



# Custom Phone Rings and Backgrounds

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## Custom Phone Rings Overview

Custom Phone Rings allows you to create customized phone rings and upload the customized files to the Cisco Unified Communications Manager TFTP server where they can be accessed by Cisco Unified IP Phones.

Cisco Unified IP Phones ship with default ring types that are implemented in hardware: Chirp1 and Chirp2. In addition, Cisco Unified Communications Manager provides the capability of uploading the following files to phones:

### PCM Files

Cisco Unified Communications Manager provides a default set of phone ring sounds that are implemented in software as pulse code modulation (PCM) audio files. Each PCM file specifies a single ring type.

### Ringlist.xml File

The Ringlist.xml file describes the list of ring options that are available for phones.

You can upload customized PCM audio files, such as custom ring tones and call back tones, as well as the modified Ringlist.xml file to the TFTP directory in Cisco Unified Communications Manager.

## Custom Phone Rings Prerequisites

The following prerequisites apply to Custom Phone Rings:

- In order to upload your custom phone rings, the Cisco TFTP service must be running.
- Any PCM files that you want to upload must meet a set of file requirements in order to be compatible with Cisco Unified IP Phones. For details, review the topic [PCM File Format Requirements, on page 3](#).
- The Ringlist.xml file must meet a set of formatting guidelines. For details, review the topic [Ringlist.xml File Format Requirements, on page 3](#).

# Custom Phone Rings Configuration Task Flow

## Before you begin

- Review [Custom Phone Rings Prerequisites, on page 1](#)

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<a href="#">Prepare Custom Phone Rings for Upload, on page 2</a>	Create your customized PCM and Ringlist.xml files.
<b>Step 2</b>	<a href="#">Upload Custom Phone Rings to TFTP Server, on page 2</a>	Upload customized files to the Cisco Unified Communications Manager TFTP server.
<b>Step 3</b>	<a href="#">Restart TFTP Service, on page 3</a>	After the upload completes, restart the Cisco TFTP service.

## Prepare Custom Phone Rings for Upload

### Procedure

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- Step 1** Use the `file get tftp <tftp path>` CLI command to download the existing Ringlist.xml file, in addition to any PCM files that you want to modify.
- Step 2** Create a PCM file for each ring type that you want to upload. For guidelines on PCM file compatibility with Cisco Unified Communications Manager, see [PCM File Format Requirements, on page 3](#).
- Step 3** Use an ASCII editor to update the Ringlist.xml file with your new phone rings. For details on Ringlist.xml file formatting requirements, see [Ringlist.xml File Format Requirements, on page 3](#).
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## Upload Custom Phone Rings to TFTP Server

### Before you begin

[Prepare Custom Phone Rings for Upload, on page 2](#)

### Procedure

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- Step 1** From Cisco Unified OS Administration, choose **Software Upgrades > TFTP > File Management**.
- Step 2** Click **Upload File**.
- Step 3** Click **Browse** and select the Ringlist.xml file, as well as any PCM files that you want to upload.

**Step 4** Click **Upload File**.

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## Restart TFTP Service

### Before you begin

[Upload Custom Phone Rings to TFTP Server, on page 2](#)

### Procedure

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- Step 1** Log in to Cisco Unified Serviceability and choose **Tools > Control Center - Feature Services**.
- Step 2** From the **Server** drop-down list, choose the server on which the Cisco TFTP service is running.
- Step 3** Click the radio button that corresponds to the **Cisco TFTP** service.
- Step 4** Click **Restart**.
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## PCM File Format Requirements

PCM files for phone rings must meet a set of requirements for proper playback on Cisco Unified IP Phones. When creating or modifying your PCM files, you can use any standard audio editing packages that support the following file format requirements:

- Raw PCM
- 8000 samples per second
- 8 bits per sample
- mu-law compression
- Maximum ring size: 16080 samples
- Number of samples in the ring must be evenly divisible by 240
- Ring starts and ends at the zero crossing

## 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 will display on the Ring Type menu on a Cisco Unified IP Phone for that ring.

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:

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

- `FileName` specifies the name of the PCM file for the custom ring to associate with `DisplayName`.



**Tip** The `DisplayName` and `FileName` fields must not exceed 25 characters.

The following 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>
```



**Tip** You must include the required `DisplayName` and `FileName` for each phone ring type. The `Ringlist.xml` file can include up to 50 ring types.

## Custom Backgrounds

You can also use the TFTP server to upload new custom background images to the phones in your network. Phone users can select the images that you upload as their phone backgrounds. You can configure your system so that phone users can select from an assortment of images or you can assign a specific background image for all phone.

If you want your phone users to be able to customize their phone backgrounds, then you must prepare and upload the following files to the TFTP server whenever you upload new images:

- Full-size background image—Refer to your phone documentation for image specifications, including the image size (in pixels) and color-type, for your phone model.
- A thumbnail image—This is only required if you want your phone users to be able to choose their own background image. Refer to your phone documentation for the thumbnail image specifications
- An edited `List.xml` file—This file contains a listing of the background images from which phone users can select. You must add your new images to this file.

If you want to assign a specific image for all phones then you need to upload the main background image only. In addition, you also must update the Common Phone Profile to direct the phones to use the image that you assign.

## Custom Backgrounds Configuration Task Flow

Complete these tasks to configure and upload customized background images for the phones in your deployment. You can configure the system so that phone users can select from an assortment of images, or you can assign a specific background image that displays on all phones.

**Procedure**

	<b>Command or Action</b>	<b>Purpose</b>
<b>Step 1</b>	<a href="#">Create Phone Background Images, on page 5</a>	<p>Create your full-size background image and corresponding thumbnail image (if required). Refer to your phone documentation for image specifications, including file type, image size (in pixels) and color-type.</p> <p><b>Note</b> The thumbnail is not required if you are assigning a specific background image.</p>
<b>Step 2</b>	<a href="#">Edit the List.xml file, on page 6</a>	<p>Update the <code>List.xml</code> file from the appropriate TFTP directory with your new images. This is required so that phone users see the new images in their list of phone background options.</p> <p><b>Note</b> This procedure is required only if you are giving your users the option to choose their own background. If you are assigning a specific background image then there is no need to edit this file.</p>
<b>Step 3</b>	<a href="#">Upload Backgrounds to TFTP Server, on page 7</a>	Upload your files to the TFTP server.
<b>Step 4</b>	<a href="#">Restart the TFTP Server, on page 7</a>	Restart the Cisco TFTP service in order to push the images to your phones.
<b>Step 5</b>	<a href="#">Assign Phone Background for Phone Users, on page 7</a>	Optional. By default, Cisco Unified Communications Manager gives phone users the option to select their own phone background image. However, you can use the Common Phone Profile to assign a specific background image for all phones that use this Common Phone Profile.

## Create Phone Background Images

Refer to your phone documentation for background image specifications and thumbnail image specifications. This includes the image sizes (in pixels), file type, and the appropriate destination TFTP directory for that phone model (the TFTP directory is based on the image specifications).

- If you want phone users to have the option to use, or not use, the image that you upload, you must prepare both a full-size image and a thumbnail image according to the specifications for that particular phone model.
- If you want to assign the image to specific phones, you need the full-size image only.

**What to do next**

If you want phone users to be able to choose their own background image, [Edit the List.xml file, on page 6](#).

If you want to assign a specific background image, you don't need to update the List.xml file. Proceed to [Upload Backgrounds to TFTP Server, on page 7](#)

**Edit the List.xml file**

If you want phone users to be able to choose their background images, use this procedure to add any new background images that you upload to the existing List.xml file. Each TFTP image directory contains a List.xml file that gets used by the phones that use that TFTP directory. This file points to the specific background and thumbnail image for each background option and can include up to 50 background images. The images are listed using the order in which they appear on the phone. For each image, the file contains an <ImageItem> element that 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 of a phone.
- **URL:** URI that specifies where the phone obtains the full size image.

**Example:**

The following example (for a Cisco Unified IP Phone 7971G-GE and 7970G) 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 displays in the example is the only supported method for linking to full size and thumbnail images as 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>
```

**Procedure**

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- Step 1** Log in to the Command Line Interface
- Step 2** Run the `file get tftp <filename>` CLI command where <filename> represents the file and filepath of the List.xml file for the appropriate TFTP directory.
- Note** Make sure that you download the List.xml file from the appropriate TFTP directory as each image directory has its own file. Refer to your phone documentation for information on the appropriate TFTP directory for that phone model as the directory is based on the image specifications.
- Step 3** Edit the xml file with a new <ImageItem> element for each new background option that you want to add.
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## Upload Backgrounds to TFTP Server

Use this procedure to upload new phone background files to the TFTP server.

- If you want your phone users to be able to choose their own background image, then you must upload your full-size background image, a thumbnail image, and the updated `List.xml` file.
- If you are assigning a specific background image, you need to upload the full-size background image only.

### Procedure

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- Step 1** From Cisco Unified OS Administration, choose **Software Upgrades > TFTP File Management**
- Step 2** Click **Upload File** and do the following:
- a) Click **Choose File** and select the background file that you want to upload.
  - b) In the **Directory** field, enter the appropriate TFTP directory for that phone model. The TFTP directory corresponds to the image size and color type. Refer to your phone documentation for images specification.
  - c) Click **Upload File**
  - d) Repeat these steps to upload both the thumbnail image and `list.xml` files as well. These files should be loaded to the same TFTP directory as the main background image.
- Step 3** Click **Close**.
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## Restart the TFTP Server

After you have uploaded your custom files to the TFTP directory, restart the Cisco TFTP server to push the files to the phones.

### Procedure

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- Step 1** Log in to Cisco Unified Serviceability and choose **Tools > Control Center - Feature Services**.
- Step 2** From the **Server** drop-down list, choose the server on which the Cisco TFTP service is running.
- Step 3** Click the radio button that corresponds to the **Cisco TFTP** service.
- Step 4** Click **Restart**.
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## Assign Phone Background for Phone Users

By default, Cisco Unified Communications Manager allows phone users to customize their own phone background image. However, you can use the Common Phone Profile setting to assign a specific background image for all phones that use this Common Phone Profile.

## Procedure

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- Step 1** From Cisco Unified CM Administration, choose **Device > Device Settings > Common Phone Profile**.
- Step 2** Do one of the following:
- Click **Find** and select the Common Phone Profile that your phones use.
  - Click **Add New** to create a new Common Phone Profile.
- Step 3** If you want users to be able to choose their background image, make sure that the **Enable End User Access to Phone Background Image Setting** check box is checked (this is the default setting).
- Step 4** If you want to assign a specific background image for phones that use this profile:
- Uncheck the **Enable End User Access to Phone Background Image Setting** check box.
  - In the **Background Image** text box, enter the filename of the image file that you want to assign. Also, check the **Override Enterprise Settings** check box that corresponds to this text box.
- Step 5** Complete any remaining fields in the **Common Phone Profile** window. For help with the fields and their settings, refer to the online help.
- Step 6** Click **Save**.  
If you have assigned a specific background image, all phones that use this Common Phone Profile will use the image that you specify.
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## What to do next

If you have created a new Common Phone Profile, reconfigure your phones so that they use this profile. For details on how to configure phones in Cisco Unified Communications Manager, see the "Configure Endpoint Devices" section of the *System Configuration Guide for Cisco Unified Communications Manager*.



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**Tip** If you have a large number of phones to assign, use the Bulk Administration Tool to assign a Common Phone Profile to a large number of phones in a single operation. For details, see the *Bulk Administration Guide for Cisco Unified Communications Manager*.

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**Note** After you complete your configuration, reset your phones.

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