



## CHAPTER 6

# Customizing Cisco IP Communicator

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This chapter describes how to customize phone ring sounds, background images, and the idle display at your site through Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager). Ring sounds play when Cisco IP Communicator receives a call. Background images appear on the phone screen. The idle display appears on the phone screen when the application has not been used for a designated period.

- [About Custom Phone Rings, page 6-1](#)
- [About Custom Background Images, page 6-3](#)
- [About Configuring the Idle Display, page 6-6](#)

## About Custom Phone Rings

Cisco IP Communicator software provides two default ring types: Chirp1 and Chirp2. Cisco Unified Communications Manager also provides a default set of phone ring sounds that are implemented in software as pulse code modulation (PCM) files. The PCM files, along with the RingList.xml file that describes the ring list options that are available at your site, exist in the TFTP directory on each Cisco Unified Communications Manager server.

You can customize the phone ring types that are available at your site by creating your own PCM files and editing the RingList.xml file.

### Related Topics

- [RingList.xml File Format Requirements, page 6-2](#)
- [PCM File Requirements for Custom Ring Types, page 6-2](#)
- [Configuring a Custom Phone Ring, page 6-3](#)

## RingList.xml File Format Requirements

The RingList.xml file defines an XML object that contains a list of phone ring types. Each ring type contains a pointer to the PCM file that is used for that ring type and the text that appears in Cisco IP Communicator (**Settings** button > **User Preferences** > **Rings**).

The CiscoIPPhoneRingList XML object uses this tag set to describe the information:

```
<CiscoIPPhoneRingList>
  <Ring>
    <DisplayName/>
    <FileName/>
  </Ring>
</CiscoIPPhoneRingList>
```

You must include the required DisplayName and FileName for each phone ring type. These characteristics apply to the definition names:

- DisplayName defines the name of the custom ring for the associated PCM file that displays in Cisco IP Communicator (**Settings** button > **User Preferences** > **Rings**).
- FileName specifies the name of the PCM file for the custom ring to associate with DisplayName.



### Note

The DisplayName and FileName fields must not exceed 25 characters.

This example shows a RingList.xml file that defines two phone ring types:

```
<CiscoIPPhoneRingList>
  <Ring>
    <DisplayName>Analog Synth 1</DisplayName>
    <FileName>Analog1.raw</FileName>
  </Ring>
  <Ring>
    <DisplayName>Analog Synth 2</DisplayName>
    <FileName>Analog2.raw</FileName>
  </Ring>
</CiscoIPPhoneRingList>
```

### Related Topics

- [PCM File Requirements for Custom Ring Types, page 6-2](#)
- [Configuring a Custom Phone Ring, page 6-3](#)

## PCM File Requirements for Custom Ring Types

The PCM files for the rings must meet these requirements for proper playback on Cisco IP Communicator:

- Raw PCM (no header)
- 8000 samples per second
- 8 bits per sample
- uLaw compression
- Maximum ring size—16080 samples
- Minimum ring size—240 samples

- Number of samples in the ring is evenly divisible by 240.
- Ring starts and ends at the zero crossing.
- To create PCM files for custom phone rings, you can use any standard audio editing packages that support these file format requirements.

**Related Topics**

- [RingList.xml File Format Requirements, page 6-2](#)
- [Configuring a Custom Phone Ring, page 6-3](#)

## Configuring a Custom Phone Ring

**Procedure**

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- Step 1** Create a PCM file for each custom ring (one ring per file). Ensure the PCM files comply with the format guidelines.
- Step 2** Place the new PCM files that you created as specified:
- For Cisco Unified Communications Manager Release 5.x and later: on the Cisco TFTP server for each Cisco Unified Communications Manager in your cluster. For details, see the Software Upgrades chapter in *Cisco IP Telephony Platform Administration Guide* at this URL:  
[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)
  - For Cisco Unified Communications Manager Release 4.x: in the C:\Program Files\Cisco\TFTPPath directory on the Cisco TFTP server for each Cisco Unified Communications Manager in your cluster.
- Step 3** Use a text editor to edit the RingList.xml file. Ensure that the file complies with the format guidelines.
- Step 4** Save your modifications, and close the RingList.xml file.
- Step 5** To cache the new RingList.xml file, stop and start the TFTP service through Cisco Unified Communications Manager Serviceability, or disable and re-enable the *Enable Caching of Constant and Bin Files at Startup* TFTP service parameter (located in the Advanced Service Parameters).
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**Related Topics**

- [RingList.xml File Format Requirements, page 6-2](#)
- [PCM File Requirements for Custom Ring Types, page 6-2](#)

## About Custom Background Images

You can provide users with a choice of background images for their Cisco IP Communicator phone screens. Users select the background image that appears on the phone screen from the **Settings** button > **User Preferences** > **Background Images**.

The image choices come from PNG images and an XML file (called List.xml) that are stored on the TFTP server used by the phone. By storing your own PNG files and editing the XML file on the TFTP server, you can designate the background images from which users can choose. In this way, you can provide custom images, such as your company logo.

You can customize the background images that are available at your site by creating your own PNG files and editing the List.xml file.

#### Related Topics

- [List.xml File Format Requirements, page 6-4](#)
- [PNG File Requirements for Custom Background Images, page 6-5](#)
- [Configuring a Background Image, page 6-5](#)

## List.xml File Format Requirements

The List.xml file defines an XML object that contains a list of background images.



#### Note

If you are manually creating the directory structure and the List.xml file, make sure that the directories and files can be accessed by the user\CCMSservice, which is used by the TFTP service.

The List.xml file can include up to 50 background images. The images are presented in the order that they appear in the Background Images menu. For each background image, the List.xml file contains ImageItem element, which includes these attributes:

- Image—Uniform resource identifier (URI) that specifies where the phone obtains the thumbnail image that appears on the Background Images menu.
- URL—URI that specifies where the phone obtains the full size image.

#### List.xml Example

This example shows a List.xml file that defines two images. The required Image and URL attributes must be included for each image. The TFTP URI in the example is the only supported method for linking to full size and thumbnail images. HTTP URL support is not provided.

```
<CiscoIPPhoneImageList>
<ImageItem Image="TFTP:Desktops/320x212x12/TN-Fountain.png"
URL="TFTP:Desktops/320x212x12/Fountain.png" />
<ImageItem Image="TFTP:Desktops/320x212x12/TN-FullMoon.png"
URL="TFTP:Desktops/320x212x12/FullMoon.png" />
</CiscoIPPhoneImageList>
```

Cisco IP Communicator software includes a default background image. This image is not defined in the List.xml file. Cisco IP Communicator displays the default image if you do not create custom images or if there is an error retrieving a custom image. The default image is always the first image that appears in the Background Images menu.

#### Related Topics.

- [PNG File Requirements for Custom Background Images, page 6-5](#)
- [Configuring a Background Image, page 6-5](#)

## PNG File Requirements for Custom Background Images

Each background image requires two PNG files:

- Full size image—Version that appears on the phone screen.
- Thumbnail image—Version that appears on the Background Images screen from which users can select an image. The thumbnail image must be 25 percent of the size of the full size image.

**Tip**

Many graphics programs provide a feature to resize a graphic. An easy way to create a thumbnail image is to first create and save the full size image, and then use the sizing feature in the graphics program to create a version of that image that is 25 percent of the original size. Save the thumbnail version by using a different name.

For proper display on Cisco IP Communicator, the PNG files for background images must meet these requirements:

- Full size image—320 pixels (width) X 212 pixels (height).
- Thumbnail image—80 pixels (width) X 53 pixels (height).
- Color palette—Includes up to 12-bit color (4096 colors). You can use more than 12-bit color, but Cisco IP Communicator reduces the color palette to 12-bit before displaying the image. For best results, reduce the color palette of an image to 12-bit when you create a PNG file.

**Tip**

If you are using a graphics program that supports a posterize feature for specifying the number of tonal levels per color channel, set the number of tonal levels per channel to 16 (16 red X 16 green X 16 blue = 4096 colors).

**Related Topics.**

- [List.xml File Format Requirements, page 6-4.](#)
- [Configuring a Background Image, page 6-5](#)

## Configuring a Background Image

**Procedure**

- Step 1** Create two PNG files for each image (a full size version and a thumbnail version). Ensure the PNG files comply with the format guideline.
- Step 2** Place the new PNG files that you created as specified:
  - For Cisco Unified Communications Manager Release 5.x and later: on the TFTP server for each Cisco Unified Communications Manager in the cluster. For details, see the Software Upgrades chapter in *Cisco IP Telephony Platform Administration Guide* at this URL:  
[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)
  - For Cisco Unified Communications Manager Release 4.x: in the C:\Program Files\Cisco\TFTPPath\Desktops\320x212x12 folder on the Cisco TFTP server for each Cisco Unified Communications Manager in your cluster.

**Tip**

We recommend that you also store backup copies of custom image files in another location. You can use these backup copies if the files in the customized files are overwritten when you upgrade Cisco Unified Communications Manager.

**Step 3** Use a text editor to edit the List.xml file. Ensure that the file complies with the format guidelines.

**Step 4** Save your modifications, and close the List.xml file.

**Note**

When you upgrade Cisco Unified Communications Manager, a default List.xml file replaces the List.xml file that you customized. After you customize the List.xml file, make a copy of the file, and store it in another location. After upgrading Cisco Unified Communications Manager, replace the default List.xml file with your stored copy.

**Step 5** To cache the new List.xml file, stop and start the TFTP service by using Cisco Unified Communications Manager Serviceability, or disable and re-enable the *Enable Caching of Constant and Bin Files at Startup* TFTP service parameter (located in the Advanced Service Parameters).

**Related Topics.**

- [List.xml File Format Requirements, page 6-4.](#)
- [PNG File Requirements for Custom Background Images, page 6-5](#)

## About Configuring the Idle Display

You can specify an idle display that appears on the phone screen. The idle display is an XML service that Cisco IP Communicator invokes when it is idle (not in use) for a designated period, and no feature menu is open. XML services that can be used as idle displays include company logos, product pictures, and stock quotes.

Configuring the idle display consists of these general steps:

1. Formatting an image.
2. Configuring Cisco Unified Communications Manager to display the image.

For details about creating and displaying the idle display, see the *Creating Idle URL Graphics on Cisco Unified IP Phone* at this URL:

<http://www.cisco.com/warp/public/788/AVVID/idle-url.html>

In addition, see the *Cisco Unified Communications Manager Administration Guide* or the *Bulk Administration Tool User Guide* at these URLs:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_user_guide_list.html)

- Specifying the URL of the idle display XML service:
  - For a single phone device—Idle field on the Phone Configuration window (**Device > Phone**)
  - For multiple devices simultaneously—URL Idle field on the Enterprise Parameters Configuration window (**System > Enterprise Parameters**), or the Idle field in the Bulk Administration Tool (BAT)

- Specifying the length of time that Cisco IP Communicator is not used before the idle display XML service is invoked:
  - For a single device—Idle Timer field on the Phone Configuration window (**Device > Phone**)
  - For multiple devices simultaneously—URL Idle Time field on the Enterprise Parameters Configuration window (**System > Enterprise Parameters**), or the Idle Timer field in the BAT

From Cisco IP Communicator, you can see settings for the idle display XML service URL and the length of time the application must be inactive before this service is invoked. To see these settings, click the **Settings** button and choose **Device Configuration**, and scroll to Idle URL and Idle URL Time.

**Related Topics.**

- [About Custom Phone Rings, page 6-1.](#)
- [About Custom Background Images, page 6-3](#)

