



## Custom 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 reside 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. This section covers the following topics:

- [Creating a Custom Phone Ring, page 31-1](#)
- [RingList.xml File Format, page 31-2](#)
- [PCM File Requirements for Custom Ring Types, page 31-3](#)

## Creating a Custom Phone Ring

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

### 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 listed in the [“PCM File Requirements for Custom Ring Types”](#) section on page 31-3.
  - Step 2** Use an ASCII editor to edit the RingList.xml file. See the [“RingList.xml File Format”](#) section on page 31-2 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 display 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:

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

The following sample 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>
```

DisplayName and FileName are required for each phone ring type. The RingList.xml file can include up to 50 ring types.

## 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.

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

