



Customizing the Cisco IP Phone

This chapter explains how you customize phone ring sounds, background images, and the idle display at your site. Ring sounds play when the phone receives a call. Background images appear on the phone's LCD screen. The idle display appears on the LCD screen when the phone has not been used for a designated period.

This chapter includes these topics:

- [Creating Custom Phone Rings, page 6-1](#)
- [Creating Custom Background Images, page 6-4](#)
- [Configuring the Idle Display, page 6-8](#)
- [Automatically Disabling the Cisco IP Phone Touchscreen, page 6-9](#)

Creating Custom Phone Rings

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

The following sections describe how you can customize the phone rings that are available at your site by creating PCM files and editing the RingList.xml file:

- [RingList.xml File Format Requirements, page 6-2](#)
- [PCM File Requirements for Custom Ring Types, page 6-3](#)
- [Configuring a Custom Phone Ring, page 6-4](#)

RingList.xml File Format Requirements

The RingList.xml file defines an XML object that contains a list of phone ring types. This file can include up to 50 ring types. Each ring type contains a pointer to the PCM file that is used for that ring type and the text that will appear on the Ring Type menu on a Cisco IP Phone for that ring. The C:\Program Files\Cisco\TFTPPath directory of the Cisco TFTP server for each Cisco CallManager contains this file.

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

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

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

- DisplayName defines the name of the custom ring for the associated PCM file that will display on the Ring Type menu of the Cisco IP Phone.
- 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>
```

PCM File Requirements for Custom Ring Types

The PCM files for the rings must meet the following requirements for proper playback on Cisco IP Phones:

- 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.

Configuring a Custom Phone Ring

To create custom phone rings for the Cisco IP Phone 7970 Series, follow these steps:

Procedure

- Step 1** Create a PCM file for each custom ring (one ring per file). Ensure the PCM files comply with the format guidelines that are listed in the [“PCM File Requirements for Custom Ring Types”](#) section on page 6-3.
 - Step 2** Place the new PCM files that you created in the C:\Program Files\Cisco\TFTPath directory on the Cisco TFTP server for each Cisco CallManager in your cluster.
 - Step 3** Use a text editor to edit the RingList.xml file. See the [“RingList.xml File Format Requirements”](#) section on page 6-2 for information about how to format this file and for a sample RingList.xml file.
 - 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 by using Cisco CallManager 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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Creating Custom Background Images

You can provide users with a choice of background images for the LCD screen on their phones. Users can select a background image by choosing **Settings > User Preferences > Background Images** on the phone.

The image choices that users see 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.

The following sections describe how you can customize the background images that are available at your site by creating your own PNG files and editing the List.xml file:

- [List.xml File Format Requirements, page 6-5.](#)
- [PNG File Requirements for Custom Background Images, page 6-6.](#)
- [Configuring a Background Image, page 6-7](#)

List.xml File Format Requirements

The List.xml file defines an XML object that contains a list of background images. The List.xml file is stored in the following folder on the TFTP server:

C:\Program Files\Cisco\TFTPPath\Desktops\320x212x12



Tip

If you are manually creating the directory structure and the List.xml file, you must ensure 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 in the order that they appear in the Background Images menu on the phone. For each image, the List.xml file contains one element type, called ImageItem. The ImageItem element includes these two attributes:

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

The following 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 that is shown in the example is the only supported method for linking to full size and thumbnail images. HTTP URL support is not provided.

List.xml Example

```
<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>
```

The Cisco IP Phone firmware includes a default background image. This image is not defined in the List.xml file. The default image is always the first image that appears in the Background Images menu on the phone.

PNG File Requirements for Custom Background Images

Each background image requires two PNG files:

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

**Tip**

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

The PNG files for background images must meet the following requirements for proper display on the Cisco IP Phone:

- 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 the phone will reduce 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).

Configuring a Background Image

To create custom background images for the Cisco IP Phone, follow these steps:

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 guidelines that are listed in the [“PNG File Requirements for Custom Background Images”](#) section on page 6-6.

Step 2 Place the new PNG files that you created in the following folder on the TFTP server for each Cisco CallManager in the cluster:

C:\Program Files\Cisco\TFTPPath\Desktops\320x212x12

**Note**

Cisco recommends that you also store backup copies of custom image files in another location. You can use these backup copies if the customized files are overwritten when you upgrade Cisco CallManager.

Step 3 Use a text editor to edit the List.xml file. See the [“List.xml File Format Requirements”](#) section on page 6-5 for the location of this file, formatting requirements, and a sample file.

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

**Note**

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

Configuring the Idle Display

You can specify an idle display that appears on the phone's LCD screen. The idle display is an XML service that the phone invokes when the phone has been 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 for display on the phone.
2. Configure Cisco CallManager to display the image on the phone.

For detailed instructions about creating and displaying the idle display, refer to *Creating Idle URL Graphics on Cisco IP Phone* at this URL:

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

In addition, you can refer to *Cisco CallManager Administration Guide* or to *Bulk Administration Tool User Guide for Cisco CallManager* for the following information:

- Specifying the URL of the idle display XML service:
 - For a single phone—Idle field on the Cisco CallManager Phone Configuration page
 - For multiple phones simultaneously—URL Idle field on the Cisco CallManager Enterprise Parameters Configuration page, or the Idle field in the Bulk Administration Tool (BAT)
- Specifying the length of time that the phone is not used before the idle display XML service is invoked:
 - For a single phone—Idle Timer field on the Cisco CallManager Phone Configuration page
 - For multiple phones simultaneously—URL Idle Time field on the Cisco CallManager Enterprise Parameters Configuration page, or the Idle Timer field in the Bulk Administration Tool (BAT)

From a phone, you can see settings for the idle display XML service URL and the length of time that the phone is not used before this service is invoked. To see these settings, choose **Settings > Device Configuration** and scroll to the Idle URL and the Idle URL Time parameters.

Automatically Disabling the Cisco IP Phone Touchscreen

To conserve power and ensure the longevity of the LCD screen on the phone, you can set the LCD to turn off when it is not needed.

You can configure settings in Cisco CallManager Administration to turn off the display at a designated time on some days and all day on other days. For example, you may choose to turn off the display after business hours on weekdays and all day on Saturdays and Sundays.

When the display is off, the LCD screen is dark and disabled, and the **Display** button lights. You can take any of these actions to turn on the display any time it is off:

- Press any button on the phone.

If you press a button other than the **Display** button, the phone will take the action designated by that button in addition to turning on the display.

- Touch the touchscreen.
- Lift the handset.

When you turn the display on, it remains on until the phone has remained idle for a designated length of time, then it turns off automatically.



Note

You can use the **Display** button to temporarily disable the touchscreen for cleaning. See the [“Cleaning the Cisco IP Phone”](#) section on page 9-18 for more information.

[Table 6-1](#) explains the Cisco CallManager Administration fields that control when the display turns on and off. You configure these fields in Cisco CallManager Administration in the Product Specific Configuration page. (You access this page by choosing **Device > Phone** from Cisco CallManager Administration.)

You can view the display settings for a phone from the Power Save Configuration menu on the phone. For more information, see the [“Power Save Configuration Menu”](#) section on page 4-18.

Table 6-1 *Display On and Off Configuration Fields*

Field	Description
Days Display Not Active	<p>Days that the display does not turn on automatically at the time specified in the Display On Time field.</p> <p>Choose the day or days from the drop-down list. To choose more than one day, Ctrl-click each day that you want.</p>
Display On Time	<p>Time each day that the display turns on automatically (except on the days specified in the Days Display Not Active field).</p> <p>Enter the time in this field in 24 hour format, where 0:00 is midnight.</p> <p>For example, to automatically turn the display on at 7:00 a.m., (0700), enter 7:00. To turn the display on at 2:00 p.m. (1400), enter 14:00.</p> <p>If this field is blank, the display will automatically turn on at 0:00.</p>

Table 6-1 Display On and Off Configuration Fields (continued)

Field	Description
Display On Duration	<p>Length of time that the display remains on after turning on at the time specified in the Display On Time field.</p> <p>Enter the value in this field in the format <i>hours:minutes</i>.</p> <p>For example, to keep the display on for 4 hours and 30 minutes after it turns on automatically, enter 4:30.</p> <p>If this field is blank, the phone will turn off at the end of the day (0:00).</p> <p>Note If Display On Time is 0:00 and the display on duration is blank (or 24:00), the display will remain on continuously.</p>
Display Idle Timeout	<p>Length of time that the phone is idle before the display turns off. Applies only when the display was off as scheduled and was turned on by an end-user (by pressing a button on the phone, touching the touchscreen, or lifting the handset).</p> <p>Enter the value in this field in the format <i>hours:minutes</i>.</p> <p>For example, to turn the display off when the phone is idle for 1 hour and 30 minutes after an end-user turns the display on, enter 1:30.</p> <p>The default value is 0:30.</p>

■ Automatically Disabling the Cisco IP Phone Touchscreen