



# Intercom

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## Intercom Overview

Intercom is a type of phone line that 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 answers automatically to one-way audio whisper. The recipient can then acknowledge the whispered call and initiate a two-way intercom call.

You 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.

Intercom allows a user to place a call to a predefined target. The called destination answers the call automatically 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, Unified Communications Manager implements whisper intercom. Whisper intercom ensures 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.

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

## Intercom and Default Devices

Each intercom line needs a default device. The intercom line is displayed 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 is displayed when the user logs in.

## Intercom Prerequisites

The intercom feature has the following system requirements:

- Cisco Unified IP Phones Firmware Release 8.3(1) or later

## Intercom Configuration Task Flow

### Before you begin

- Review [Intercom Prerequisites](#), on page 2.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<a href="#">Configure Intercom Partition</a> , on page 2	To add a new Intercom partition or configure an existing partition.
<b>Step 2</b>	<a href="#">Configure an Intercom Calling Search Space</a> , on page 3	To add a new Intercom Calling Search Space.
<b>Step 3</b>	<a href="#">Configure an Intercom Translation Pattern</a> , on page 3	To add a new Intercom Translation Pattern or to configure an existing Intercom Translation Pattern .
<b>Step 4</b>	<a href="#">Configure an Intercom Directory Number</a> , on page 4	To add or update an Intercom Directory Number.
<b>Step 5</b>	<a href="#">Intercom Line and Speed Dial Configuration</a> , on page 5	Configure Intercom Line and Speed Dial.

## Configure Intercom Partition

### Before you begin

Ensure the phone model supports the Intercom feature for a particular release and device pack [Generate a Phone Feature List](#)

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- Step 1** From Cisco Unified CM Administration, choose **Call Routing > Intercom > Intercom Route Partition**.  
The **Find and List Intercom Partitions** window appears.
- Step 2** Click **Add New**.  
An **Add New Intercom Partition** window appears.
- 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, Unified Communications Manager uses the partition name as the description.

**Step 4** Click **Save**.

**Step 5** Locate the partition that you want to configure.  
**Intercom Partition Configuration** window is displayed

**Step 6** Configure the fields in the Intercom Partition Configuration field area. See the online help for more information about the fields and their configuration options.

**Step 7** Click **Save**.

The **Intercom Partition Configuration** window appears.

**Step 8** Enter the appropriate settings. For detailed information about the Intercom Partition Configuration parameters, see online help.

**Step 9** Click **Save**.

**Step 10** Click **Apply Config**.

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## Configure an Intercom Calling Search Space

### Before you begin

[Configure Intercom Partition, on page 2](#)

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

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

**Step 3** Configure the fields in the Intercom Calling Search Space field area. For more information on the fields and their configuration options, see Online Help.

**Step 4** Click **Save**.

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## Configure an Intercom Translation Pattern

### Before you begin

[Configure an Intercom Calling Search Space, on page 3](#)

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

The **Find and List Intercom Translation Patterns** window appears.

**Step 2** Perform one of the followings tasks:

- a) To copy an existing intercom translation pattern, locate the partition to configure, click **Copy** beside the intercom translation pattern to copy.
- b) To add a new intercom translation pattern, click the **Add New**.

**Step 3** Configure the fields in the Intercom Translation Pattern Configuration field area. For more information on the fields and their configuration options, see Online Help.

**Step 4** Click **Save**.

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

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

## Configure an Intercom Directory Number

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 these intercom DN configuration fields, Line Text Label, Display (Internal Caller ID), and External Phone Number Mask. These fields are displayed for an intercom directory number only after you add the intercom directory number and you associate the intercom directory number with a phone.

For example, add the username to the line text label and internal caller ID, and add the outside line number to the external number mask, when the calling information is displayed, it says John Chan, not 352XX.

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

The **Find and List Intercom Directory Numbers** window is displayed.

**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 displayed.

**Step 3** Perform one of the followings tasks:

- a) To add an intercom directory number, click **Add New**.
- b) To update an intercom directory number, click the intercom directory number to update.

The **Intercom Directory Number Configuration** window displayed.

**Step 4** Configure the fields in the Intercom Directory Number Configuration field area. For more information on the fields and their configuration options, see Online Help.

**Step 5** Click **Save**.

**Step 6** Click **Apply Config**.

**Step 7** Click **Reset Phone**.

**Step 8** Restart devices.

During the restart, the system may drop calls on gateways.

## Intercom Line and Speed Dial Configuration

### Before you begin

[Configure an Intercom Directory Number, on page 4](#)

**Step 1** Choose **Device > Device Settings > Phone Button Template** and add the intercom line to an existing phone button template or create a new template.

**Note** The intercom line cannot be configured as the primary line.

**Step 2** From the **Button Information** area, from **Feature** drop-down list, choose **Intercom**.

**Step 3** From the **Button Information** area, from **Feature** drop-down list, choose **Speed Dial**.

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

**Step 4** Click **Save**.

**Step 5** Click **Apply Config**.

## Intercom Interactions

Feature	Interaction
Bulk Administration Tool	The Unified Communications Manager administrator can use the Bulk Administration Tool to add many intercom users at once instead of adding users individually. For more information, see <a href="#">Bulk Administration Guide for Cisco Unified Communications Manager</a> .
Barge	When the intercom destination is a barge target, the Cisco Unified IP Phone can still support whisper intercom.  When the destination caller chooses to talk to the intercom caller by pressing the intercom button, the original call is put on hold, and the barge initiator is 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 must hang up before the phone can reregister with 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 feature will not be available when the phones are registered with SRST.

Feature	Interaction
Cisco Unified Communications Manager Assistant	With the Unified Communications Manager Assistant Configuration Wizard, <b>Cisco Unified Communications Manager Assistant</b> configuration takes less time and eliminates errors. The partitions, calling search spaces, route point, and translation pattern automatically get created when the administrator successfully runs and completes the configuration wizard.
CTI	<p>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.</p> <p>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.</p>
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 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.
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.
Intercom directory numbers (lines)	Intercom directory numbers (lines) are restricted to one device per intercom line. 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.
Extension mobility profile	An extension mobility profile can be used on more than one phone simultaneously, use the <b>Default Activated Device</b> field in the <b>Intercom Directory Number Configuration</b> window ( <b>Cisco Unified CM Administration &gt; Call Routing &gt; Intercom &gt; Intercom Directory Number Configuration</b> ) to specify which device can display this intercom line. Intercom lines that are not used for Extension Mobility also require configuration of the <b>Default Activated Device</b> field.

## Intercom Restrictions

The following restrictions apply to the Intercom feature:

Feature	Restrictions
Hold	The system does not allow intercom calls to be placed on hold.

Feature	Restrictions
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).
Bandwidth	If sufficient bandwidth does not exist, the intercom call fails.
Call Target	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 in conference.
Monitoring and Recording	When an active call is being monitored or recorded, the user cannot receive nor place intercom calls.
Video	Video is not supported with intercom.
Intercom Partition	An intercom partition assigned to an item such as calling search space or to a route pattern cannot be deleted.
Intercom Calling Search Spaces	Intercom calling search spaces that devices, lines (DNs), translation patterns, or other items are using cannot be deleted.

## Intercom Troubleshooting

### Busy Tone When Dialing Out of Intercom Line

#### Problem

Phone plays busy tone when user is dialing out of intercom line.

#### Possible Cause

The DN is not in the same intercom partition as the calling number.

#### Solution

- Ensure that the DN is in the same intercom partition as the calling number.
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If it is, ensure that the dialed-out DN is configured on another phone and that the phone is registered with the same Unified Communications Manager cluster.

## Intercom Calls cannot use Talkback with Speaker, Handset or Headset

### Problem

User cannot go into talkback mode for intercom calls by using headset, handset, or speaker.

### Possible Cause

This situation exists by design. The only way to go into the connected state for intercom calls is by pressing the corresponding line button.

### Solution

User can end call by using speaker, handset, or headset.

## Troubleshooting SCCP

### Intercom Lines Not Showing Up on Phone

#### Problem

Intercom lines do not display on the phone.

#### Possible Cause

The phone version may be earlier than 8.3(1), or the button template may not be assigned to the phone.

#### Solution

- Check the phone version. Ensure that it is 8.3(1) or later.
- Determine whether the button template is assigned to the phone.
- Capture the sniffer trace between Cisco Unified Communications Manager and the phone. In the button template response, see whether intercom lines get sent to the phone (button definition = 0x17).

### Intercom Lines Not Showing Up When Phone Falls Back to SRST

#### Problem

A phone that was configured with Unified Communications Manager Release 6.0(x) or later, includes two intercom lines. Unified Communications Manager stops and falls back to SRST. The intercom lines do not display.

#### Possible Cause

The SCCP version of SRST does not support SCCP Version 12.



**Solution**

- Check the SCCP Version of SRST. If SRST supports SCCP Version 12, it will support intercom lines.
- If SRST supports SCCP Version 12, capture a sniffer trace and ensure that the button template that the phone sent includes intercom lines.

## Troubleshooting SIP

### Debug Phones That Are Running SIP

Use this debug command: **Debug sip-messages sip-task gsmfsmIsm sip-adapter.**

### Configuration of Phones That Are Running SIP

**Show config**—The command on the phone is displayed if intercom lines are configured as regular lines with featureid-->23.

## Cisco Extension Mobility User Is Logged In But Intercom Line Does Not Display

**Problem**

The Cisco Extension Mobility user is logged in to a phone, but the user intercom line does not display.

**Possible Cause**

**Default Activated Device** is configured incorrectly.

**Solution**

- Check that the **Default Activated Device** is configured on the intercom directory number.
- Check that the **Default Activated Device** matches the device to which the user is logged in.

## Intercom Line Fails to Display on Phone

**Problem**

An intercom line has been configured and assigned to a phone but fails to display on the phone.

**Possible Cause**

Default Activated Device value is set to the intercom line of this device.

**Solution**

If the configuration has been done, reset the phone.

