Configuring Ring Tones

Last Updated: April 29, 2011

This chapter describes ring tones features in Cisco Unified Communications Manager Express (Cisco Unified CME).

Finding Feature Information in This Module

Your Cisco Unified CME version may not support all of the features documented in this module. For a list of the versions in which each feature is supported, see the .

Contents

Information About Ring Tones

To enable distinctive ringing or customized ring tones, you should understand the following concepts:

Distinctive Ringing

Distinctive ring is used to identify internal and external incoming calls. An internal calls is defined as a call originating from any Cisco Unified IP phone that is registered in Cisco Unified CME or is routed through the local FXS port.

In Cisco CME 3.4 and earlier versions, the standard ring pattern is generated for all calls to local SCCP endpoints. In Cisco Unified CME 4.0, the following distinctive ring features are supported for SCCP endpoints:

- Specify one of three ring patterns to be used for *all* types of incoming calls to a particular directory number, on all phones on which the directory number appears. If a phone is already in use, an incoming call is presented as a call-waiting call and uses a distinctive call-waiting beep.

- Specify whether the distinctive ring is used only if the incoming called number matches the primary or secondary number defined for the ephone-dn. If no secondary number is defined for the ephone-dn, the secondary ring option has no effect.

- Associate a feature ring pattern with a specific button on a phone so that different phones that share the same directory number can use a different ring style.

For local SIP endpoints, the type of ring sound requested is signaled to the phone using an alert-info signal. If distinctive ringing is enabled, Cisco Unified CME generates the alert-info for incoming calls from any phone that is not registered in Cisco Unified CME, to the local endpoint. Alert-info from an incoming leg can be relayed to an outgoing leg with the internally generated alert-info taking precedence.

Cisco Unified IP phones use the standard Telcordia Technologies distinctive ring types.

Customized Ring Tones

Cisco Unified IP Phones have two default ring types: Chirp1 and Chirp2. Cisco Unified CME also supports customized ring tones using pulse code modulation (PCM) files.

An XML file called RingList.xml specifies the ring tone options available for the default ring on an IP phone registered to Cisco Unified CME. An XML file called DistinctiveRingList.xml specifies the ring tones available on each individual line appearance on an IP phone registered to Cisco Unified CME.

On-Hold Indicator

On-hold indicator is an optional feature that generates a ring burst on idle IP phones that have placed a call on hold. An option is available to generate call-waiting beeps for occupied phones that have placed calls on hold. This feature is disabled by default. For configuration information, see the "SCCP: Enabling On-Hold Indicator" section on page 1310.

LED color display for hold state, also known as I-Hold, is supported in Cisco Unified CME 4.0(2) and later versions. The I-Hold feature provides a visual indicator for distinguishing a local hold from a remote hold on shared lines on supported phones, such as the Cisco Unified IP Phone 7931G. This feature requires no additional configuration.

How to Configure Ring Tones

This section contains the following tasks:

SCCP: Enabling Distinctive Ringing

To set the ring pattern for all incoming calls to a directory number, perform the following steps.

Prerequisites

Cisco Unified CME 4.0 or a later version.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag* [**dual-line**]
4. **number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]]
5. **ring** {**external** | **internal** | **feature**} [**primary** | **secondary**]
6. **end**

DETAILED STEPS

	Command or Action	Purpose

Step 1	`enable`
	
	Example:
	`Router> enable`
		Enables privileged EXEC mode.
		
		- Enter your password if prompted.

Step 2	`configure terminal`
	
	Example:
	`Router# configure terminal`
		Enters global configuration mode.

Step 3	`ephone-dn` *dn-tag* [`dual-line`] **Example:** `Router(config)# ephone-dn 29`	Enters ephone-dn configuration mode, creates an ephone-dn, and optionally assigns it dual-line status.

	Command or Action	Purpose
Step 4	**number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]] **Example:** Router(config-ephone-dn)# number 2333	Configures a valid extension number for this ephone-dn.
Step 5	**ring** {**external** | **internal** | **feature**} [**primary** | **secondary**] **Example:** Router(config-ephone-dn)# ring internal	Designates which ring pattern to be used for all types of incoming calls to this directory number, on all phones on which the directory number appears.
Step 6	**end** **Example:** Router(config-ephone-dn)# end	Returns to privileged EXEC mode.

SCCP: Enabling Customized Ring Tones

To create a customized ring tone, perform the following steps.

Prerequisites

Cisco Unified CME 4.0 or a later version.

SUMMARY STEPS

1. Create PCM file.
2. Edit RingList.xml and DistinctiveRingList.xml.
3. Copy PCM and XML files to system Flash.
4. **tftp-server**
5. Reboot phones.

DETAILED STEPS

Step 1 Create a PCM file for each customized ring tone (one ring per file). The PCM files must comply with the following format guidelines.

- Raw PCM (no header)
- 8000 samples per second
- 8 bits per sample
- μLaw 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

Use an audio editing package that supports these file format requirements to create PCM files for customized phone rings.

Sample ring files are in the ringtone.tar file at http://www.cisco.com/cgi-bin/tablebuild.pl/ip-iostsp

Step 2 Edit the RingList.xml and DistinctiveRingList.xml files using a text editor.

The RingList.xml and DistinctiveRingList.xml files contain a list of phone ring types. Each file shows the PCM file used for each ring type and the text that is displayed on the Ring Type menu on a Cisco Unified IP Phone for each ring.

Sample XML files are in the ringtone.tar file at http://www.cisco.com/cgi-bin/tablebuild.pl/ip-iostsp

The RingList.xml and DistinctiveRingList.xml files use the following format to specify customized rings:

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

The XML ring files use the following tag definitions:

- Ring files contain two fields, DisplayName and FileName, which are required for each phone ring type. Up to 50 rings can be listed.
- DisplayName defines the name of the customized ring for the associated PCM file that will be displayed on the Ring Type menu of the Cisco Unified IP Phone.
- FileName specifies the name of the PCM file for the customized ring to associate with DisplayName.
- The DisplayName and FileName fields can not exceed 25 characters.

The following sample RingList.xml file defines two phone ring types:

```
<CiscoIPPhoneRingList>
<Ring>
  <DisplayName>Piano1</DisplayName>
  <FileName>Piano1.raw</FileName>
  </Ring>
<Ring>
  <DisplayName>Chime</DisplayName>
  <FileName>Chime.raw</FileName>
  </Ring>
</CiscoIPPhoneRingList>
```

Step 3 Copy the PCM and XML files to system Flash on the Cisco Unified CME router. For example:

```
copy tftp://192.168.1.1/RingList.xml flash:
copy tftp://192.168.1.1/DistinctiveRingList.xml flash:
copy tftp://192.168.1.1/Piano1.raw flash:
copy tftp://192.168.1.1/Chime.raw flash:
```

Step 4 Use the **tftp-server** command to enable access to the files. For example:

```
tftp-server flash:RingList.xml
tftp-server flash:DistinctiveRingList.xml
tftp-server flash:Piano1.raw
tftp-server flash:Chime.raw
```

Step 5   Reboot the IP phones. After reboot, the IP phones download the XML and ring tone files. Select the customized ring by pressing the Settings button followed by the Ring Type menu option on a phone.

SCCP: Enabling On-Hold Indicator

The Call Hold feature is available by default. To define an audible indicator as a reminder that a call is waiting on hold, perform the following steps.

SUMMARY STEPS

1. **enable**

2. **configure terminal**

3. **ephone-dn** *dn-tag* [**dual-line**]

4. **hold-alert** *timeout* {**idle** | **originator** | **shared** | **shared-idle**} [**recurrence** *recurrence-timeout*] [**ring-silent-dn**]

5. **end**

DETAILED STEPS

	Command or Action	Purpose

Step 1	`enable`
	
	Example:
	`Router> enable`
		Enables privileged EXEC mode.
		
		• Enter your password if prompted.

Step 2	`configure terminal`
	
	Example:
	`Router# configure terminal`
		Enters global configuration mode.

Step 3	`ephone-dn` *dn-tag* [`dual-line`] **Example:** `Router(config)# ephone-dn 20`	Enters ephone-dn configuration mode, creates an ephone-dn, and optionally assigns it dual-line status.
Step 4	`hold-alert` *timeout* {`idle` | `originator` | `shared` | `shared-idle`} [`recurrence` *recurrence-timeout*] [`ring-silent-dn`] **Example:** `Router(config-ephone-dn)# hold-alert 15 idle recurrence 3`	Sets audible alert notification on the Cisco Unified IP phone for alerting the user about on-hold calls. **Note** From the perspective of the originator of the call on hold, the **originator** and **shared** keywords provide the same functionality.

Step 5	`end`
	
	Example:
	`Router(config-ephone-dn)# end`
		Returns to privileged EXEC mode.

SIP: Enabling Distinctive Ringing

To set the ring pattern for distinguishing between external and internal incoming calls, perform the following steps.

Prerequisites

Cisco Unified CME 3.4 or a later version.

Restrictions

bellcore-dr1 to bellcore-dr5 are the only Telcordia options that are supported for SIP phones.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice register global**
4. **external-ring** {**bellcore-dr1** | **bellcore-dr2** | **bellcore-dr3** | **bellcore-dr4** | **bellcore-dr5**}
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** Router> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Router# configure terminal	Enters global configuration mode.
Step 3	**voice register global** **Example:** Router(config)# voice register global	Enters voice register global configuration mode to set parameters for all supported SIP phones in Cisco Unified CME.

	Command or Action	Purpose
Step 4	`external-ring {bellcore-dr1	bellcore-dr2	bellcore-dr3	bellcore-dr4	bellcore-dr5}`  **Example:** `Router(config-register-global)# external-ring bellcore-dr3`	Specifies the type of audible ring sound to be used for external calls • Default—Internal ring sound is used for all incoming calls.

Step 5	`end`
	
	Example:
	`Router(config-register-global)# end`
		Exits configuration mode and enters privileged EXEC mode.

Configuration Examples for Ring Tones

This section contains the following examples:

Distinctive Ringing for Internal Calls: Example

The following example sets distinctive ringing for internal calls on extension 2333.

```
ephone-dn 34
 number 2333
 ring internal
```

On-Hold Indicator: Example

In the following example, extension 2555 is configured to not forward local calls that are internal to the Cisco Unified CME system. Extension 2222 dials extension 2555. If 2555 is busy, the caller hears a busy tone. If 2555 does not answer, the caller hears ringback. The internal call is not forwarded.

```
ephone-dn 25
 number 2555
 no forward local-calls
 call-forward busy 2244
 call-forward noan 2244 timeout 45
```

Additional References

The following sections provide references related to Cisco Unified CME features.

Related Documents

Related Topic	Document Title
Cisco Unified CME configuration	• *Cisco Unified CME Command Reference* • Cisco Unified CME Documentation Roadmap
Cisco IOS commands	• *Cisco IOS Voice Command Reference* • Cisco IOS Software Releases 12.4T Command References
Cisco IOS configuration	• *Cisco IOS Voice Configuration Library* • Cisco IOS Software Releases 12.4T Configuration Guides
Phone documentation for Cisco Unified CME	• User Documentation for Cisco Unified IP Phones

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/techsupport

Feature Information for Ring Tones

Table 77 lists the features in this module and enhancements to the features by version.

To determine the correct Cisco IOS release to support a specific Cisco Unified CME version, see the *Cisco Unified CME and Cisco IOS Software Version Compatibility Matrix* at http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/requirements/guide/33matrix.htm.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Note Table 77 lists the Cisco Unified CME version that introduced support for a given feature. Unless noted otherwise, subsequent versions of Cisco Unified CME software also support that feature.

Table 77   Feature Information for Ring Tones

Feature Name	Cisco Unified CME Version	Feature Information
Distinctive Ringing	4.0	Supports ring tones choices for all incoming calls to an individual directory number, for all SCCP phones on which the directory number appears.
	3.4	Generate the alert-info for incoming calls from any phone that is not registered in Cisco Unified CME, to local SIP endpoints.
Customized Ring Tones	4.0	Customized Ring Tones feature was introduced.
On-Hold Indictor	4.0(2)	Controls LED color display for hold state to provide visual indicator for distinguishing a local hold from a remote hold on shared lines on supported phones, such as the Cisco Unified IP Phone 7931G.
	2.0	Audible on-hold indicator was introduced.
	1.0	Call Hold was introduced.