



## Creating Custom Cisco IP Phone Rings

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Cisco IP Phones ship 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 available at your site are installed in the TFTP directory on each Cisco CallManager server.

This appendix describes how you can customize the phone ring types available at your site by creating your own PCM files and editing the RingList.xml file. The following topics are covered:

- Creating a Custom Phone Ring, page C-2
- RingList.xml File Format, page C-2
- PCM File Requirements for Custom Ring Types, page C-3



**Note**

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The procedure described here only applies to creating custom phone rings for the Cisco IP Phone 7940 and 7960 models.

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# Creating a Custom Phone Ring

Use the following procedure to create a custom phone ring.

## Procedure

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- Step 1** Create a PCM file for each custom ring (one ring per file). The PCM files must comply with the format guidelines listed in the “PCM File Requirements for Custom Ring Types” section on page C-3.
  - Step 2** Use an ASCII editor to edit the RingList.xml file. Refer to the “RingList.xml File Format” section on page C-2 for information about how to format this file, along with a sample RingList.xml file.
  - Step 3** Save your modifications and close the RingList.xml file.
  - Step 4** Place the new PCM files you created in the C:\Program Files\Cisco\TFTPPath directory on the Cisco TFTP server for each Cisco CallManager in your cluster.
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## RingList.xml File Format

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 used for that ring type and the text that will be displayed on the Ring Type menu on a Cisco IP Phone for that ring. This file is located in the C:\Program Files\Cisco\TFTPPath directory of the Cisco TFTP server for each Cisco CallManager.

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

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

In the above definition:

- `Ring` contains two fields, `DisplayName` and `FileName`, that are required for each phone ring type. Up to 50 rings can be listed.
- `DisplayName` defines the name of the custom ring for the associated PCM file that will be displayed 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`.
- The `DisplayName` and `FileName` fields must not exceed 25 characters.

A sample `RingList.xml` file that defines two phone ring types is shown below:

```
<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 must be evenly divisible by 240
- Ring should start and end at the zero crossing

You can use any standard audio editing packages that supports these file format requirements to create PCM files for custom phone rings.

