and List Intercom Partitions window displays.

Step 2 Click the **Add New** button.

An Add New Intercom Partition window displays.

Step 3 Under the Intercom Partition Information section, in the Name box, enter the name and description of the intercom partition that you want to add.

Note To enter multiple partitions, use one line for each partition entry. You can enter up to 75 partitions; the names and descriptions can have up to a total of 1475 characters. The partition name cannot exceed 50 characters. Use a comma (',') to separate the partition name and description on each line. If a description is not entered, Cisco Unified Communications Manager uses the partition name as the description.

The Find and List Intercom Partitions window displays

Step 4 Continue with Find an Intercom Partition, on page 9

Find an Intercom Partition

The Find and List window for intercom partitions allows you to search for an intercom partition, which is a list of route patterns [directory number (DN) and route patterns]. Partitions facilitate call routing by dividing the route plan into logical subsets that are based on organization, location, and call type

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

Note During your work in a browser session, Cisco Unified Communications Manager Administration retains your intercom partition search preferences. If you navigate to other menu items and return to this menu item, Cisco Unified Communications Manager Administration retains your intercom partition search preferences until you modify your search.

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Route Partition**.

The Find and List Intercom Directory Numbers window displays. Records from an active (prior) query may also display in the window.

Step 2 To filter or search records

a) From the first drop-down list box, select a search parameter.
b) From the second drop-down list box, select a search pattern.
c) Specify the appropriate search text, if applicable.

Note To add additional search criteria, click the + button. When you add criteria, the system searches for a record that matches all criteria that you specify. To remove criteria, click the – button to remove the last added criterion or click the **Clear Filter** button to remove all added search criteria.

Step 3 To find all records in the database, ensure the dialog box is empty, click **Find.**

All matching records display. You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box.

Note You can delete multiple records from the database by checking the check boxes next to the appropriate record and clicking **Delete Selected**. You can delete all configurable records for this selection by clicking **Select All** and then clicking **Delete Selected**.

Step 4 From the list of records that display, click the link for the record that you want to view.

Note To reverse the sort order, click the up or down arrow, if available, in the list header.

The window displays the item that you choose.

Related Topics

Intercom Calling Search Space Configuration, on page 14

Configure an Intercom Partition

Perform the following procedure to configure an intercom partition.

Note When you add a new intercom partition, Cisco Unified Communications Manager automatically adds a new intercom calling search space that contains only the new partition. You can modify the new intercom calling search space later.

Note Be aware that intercom partition and intercom calling search space cannot be mixed with partition and calling search space for regular lines.

Procedure

Step 1 In the menu bar, choose **Call Routing** > **Intercom** > **Intercom Route Partition**.

The Find and List Intercom Partitions window displays.

Locate the partition that you want to configure by using the steps described in Find an Intercom Partition, on page 9.

Step 2 Enter the appropriate settings that are described in Intercom Partition Configuration, on page 10.

Step 3 Click **Save.**

The Intercom Partition Configuration window displays

Step 4 Enter the appropriate settings that are described in Intercom Partition Configuration, on page 10.

If you are updating an intercom partition, click Reset or use the Apply Config button described in the Synchronize an Intercom Partition with Affected Devices, on page 12.

Related Topics

Intercom Calling Search Space Configuration, on page 14

Intercom Partition Configuration

An intercom 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 that are based on organization, location, and call type.

The following table describes the intercom partition configuration settings for adding new intercom partitions.

Table 2: Add New Intercom Partition(s) Configuration Settings

Field	Description
Intercom Partition Information	

Field	Description
Name, Description	Enter a name in the name box. Ensure each intercom partition name is unique to the route plan. Intercom partition names can contain a-z, A-Z and 0-9 characters, as well as spaces, hyphens (-), and underscore characters (_). **Note** The length of the intercom partition names limits the maximum number of intercom partitions that can be added to an intercom calling search space. The table below provides examples of the maximum number of intercom partitions that can be added to an intercom calling search space if intercom partition names are of fixed length. Follow the intercom partition name by a comma (,); then, enter a description on the same line as the Partition Name. The description can include up to 50 characters in any language, but it cannot include double-quotes (“), angle brackets (<>), square bracket ([ ]), ampersand (&), and percentage sign (%). If you do not enter a description, Cisco Unified Communications Manager automatically enters the intercom partition name in this field. Use a new line for each intercom partition and description.

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

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

The following table provides examples of the maximum number of intercom partitions that can be added to an intercom calling search space if partition names are of fixed length.

Table 3: Calling Search Space Partition Limitations

Partition Name Length	Maximum Number of Partitions
2 characters	170

Partition Name Length	Maximum Number of Partitions
3 characters	128
4 characters	102
5 characters	86

The following table provides descriptions of the information needed to configure an existing intercom partition.

Table 4: Intercom Partition Configuration Settings

Field	Description
Intercom Partition Information	
Name	The name of the intercom partition that you selected displays in this box.
Description	If you entered a description of the intercom partition that you selected, it displays here. If you did not enter a description when you added the intercom partition, you can add it now.
Time Schedule	The drop-down list is populated with time schedules that you can add from **Call Routing** > **Class of Control** > **Time Schedule**.
Time Zone	• If you want the time zone to be the same as the originating device, click the radio button next to Originating Device. • If you want to set a specific time zone, click the Specific Time Zone radio button and select the correct time zone from the drop-down list.

Synchronize an Intercom Partition with Affected Devices

To synchronize devices with an intercom partition that has undergone configuration changes, perform the following procedure, which will apply any outstanding configuration settings in the least-intrusive manner possible. (For example, a reset/restart may not be required on some affected devices.)

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Route Partition**.

The Find and List Intercom Partitions window displays.

Step 2 Choose the search criteria to use.

Step 3 Click **Find.**

The window displays a list of intercom partitions that match the search criteria.

Step 4 Click the intercom partition to which you want to synchronize applicable devices. The Intercom Partition Configuration window displays.

Step 5 Make any additional configuration changes.

Step 6 Click **Save.**

Step 7 Click **Apply Config**.

The Apply Configuration Information dialog displays.

Note If devices that are associated with the intercom partition get reset, calls on affected gateways may drop.

Step 8 Click **OK**.

Related Topics

Intercom Calling Search Space Configuration, on page 14

Delete an Intercom Partition

The following procedure describes how to delete an intercom partition.

Before you begin

You cannot delete an intercom partition if it is assigned to an item such as calling search space or to a route pattern. To find out which calling search spaces or other items are using the intercom partition, choose Dependency Records from the Related Links drop-down list box in the Intercom Partition Configuration window and click Go. If the dependency records are not enabled for the system, the dependency records summary window displays a message. For more information about dependency records, see the Cisco Unified Communications Manager Administration Guide. If you try to delete a partition that is in use, Cisco Unified Communications Manager displays a message. Before deleting a partition that is currently in use, you must perform either or both of the following tasks:

- Assign a different intercom partition to any intercom calling search spaces, devices, or other items that are using the intercom partition that you want to delete.
- Delete the intercom calling search spaces, devices, or other items that are using the intercom partition that you want to delete.

Procedure

Step 1 In the menu bar, choose **Call Routing** > **Intercom** > **Intercom Route Partition**.

Step 2 Locate the intercom partition that you want to delete.

Step 3 Check the check box of the intercom partition that you want to delete and click **Delete Selected**.

Tip You can delete all the intercom partitions in the list by clicking **Select All** and then clicking **Delete Selected**.

A message displays that states that you cannot undo this action.

Step 4 To delete the intercom partition, click **OK** or to cancel the deletion, click **Cancel**.

Caution Before initiating this action, check carefully to ensure that you are deleting the correct intercom partition. You cannot retrieve deleted intercom partitions. If an intercom partition is accidentally deleted, you must rebuild it.

Tip You can also delete an intercom partition by locating and displaying the partition that you want to delete and clicking **Delete**.

Related Topics

Intercom Calling Search Space Configuration, on page 14
Find an Intercom Partition, on page 9

Intercom Calling Search Space Configuration

This section provides information to find, add, update, copy, or delete a calling search space. An intercom calling search space comprises an ordered list of intercom route partitions that are typically assigned to devices. Intercom calling search spaces determine the partitions that calling devices search when they are attempting to complete a call.

For more detailed information on calling search spaces and partitions, see the *Cisco Unified Communications Manager System Guide*.

Find an Intercom Calling Search Space

The Find and List window for intercom calling search spaces allows you to search for an intercom calling search space, which is an ordered list of intercom route partitions that are typically assigned to devices. Intercom calling search spaces determine the intercom partitions that calling devices search when they are attempting to complete a call.

Because you might have several intercom calling search spaces in your network, Cisco Unified Communications Manager lets you locate specific intercom calling search spaces by using specific criteria as the basis. Use the following procedure to locate intercom calling search spaces.

Note During your work in a browser session, Cisco Unified Communications Manager Administration retains your intercom calling search space search preferences. If you navigate to other menu items and return to this menu item, Cisco Unified Communications Manager Administration retains your intercom calling search space search preferences until you modify your search.

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Calling Search Space**.

The Find and List Intercom Calling Search Spaces window displays. Records from an active (prior) query may also display in the window.

Step 2 To filter or search records

a) From the first drop-down list box, select a search parameter.
b) From the second drop-down list box, select a search pattern.

c) Specify the appropriate search text, if applicable.

Note To add additional search criteria, click the + button. When you add criteria, the system searches for a record that matches all criteria that you specify. To remove criteria, click the – button to remove the last added criterion or click the **Clear Filter** button to remove all added search criteria.

Step 3 To find all records in the database, ensure the dialog box is empty, click **Find.**

All matching records display. You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box.

Note You can delete multiple records from the database by checking the check boxes next to the appropriate record and clicking **Delete Selected**. You can delete all configurable records for this selection by clicking **Select All** and then clicking **Delete Selected**.

Step 4 From the list of records that display, click the link for the record that you want to view.

Note To reverse the sort order, click the up or down arrow, if available, in the list header.

The window displays the item that you choose.

What to do next

Additional Topics

See the Intercom Translation Pattern Configuration, on page 18.

Configure an Intercom Calling Search Space

The following procedure describes how to copy, add and update an intercom calling search space.

Procedure

Step 1 In the menu bar, choose **Call Routing** > **Intercom** > **Intercom Calling Search Space**.

Step 2 Perform one of the followings tasks:

a) To copy an existing intercom calling search space, locate the appropriate intercom calling search space as described in Find an Intercom Calling Search Space, on page 14. Click the **Copy** button next to the intercom calling search space that you want to copy. The window displays the copy of the intercom calling search space. Change the Intercom Calling Search Space Name.

b) To add an intercom calling search space, click the **Add New** button.

Note To add more intercom calling search spaces, click Add New and repeat this procedure.

c) To update an existing intercom calling search space, locate the appropriate intercom calling search space as described in Find an Intercom Calling Search Space, on page 14.

Step 3 Enter the appropriate settings as described in Intercom Calling Search Space Configuration, on page 16.

Step 4 Click **Save.**

Related Topics

Intercom Translation Pattern Configuration, on page 18

Intercom Calling Search Space Configuration

An intercom calling search space comprises an ordered list of intercom route partitions that are typically assigned to devices. Intercom calling search spaces determine the partitions that calling devices search when they are attempting to complete a call.

Table 5: Intercom Calling Search Space Configuration Settings

Field	Description
Intercom Calling Search Space Information	
Name	Enter a name in the Intercom 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 system. **Note** Use concise and descriptive names for your intercom 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.
Description	Enter a description in the Description field. The description can include up to 50 characters in any language, and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_), but it cannot include double-quotes (“), percentage sign (%), ampersand (&), or angle brackets (<>).
Intercom Route Partitions for this Calling Search Space	

Field	Description
Available Intercom Partitions	Choose an intercom partition in the Available Intercom Partitions list box and add it to the Selected Intercom Partitions list box by clicking the arrow button between the two list boxes. To add a range of intercom partitions at once, click the first intercom partition in the range; then, hold down the Shift key while clicking the last intercom partition in the range. Click the arrow button between the two list boxes to add the range of partitions. To add multiple intercom partitions that are not contiguous, hold down the Control (Ctrl) key while clicking multiple intercom partitions. Click the arrow button between the two list boxes to add the chosen intercom partitions. **Note** The length of the intercom partition names limits the maximum number of intercom partitions that can be added to an intercom calling search space.
Selected Intercom Partitions (Ordered by highest priority)	To change the priority of an intercom partition, choose an intercom partition name in the Selected Intercom Partitions list box. Move the intercom partition up or down in the list by clicking the arrows on the right side of the list box.

The following figure provides examples of the maximum number of intercom partitions that can be added to a calling search space if intercom partition names are of fixed length.

Table 6: Calling Search Space Partition Limitations

Partition Name Length	Maximum Number of Partitions
2 characters	170
3 characters	128
4 characters	102
5 characters	86
. . .	. . .
10 characters	46
15 characters	32

Delete an Intercom Calling Search Space

The following procedure describes how to delete an intercom calling search space.

Before you begin

You cannot delete intercom calling search spaces that devices, lines (DNs), translation patterns, or other items are using. To find out which devices, lines, translation patterns, or other items are using the intercom calling search space, choose the Dependency Records from the Related Links drop-down list box in the Intercom Calling Search Space Configuration window and click Go. If the dependency records are not enabled for the system, the dependency records summary window displays a message. For more information about dependency records, see the Cisco Unified Communications Manager Administration Guide. If you try to delete an intercom calling search space that is in use, Cisco Unified Communications Manager displays a message. Before deleting an intercom calling search space that is currently in use, you must perform either or both of the following tasks:

- Assign a different intercom calling search space to any devices, lines, or translation patterns that are using the intercom calling search space that you want to delete. See the Intercom Directory Number Configuration, on page 27 and the Intercom Translation Pattern Configuration, on page 18.
- Delete the devices, lines, or translation patterns that are using the intercom calling search space that you want to delete. See the Intercom Translation Pattern Configuration, on page 18, and the Delete an Intercom Translation Pattern, on page 26.

Procedure

Step 1 In the menu bar, choose **Call Routing** > **Intercom** > **Intercom Calling Search Space**.

Step 2 Locate the intercom calling search space that you want to delete. See the Find an Intercom Calling Search Space, on page 14.

Step 3 Check the check box of the intercom calling search space that you want to delete and click **Delete Selected**.

A message displays that states that you cannot undo this action.

Step 4 To delete the intercom calling search space, Click **OK** or click **Cancel**.

Caution Before initiating this action, check carefully to ensure that you are deleting the correct intercom calling search space. You cannot retrieve deleted intercom calling search spaces. If an intercom calling search space is accidentally deleted, you must rebuild it.

Tip You can also delete an intercom calling search space by locating and displaying the intercom calling search space that you want to delete and clicking **Delete**.

Related Topics

Intercom Translation Pattern Configuration, on page 18

Intercom Translation Pattern Configuration

This section provides information to add, update, copy, or delete an intercom translation pattern. Cisco Unified Communications Manager uses intercom translation patterns to manipulate dialed digits before it routes 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.

Find an Intercom Translation Pattern

The Find and List window for intercom translation patterns allows you to search on intercom translation patterns, which Cisco Unified Communications Manager uses to manipulate dialed digits before it routes a call.

Because you might have several intercom translation patterns in your network, Cisco Unified Communications Manager lets you locate specific intercom translation patterns by using specific criteria as the basis. Use the following procedure to locate intercom translation patterns.

Note During your work in a browser session, Cisco Unified Communications Manager Administration retains your intercom translation pattern search preferences. If you navigate to other menu items and return to this menu item, Cisco Unified Communications Manager Administration retains your intercom translation pattern search preferences until you modify your search or close the browser.

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Translation Pattern**.

The Find and List Intercom Directory Numbers window displays. Records from an active (prior) query may also display in the window.

Step 2 To filter or search records

a) From the first drop-down list box, select a search parameter.
b) From the second drop-down list box, select a search pattern.
c) Specify the appropriate search text, if applicable.

Note To add additional search criteria, click the + button. When you add criteria, the system searches for a record that matches all criteria that you specify. To remove criteria, click the – button to remove the last added criterion or click the Clear Filter button to remove all added search criteria.

Step 3 To find all records in the database, ensure the dialog box is empty, click **Find.**

All matching records display. You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box.

Note You can delete multiple records from the database by checking the check boxes next to the appropriate record and clicking **Delete Selected**. You can delete all configurable records for this selection by clicking **Select All** and then clicking **Delete Selected**.

Step 4 From the list of records that display, click the link for the record that you want to view.

Note To reverse the sort order, click the up or down arrow, if available, in the list header.

The window displays the item that you choose.

Related Topics

Intercom Directory Number Configuration, on page 27

Configure an Intercom Translation Pattern

This section describes how to configure an intercom translation pattern.

Before you begin

Configure the following Cisco Unified Communications Manager intercom items before configuring an intercom translation pattern:

- Intercom partition
- Intercom route filter
- Intercom calling search space

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Translation Pattern**.

The Find and List Intercom Translation Patterns window displays.

Step 2 Perform one of the followings tasks:

a) To copy an existing intercom translation pattern, locate the appropriate intercom translation pattern as described in the Find an Intercom Translation Pattern, on page 19, click the **Copy** button next to the intercom translation pattern that you want to copy.

b) To add a new intercom translation pattern, click the **Add New** button.

Step 3 In the Intercom Translation Pattern Configuration window that displays, enter the appropriate configuration settings as described in Intercom Calling Search Space Configuration, on page 16.

Step 4 Click **Save**.

Note Ensure that the intercom translation pattern, that uses the selected partition, route filter, and numbering plan combination, is unique. Check the route pattern/hunt pilot, translation pattern, directory number, call park number, call pickup number, or meet-me number configuration windows if you receive an error that indicates duplicate entries.

The Intercom Translation Pattern Configuration window displays the newly configured intercom translation pattern.

Related Topics

Intercom Directory Number Configuration, on page 27

Intercom Translation Pattern Configuration Settings

Cisco Unified Communications Manager uses intercom translation patterns to manipulate dialed digits before it routes 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.

The following table describes the available fields in the Intercom Translation Pattern Configuration window.

Table 7: Translation Pattern Configuration Settings

Field	Description
Pattern Definition	
Intercom Translation Pattern	Enter the intercom translation pattern, including numbers and wildcards (do not use spaces), in the Intercom Translation Pattern field. For example, for the NANP, enter 9.@ for typical local access or 8XXX for a typical private network numbering plan. Valid characters include the uppercase characters A, B, C, and D and \+, which represents the international escape character +. If you leave this field blank, you must select a partition from the Partition drop-down list box. **Note** Ensure that the intercom translation pattern, which uses the chosen intercom partition, route filter, and numbering plan combination, is unique. Check the route pattern/hunt pilot, translation pattern, directory number, call park number, call pickup number, or meet-me number if you receive a message that indicates duplicate entries. Alternatively, check the route plan report if you receive a message that indicates duplicate entries.
Partition	Choose an intercom partition. If you do not want to assign an intercom partition, choose <None>. If you choose <None>, you must enter a value in the Intercom Translation Pattern field. You can configure the number of intercom partitions that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more intercom partitions exist than the Max List Box Items enterprise parameter specifies, the Find button displays next to the drop-down list box. Click the Find button to display the Find and List Partitions window. Find and choose an intercom partition name. **Note** To set the maximum list box items, choose **System** > **Enterprise Parameters** and choose **CCMAdmin Parameters**. **Note** Make sure that the combination of intercom translation pattern, route filter, and intercom partition is unique within the Cisco Unified Communications Manager cluster.

Field	Description
Description	Enter a description for the intercom translation pattern. The description can include up to 50 characters in any language, but it cannot include double-quotes (“), percentage sign (%), ampersand (&), or angle brackets (<>).
Numbering Plan	Choose a numbering plan. If your intercom translation pattern includes the @ wildcard, you may choose a numbering plan. The optional act of choosing a numbering plan restricts certain number patterns.
Route Filter	Choosing an optional route filter restricts certain number patterns. The route filters that display depend on the numbering plan that you choose from the Numbering Plan drop-down list box. If more than 250 route filters exist, the **Find** button displays next to the drop-down list box. Click the **Find** button to display the Select Route Filters window. Enter a partial route filter name in the List items where Name contains field. Click the desired route filter name in the list of route filters that displays in the Select item to use box and click **Add Selected**. **Note** To set the maximum list box items, choose **System** > **Enterprise Parameters** and choose **CCMAdmin Parameters**.
MLPP Precedence	Choose an MLPP precedence setting for this intercom translation pattern from the drop-down list box: • Executive Override - Highest precedence setting for MLPP calls. • Flash Override - Second highest precedence setting for MLPP calls. • Flash - Third highest precedence setting for MLPP calls. • Immediate - Fourth highest precedence setting for MLPP calls. • Priority - Fifth highest precedence setting for MLPP calls. • Routine - Lowest precedence setting for MLPP calls. • Default - Does not override the incoming precedence level but rather lets it pass unchanged.

Field	Description
Calling Search Space	From the drop-down list box, choose the intercom calling search space for which you are adding an intercom translation pattern, if necessary. You can configure the number of intercom calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more intercom calling search spaces exist than the Max List Box Items enterprise parameter specifies, the Find button displays next to the drop-down list box. Click the Find button to display the Find and List Calling Search Space window. Find and choose an intercom calling search space name.
Route Option	The Route Option designation indicates whether you want this intercom translation pattern to be 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. If you choose the Block this pattern radio button, you must choose the reason for which you want this intercom translation pattern to block calls. Choose a value from the drop-down list box: • No Error • Unallocated Number • Call Rejected • Number Changed • Invalid Number Format • Precedence Level Exceeded
Provide Outside Dial Tone	Outside dial tone indicates that Cisco Unified Communications Manager routes the calls off the local network. Check this check box for each intercom translation pattern that you consider to be off network.
Urgent Priority	If the dial plan contains overlapping patterns, Cisco Unified Communications Manager does not route the call until the interdigit timer expires (even if it is possible to dial a sequence of digits to choose a current match). Check this check box to interrupt interdigit timing when Cisco Unified Communications Manager must route a call immediately. By default, the Urgent Priority check box displays as checked. Unless your dial plan contains overlapping patterns or variable length patterns that contain !, Cisco recommends that you do not uncheck the check box.

Field	Description
Calling Party Transformations	
Use Calling Party's External Phone Number Mask	Check the check box if you want the full, external phone number to be used for calling line identification (CLID) on outgoing calls.
Calling Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard characters asterisk (*) and octothorpe (#), the international escape character + and blank. If this field is blank and the preceding field is not checked, no calling party transformation takes place.
Prefix Digits (Outgoing Calls)	Enter prefix digits. Valid entries include the digits 0 through 9, the wildcard characters asterisk (*) and octothorpe (#), and the international escape character +. **Note** The appended prefix digit does not affect which directory numbers route to the assigned device.
Calling Line ID Presentation	Cisco Unified Communications Manager uses calling line ID presentation (CLIP/CLIR) as a supplementary service to allow or restrict the originating caller phone number on a call-by-call basis. Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party phone number on the called party phone display for this intercom translation pattern. Choose Default if you do not want to change calling line ID presentation. Choose Allowed if you want Cisco Unified Communications Manager to allow the display of the calling number. Choose Restricted if you want Cisco Unified Communications Manager to block the display of the calling number. **Note** Use this parameter and the Connected Line ID Presentation parameter, in combination with the Ignore Presentation Indicators (internal calls only) device-level parameter, to configure call display restrictions. Together, these settings allow you to selectively present or restrict calling and/or connected line display information for each call.

Field	Description
Calling Name Presentation	Cisco Unified Communications Manager uses calling name presentation (CNIP/CNIR) as a supplementary service to allow or restrict the originating caller name on a call-by-call basis. Choose whether you want the Cisco Unified Communications Manager to allow or restrict the display of the calling party name on the called party phone display for this intercom translation pattern. Choose Default if you do not want to change calling name presentation. Choose Allowed if you want Cisco Unified Communications Manager to display the calling name information. Choose Restricted if you want Cisco Unified Communications Manager to block the display of the calling name information.
Connected Party Transformations	
Connected Line ID Presentation	Cisco Unified Communications Manager uses connected line ID presentation (COLP/COLR) as a supplementary service to allow or restrict the called party phone number on a call-by-call basis. Choose whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party phone number on the calling party phone display for this intercom translation pattern. Choose Default if you do not want to change the connected line ID presentation. Choose Allowed if you want to display the connected party phone number. Choose Restricted if you want Cisco Unified Communications Manager to block the display of the connected party phone number.

Field	Description
Connected Name Presentation	Cisco Unified Communications Manager uses connected name presentation (CONP/CONR) as a supplementary service to allow or restrict the called party name on a call-by-call basis. Choose whether you want Cisco Unified Communications Manager to allow or restrict the display of the connected party name on the calling party phone display for this intercom translation pattern. Choose Default if you do not want to change the connected name presentation. Choose Allowed if you want to display the connected party name. Choose Restricted if you want Cisco Unified Communications Manager to block the display of the connected party name.
Called Party Transformations	
Discard Digits	Choose the discard digits instructions that you want to be associated with this intercom translation pattern. **Note** The discard digits that display depend on the numbering plan that you choose from the Numbering Plan drop-down list box.
Called Party Transform Mask	Enter a transformation mask value. Valid entries include the digits 0 through 9, the wildcard characters asterisk (*) and octothorpe (#), the international escape character + and blank. If the field is blank, no transformation takes place. The dialed digits get sent exactly as dialed.
Prefix Digits (Outgoing Calls)	Enter prefix digits. Valid entries include the digits 0 through 9, the wildcard characters asterisk (*) and octothorpe (#), the international escape character + and blank. **Note** The appended prefix digit does not affect which directory numbers route to the assigned device.

Delete an Intercom Translation Pattern

This section describes how to delete an intercom translation pattern.

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Translation Pattern**.

Step 2 Locate the intercom translation pattern that you want to delete. See the Find an Intercom Translation Pattern, on page 19.

Step 3 Check the check box of the intercom translation pattern that you want to delete and click **Delete Selected**.

A message displays that states that you cannot undo this action.

Step 4 To delete the intercom translation pattern, click **OK** or to cancel the deletion, click **Cancel**.

Caution Check carefully to ensure that you are deleting the correct intercom translation pattern before you initiate this action. You cannot retrieve deleted intercom translation patterns. If you accidentally delete an intercom translation pattern, you must rebuild it.

Tip You can also delete an intercom translation pattern by locating and displaying the intercom translation pattern that you want to delete and clicking Delete.

Related Topics

Intercom Directory Number Configuration, on page 27

Intercom Directory Number Configuration

This section provides information about working with and configuring intercom directory numbers (DNs) in Cisco Unified Communications Manager Administration.

Related Topics

Intercom, on page 1

Intercom Directory Number Configuration Overview

Using Cisco Unified Communications Manager Administration, configure and modify intercom directory numbers (DNs) that are assigned to specific phones. These sections provide instructions for working with intercom directory numbers.

Note Be aware that a partition is required for intercom directory numbers.

Note Intercom directory numbers require configuration of the Default Activated Device field in the Intercom Directory Number Configuration window as specified in the Intercom Directory Number Configuration Settings, on page 30 if the intercom directory number is to be active. You can also configure intercom directory numbers for use with Cisco Extension Mobility as specified in the same description.

Related Topics

Intercom, on page 1

Find an Intercom Directory Number

The Find and List window for intercom directory numbers allows you to search for intercom directory numbers, which are directory numbers that are used for the intercom feature and are assigned to specific phones. Use the following procedure to find an intercom directory number (DN).

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Directory Number**.

The Find and List Intercom Directory Numbers window displays. Records from an active (prior) query may also display in the window.

Step 2 To filter or search records

a) From the first drop-down list box, select a search parameter.
b) From the second drop-down list box, select a search pattern.
c) Specify the appropriate search text, if applicable.

Note To add additional search criteria, click the + button. When you add criteria, the system searches for a record that matches all criteria that you specify. To remove criteria, click the – button to remove the last added criterion or click the **Clear Filter** button to remove all added search criteria.

Step 3 To find all records in the database, ensure the dialog box is empty, click **Find.**

All matching records display. You can change the number of items that display on each page by choosing a different value from the Rows per Page drop-down list box.

Note You can delete multiple records from the database by checking the check boxes next to the appropriate record and clicking **Delete Selected**. You can delete all configurable records for this selection by clicking **Select All** and then clicking **Delete Selected**.

Step 4 From the list of records that display, click the link for the record that you want to view.

Note To reverse the sort order, click the up or down arrow, if available, in the list header.

The window displays the item that you choose.

Related Topics

Intercom, on page 1

Configure an Intercom Directory Number

Follow these instructions to add or update an intercom directory number (DN). You can configure the call forward, call pickup, and MLPP phone features while you are adding the directory number.

Tip You can assign patterns to intercom directory numbers; for example, 352XX. To avoid user confusion when you assign a pattern to an intercom directory number, add text or digits to the intercom DN configuration fields, Line Text Label, Display (Internal Caller ID), and External Phone Number Mask. (These fields display for an intercom directory number only after you add the intercom directory number and you associate the intercom directory number with a phone.)

Tip For example, add the user name to the line text label and internal caller ID, but add the outside line number to the external number mask, so, when the calling information displays, it says John Chan, not 352XX.

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Directory Number**.

The Find and List Intercom Directory Numbers window displays.

Step 2 To locate a specific intercom directory number, enter search criteria and click **Find.**

A list of intercom directory numbers that match the search criteria displays.

Step 3 Perform one of the followings tasks:

a) To add an intercom directory number, click the **Add New** button to add a new intercom directory number. The Intercom Directory Number Configuration window displays.

Note The Phone Configuration window provides an alternate method for adding a directory number. Use the **Device** > **Phone** menu option and create a new phone or search for an existing phone. After you create the new phone or display the existing phone, click either the **Line [1] - Add a new DN** or **Line [2] - Add a new DN** link in the Association Information area on the left side of the Phone Configuration window. The Directory Number Configuration window displays.

b) To update an intercom directory number, click the intercom directory number that you want to update. The Intercom Directory Number Configuration window displays.

Step 4 Update the appropriate settings as described in Intercom Directory Number Configuration Settings, on page 30.

Step 5 Click **Save.**

Note See the Synchronize an Intercom Directory Number with Affected Devices, on page 37 before deciding whether to continue to the next step below.

Step 6 Click **Reset Phone**. For more information, see the Cisco Unified Communications Manager Administration Guide.

Tip If you need more than two lines, you can increase the lines by modifying the phone button template for the phone type. Some phone types, however, only support one or two lines (such as Cisco Unified IP Phone 7906).

Note Restart devices as soon as possible. During this process, the system may drop calls on gateways.

Related Topics

Intercom, on page 1

Intercom Directory Number Configuration Settings

For intercom, you must configure an intercom directory number.

Tip You can assign patterns to intercom directory numbers; for example, 352XX. To avoid user confusion when you assign a pattern to an intercom directory number, add text or digits to the intercom DN configuration fields, Line Text Label, Display (Internal Caller ID), and External Phone Number Mask. (These fields display for a intercom directory number only after you add the intercom directory number and you associate the intercom directory number with a phone.)

Tip For example, add the user name to the line text label and internal caller ID, but add the outside line number to the external number mask, so, when the calling information displays, it says John Chan, not 352XX.

Note Be aware that a partition is required for intercom directory numbers.

Note Intercom directory numbers require configuration of the Default Activated Device field in the Intercom Directory Number Configuration window as specified in the following table if the intercom directory number is to be active. You can also configure intercom directory numbers for use with Cisco Extension Mobility as specified in the same description.

The following table describes the fields that are available in the Intercom Directory Number Configuration window.

Table 8: Intercom Directory Number Configuration Settings

Field	Description
Intercom Directory Number Information	

Field	Description
Intercom Directory Number	Enter a dialable phone number. Values can include numeric characters and route pattern wildcards and special characters except for (.) and (@). The intercom directory number that you enter can appear in more than one intercom partition. At the beginning of the intercom directory number, enter \+ if you want to use the international escape character +. For this field, \+ does not represent a wildcard; instead, entering \+ represents a dialed digit.
Route Partition	Choose the intercom partition to which the intercom directory number belongs. Make sure that the intercom directory number that you enter in the Intercom Directory Number field is unique within the intercom partition that you choose. You can configure the number of intercom partitions that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more intercom partitions exist than the Max List Box Items enterprise parameter specifies, the Find button displays next to the drop-down list box. Click the Find button to display the Find and List Partition window. Enter a partial intercom partition name in the List items where Name contains field. Click the desired intercom partition name in the list of intercom partitions that displays in the Select item to use box and click Add Selected. **Note** To set the maximum list box items, choose System > Enterprise Parameters and choose CCMAdmin Parameters.
Description	Enter a description of the intercom directory number and intercom route partition. The description can include up to 50 characters in any language, but it cannot include double-quotes (“), percentage sign (%), ampersand (&), or angle brackets (<>).

Field	Description
Alerting Name	Enter a name that you want to display on the phone of the caller. This setting, which supports the Identification Services for the QSIG protocol, applies to shared and nonshared directory numbers. If you configure an alerting name for a directory number with shared-line appearances, when the phone rings at the terminating PINX, the system performs the following tasks: • Forwards the name of the caller that is assigned to the directory number. • Applies the Connected Name Restrictions (CONR) that are configured for the translation pattern (if restrictions exist); the originating PINX may modify the CONR, depending on the route pattern configuration. If you do not configure an alerting name, “Name Not Available” may display on the caller phone. If you do not enter a name for the Display (Internal Caller ID) field, the information in the Alerting Name field displays in the Display (Internal Caller ID) field. If you set the Always Display Original Dialed Number service parameter to True, the alerting name does not display on the calling phone; only the original dialed number displays.
ASCII Alerting Name	This field provides the same information as the Alerting Name field, but you must limit input to ASCII characters. Devices that do not support Unicode (internationalized) characters display the content of the Alerting Name ASCII field.
Allow Control of Device from CTI	Check this check box to allow CTI to control and monitor a line on a device with which this intercom directory number is associated

Field	Description
Associated Devices	After you associate this intercom directory number with a device, this pane displays the device with which this intercom directory number is associated. **Note** An intercom directory number can be associated with at most one device. To edit a device with which this intercom directory number is associated, choose a device name in the Associated Devices pane and click the Edit Device button. The Phone Configuration window or Device Profile Configuration window displays for the device that you choose. To edit a line appearance that has been defined for this intercom directory number, choose a device name in the Associated Devices pane and click the Edit Line Appearance button. The Directory Number Configuration window or Device Profile Configuration window refreshes to show the line appearance for this DN on the device that you choose. To associate a device to this intercom directory number from the list of devices in the Dissociate Devices pane, choose a device in the Dissociate Devices pane and add it to the Associated Devices pane by clicking the up arrow between the two panes.
Dissociate Devices	If you choose to dissociate an intercom directory number from a device, this pane displays the device(s) from which you dissociate this intercom directory number. Choose a device in the Associated Devices pane and add it to the Dissociate Devices pane by clicking the down arrow between the two panes.
Intercom Directory Number Settings	

Field	Description
Calling Search Space	

Field	Description
	From the drop-down list box, choose the appropriate intercom calling search space. An intercom calling search space comprises a collection of intercom partitions that are searched for numbers that are called from this intercom directory number. The value that you choose applies to all devices that are using this intercom directory number. Changes result in an update of the numbers that the Call Pickup Group field lists. You can configure calling search space for forward all, forward busy, forward no answer, forward no coverage, and forward on CTI failure directory numbers. The value that you choose applies to all devices that are using this directory number. You must configure either primary forward all calling search space or secondary forward all calling search space or both for call forward all to work properly. The system uses these concatenated fields (Primary CFA CSS + Secondary CFA CSS) to validate the CFA destination and forward the call to the CFA destination. **Note** If the system is using partitions and calling search spaces, Cisco recommends that you configure the other call forward calling search spaces as well. When a call is forwarded or redirected to the call forward destination, the configured call forward calling search space gets used to forward the call. If the forward calling search space is None, the forward operation may fail if the system is using partitions and calling search spaces. For example, if you configure the forward busy destination, you should also configure the forward busy calling search space. If you do not configure the forward busy calling search space and the forward busy destination is in a partition, the forward operation may fail. When you forward calls by using the CFwdAll softkey on the phone, the automatic combination of the line CSS and device CSS does not get used. Only the configured Primary CFA CSS and Secondary CFA CSS get used. If both of these fields are None, the combination results in two null partitions, which may cause the operation to fail.

Field	Description
	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.
BLF Presence Group	Configure this field with the BLF presence group feature. From the drop-down list box, choose a BLF Presence Group for this intercom directory number. The selected group specifies the devices, end users, and application users that can monitor this intercom directory number. The default value for BLF Presence Group specifies Standard Presence group, configured with installation. BLF Presence groups that are configured in Cisco Unified Communications Manager Administration also appear in the drop-down list box. Presence authorization works with BLF presence groups to allow or block presence requests between groups.
Auto Answer	Choose one of the following options to activate the auto answer feature for this intercom directory number: • Auto Answer with Headset • Auto Answer with Speakerphone **Note** Make sure that the headset or speakerphone is not disabled when you choose Auto Answer with headset or Auto Answer with speakerphone. **Note** Do not configure auto answer for devices that have shared lines. **Note** For an intercom line on a CTIPort device, autoanswer-speakerphone and autoanswer-headset means that the autoanswer is on. The speakerphone or headset options do not apply to CTIPort devices; instead, it just indicates that the line is capable of auto-answering. Applications have responsibility for terminating the media on CTIPort devices and can terminate the media on either type of output device.

Field	Description
Default Activated Device	From the drop-down list box, choose a default activated device for this intercom directory number. The selected device specifies the phone on which this intercom directory number is activated by default. The drop-down list box lists only devices that support intercom. **Note** You must specify a default activated device for this intercom directory number to be active as an intercom line. **Note** If an intercom directory number is specified in a device profile that is configured for Cisco Extension Mobility, that intercom directory number will display as an intercom line only when a user logs in to the specified default activated device by using that device profile, as long as the device supports the intercom feature.

Calling Search Space

You can configure the number of intercom calling search spaces that display in this drop-down list box by using the Max List Box Items enterprise parameter. If more intercom calling search spaces exist than the Max List Box Items enterprise parameter specifies, the Find button displays next to the drop-down list box. Click the Find button to display the Find and List Calling Search Spaces window. Enter a partial intercom calling search space name in the List items where Name contains field. Click the desired intercom calling search space name in the list of intercom calling search spaces that displays in the Select item to use box and click Add Selected.

Note To set the maximum list box items, choose **System** > **Enterprise Parameters** and choose CCMAdmin Parameters.

Synchronize an Intercom Directory Number with Affected Devices

To synchronize devices with an intercom directory number that has undergone configuration changes, perform the following procedure, which will apply any outstanding configuration settings in the least-intrusive manner possible. (For example, a reset/restart may not be required on some affected devices.)

Procedure

Step 1 Choose **Call Routing** > **Intercom** > **Intercom Directory Number**.

The Find and List Intercom Directory Numbers window displays.

Step 2 Choose the search criteria to use.

Step 3 Click **Find.**

The window displays a list of intercom directory numbers that match the search criteria.

Step 4 Click the intercom directory number to which you want to synchronize applicable devices. The Intercom Directory Number Configuration window displays.

Step 5 Make any additional configuration changes.

Step 6 Click **Save.**

Step 7 Click **Apply Config**.

The Apply Configuration Information dialog displays.

Step 8 Click **OK**.

Intercom Line and Speed Dial Configuration

To configure the intercom line, perform the following procedure:

Procedure

Step 1 If you have not already done so, create the intercom partition.

Step 2 If you have not already done so, create the intercom directory number.

Step 3 Click **Device** > **Device Settings** > **Phone Button Template** and add the intercom line to an existing phone button template or create a new template.

Note Be aware that the intercom line cannot be configured as the primary line.

Step 4 Choose **DevicePhone** and assign an intercom directory number to the intercom line.

Step 5 Configure the intercom directory number and set up intercom speed dial, if desired.

Note You can configure the intercom line with a predefined destination (speed dial) to allow fast access.

Related Topics

Intercom Partition Configuration, on page 8
Intercom Directory Number Configuration, on page 27

Intercom Operation

This section provides information about how to use intercom.

Case Studies

The following information explains how intercom works when it is initiated to an idle phone and to a busy phone.

Intercom to an Idle Phone

When Alice intercoms Bob, Bob will receive an intercom tone first, followed by the voice of Alice. Alice, however, will not hear Bob.

If Bob has his headset on, he will use it to hear Alice; otherwise, the speaker will get used.

Intercom to a Busy Phone

Bob and Carol are speaking when Alice places an intercom call to Bob. The voice of Alice voice will get mixed with the voice of Carol voice to be played to Bob; however, Alice cannot hear Bob, while Carol will continue to hear Bob.

For most cases, Carol will only hear Bob, but not Alice; however, if Bob is using speakerphone when conversing with Carol, the voices of Alice and Bob might be mixed when they are sent to Carol.

The busy phone means that an active call exists on the phone of Bob, or it represents an outgoing call that has not connected yet.

For intercom terminating caller to end the intercom call without talking to the originator, the caller needs to press I-help button followed by intercom button to bring the softkey set for intercom into focus. User then can press ‘EndCall’ softkey to end the call.

Illustrated Explanation of Intercom

This section describes how intercom works in several different scenarios.

Scenario 1

The phone that belongs to Anna, while idle, receives an intercom call from Gerald who is the preconfigured intercom target.

Figure 1: Idle

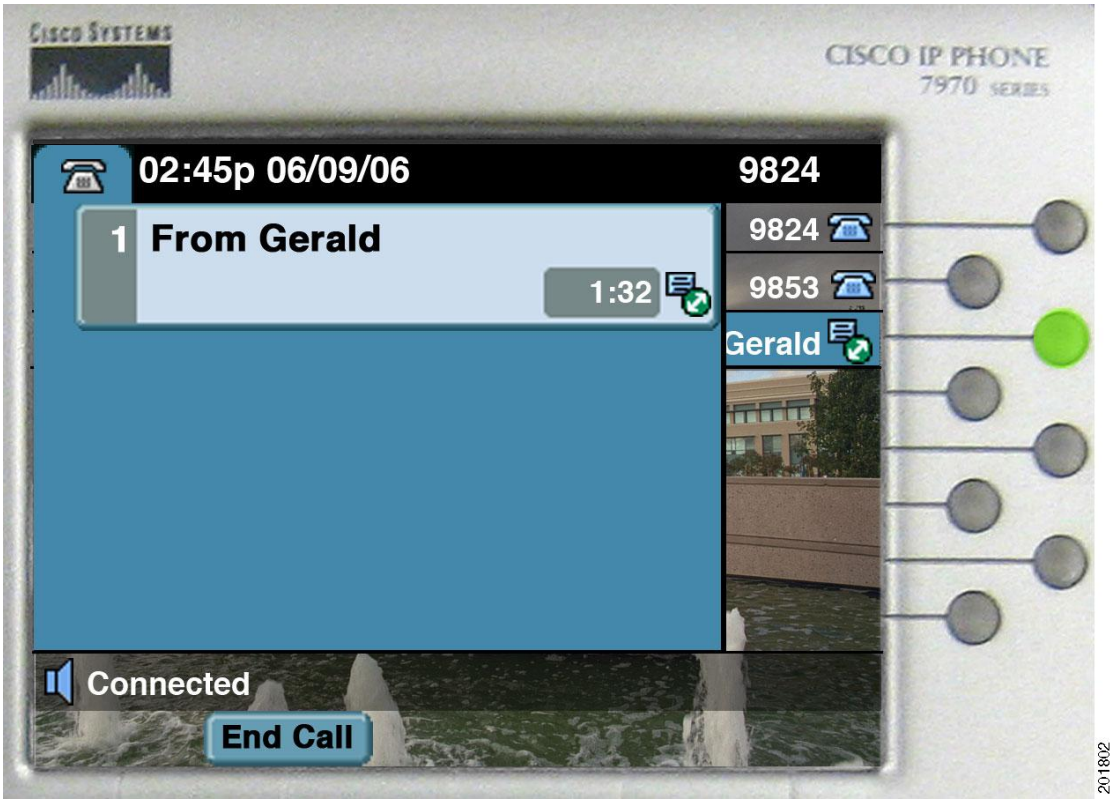
- Before Gerald places the intercom call to Anna, her phone is idle.
  - The line key and the intercom key appear dark.

Figure 2: Whisper

- The intercom line becomes active, and a call from Gerald appears.
  - The intercom key displays solid amber.
- Both phones receive auto-answer alert tones.
- Anna hears Gerald speaking, but Gerald cannot hear Anna until she addresses the intercom call.

Note Pressing the Mute key will not address the intercom call; it will only cause the status line to display “That key is not active here.”

Figure 3: Connected



- Anna addresses the intercom call by pressing the intercom line key.
  - The intercom key displays solid green.

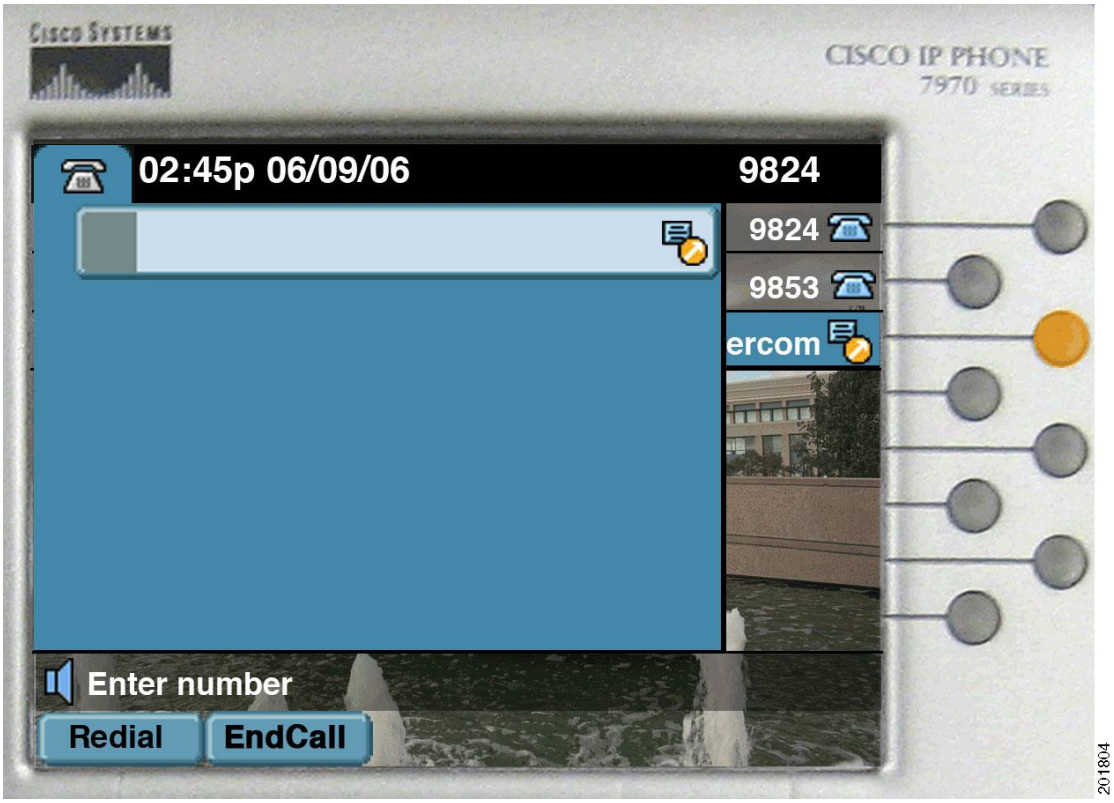
Note The call timer does not reset but continues from the whisper state.

Scenario 2

Anna, while her phone is idle, places an intercom call to Gerald's phone, the preconfigured intercom target.

Figure 4: Whisper

Figure 5: Connected



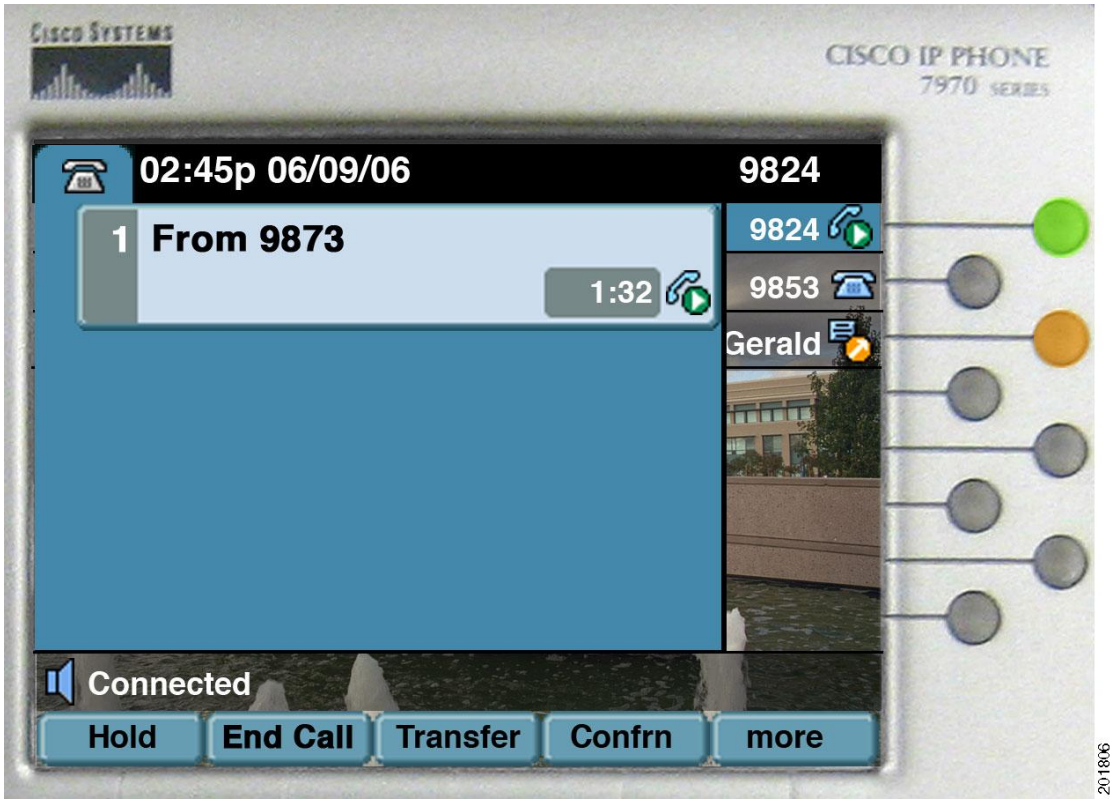
- Gerald addresses the intercom call by pressing the intercom line key.
  - The intercom key displays solid green.

Note The call timer does not reset.

Scenario 3

Anna, while on a connected or held call, receives an intercom call from Gerald, the preconfigured intercom target

Figure 6: Whisper



- While Anna is speaking on the phone, the preconfigured intercom line indicator flashes amber, which indicates that Gerald is calling Anna on the intercom line.
  - The line key displays solid green.
  - The intercom key displays solid amber.

Note When Auto Line Select is disabled, which represents the default, the current call retains focus.

- The phone that Anna is using plays an auto-answer alert tone, followed by the voice of Gerald.
- Anna can hear Gerald, but Gerald cannot hear Anna until she addresses the intercom call.
- The current caller, who is at 9873 and is on the line with Anna, can hear Anna but cannot hear Gerald.

Figure 7: Connected

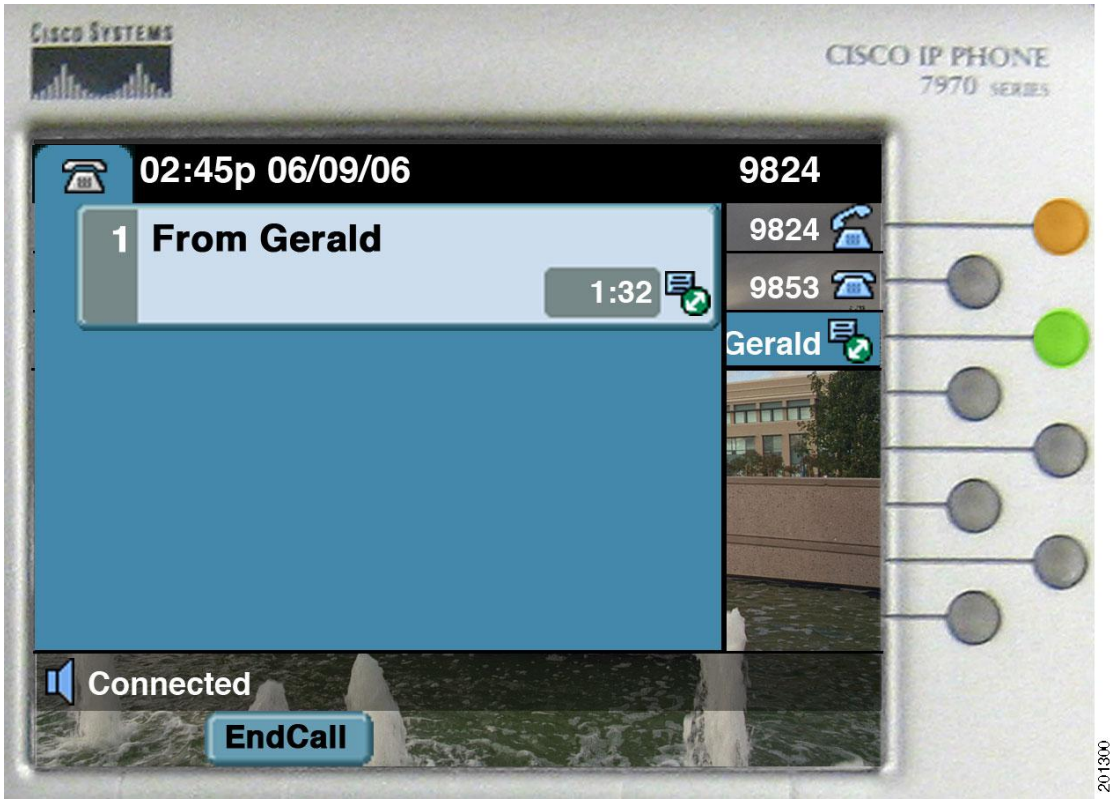
- Anna addresses the intercom call by pressing the intercom line key.
  - The line key flashes green.
- The intercom call gains focus, and the previous call gets put on hold.
  - The intercom line key displays solid green.

Note The call timer represents the cumulative call time from the whisper state and the current connected state.

Scenario 4

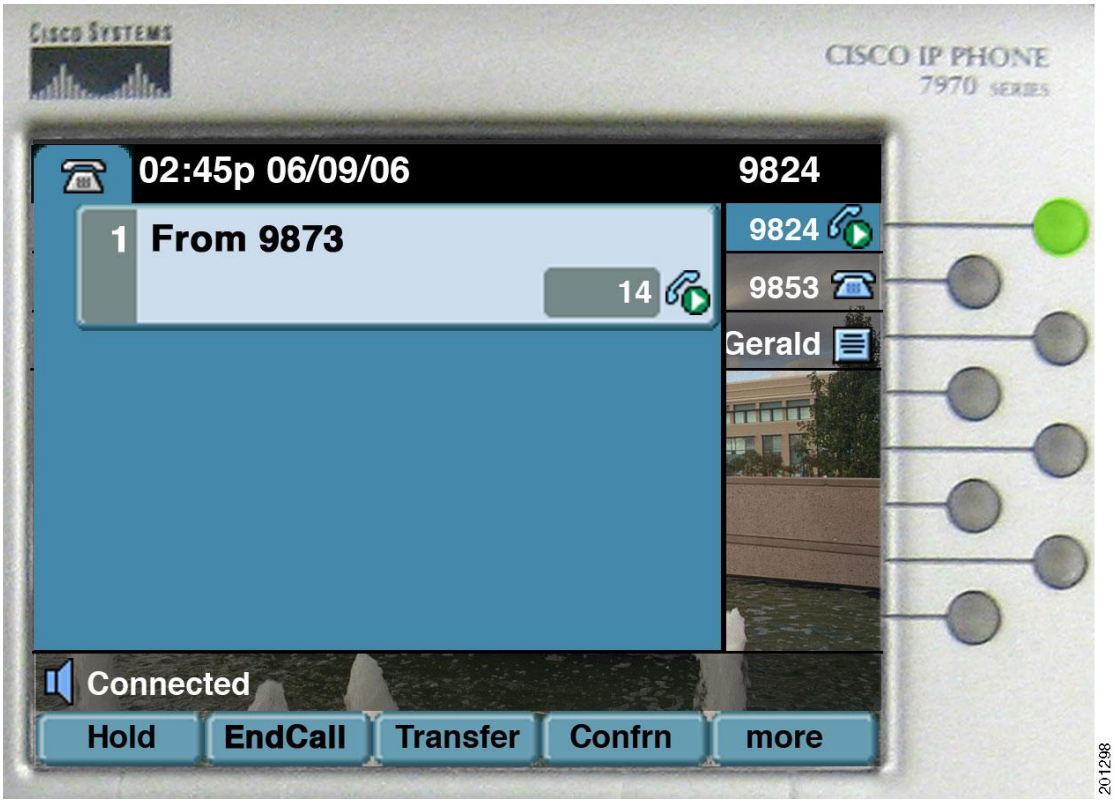
Anna, while on a whispered or connected intercom call, receives a new call on the primary line.

Figure 8: Connected



- Anna is talking to Gerald on an intercom line when a call displays for 9824, which is her extension. The intercom call retains focus.
  - The line key flashes amber.
  - The intercom key displays solid green.

Figure 9: Idle



- Anna accepts the incoming call by pressing the 9824 line key.
  - The line key displays solid green.
- The incoming call receives focus and gets connected.
- The system clears the intercom call.
  - The intercom key displays dark.

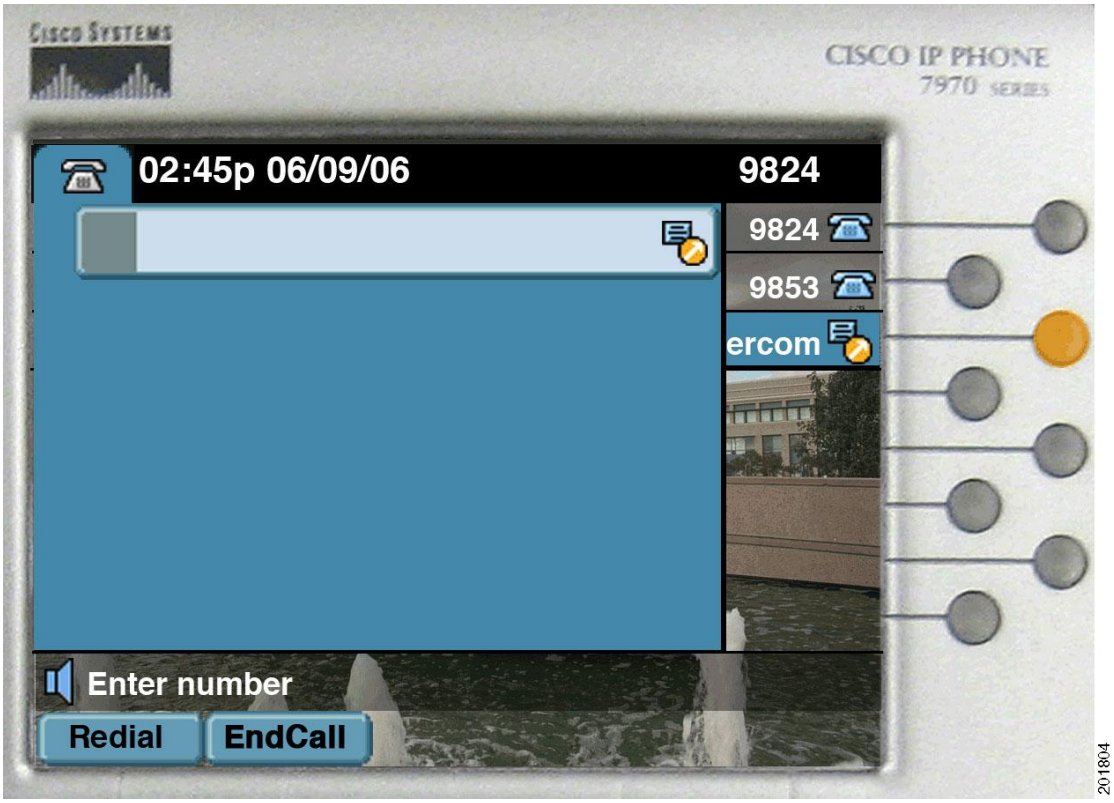
Scenario 5

Anna, while idle, places an intercom call to Gerald. The intercom line has no preconfigured target.

Figure 10: Idle

- All the line keys display dark.

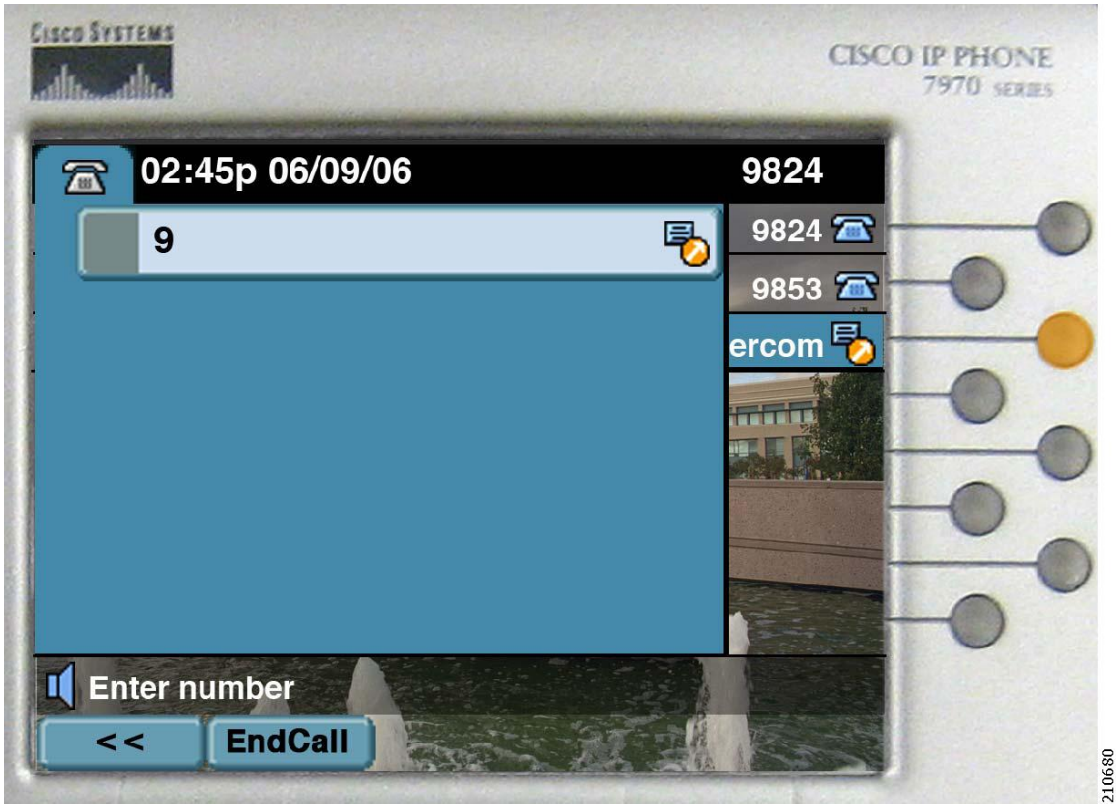
Figure 11: Dial Out



- Anna presses the intercom line key, which invokes the dial-out state.
  - The intercom key displays solid amber.
- The phone receives an “inside” dial tone.

Note At this time, if Anna dials any number other than an intercom number, the phone receives a fast busy tone.

Figure 12: Digits After First



- Anna begins to dial, which invokes the digits after first state.
  - The intercom kay displays solid amber.

Figure 13: Whisper

- After Anna dials the intercom number, the whisper state exists.
  - The intercom key displays solid amber.
- The phone plays an auto-answer alert.
- Gerald can hear Anna, but Anna cannot hear Gerald until he addresses the intercom call.

Figure 14: Connected

- Gerald addresses the intercom call by pressing the intercom line key.
    - Anna can see that the intercom key displays solid green.
- The call timer does not reset but, instead, continues from the whisper state.