



Setting Up Cisco Unified IP Phones

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This chapter describes how to set up the displays and features that callers will see and use on Cisco Unified IP Phones during Cisco Unified Communications Manager fallback.

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Information About Setting Up Cisco Unified IP Phones

Cisco Unified IP Phone configuration is limited for Cisco Unified SRST because IP phones retain nearly all Cisco Unified Communications Manager settings during Cisco Unified Communications Manager fallback. You can configure the date format, time format, language, and system messages that appear on Cisco Unified IP Phones during Cisco Unified Communications Manager fallback. All four of these settings have defaults, and the available language options depend on the IP phones and Cisco Unified Communications Manager version in use. Also available for configuration is a secondary dial tone, which can be generated when a phone user dials a predefined PSTN access prefix and can be terminated when additional digits are dialed. Dual-line phone configuration is required for dual-line phone operation during Cisco Unified Communications Manager fallback.

How to Set Up Cisco Unified IP Phones

This section contains the following tasks:

- [Configuring IP Phone Clock, Date, and Time Formats, page 66](#) (Optional)
- [Configuring IP Phone Language Display, page 67](#) (Optional)
- [Configuring Customized System Messages for Cisco Unified IP Phones, page 68](#) (Optional)
- [Configuring a Secondary Dial Tone, page 70](#) (Optional)
- [Configuring Dual-Line Phones, page 70](#) (Required Under Certain Conditions)

- [Configuring Eight Lines Per Button \(Octo-Line\), page 73](#) (Optional)

Configuring IP Phone Clock, Date, and Time Formats

The Cisco Unified IP Phone 7970G and Cisco Unified IP Phone 7971G-GE IP phones obtain the correct timezone from Cisco Unified Communications Manager. They also receive the Coordinated Universal Time (UTC) time from the SRST router during SRST registration. When in SRST mode, the phones take the timezone and the UTC time, and apply a timezone offset to produce the correct time display.

Cisco IP Phone 7960 IP phones and other similar SCCP phones such as the Cisco IP Phone 7940, get their display clock information from the local time of the SRST router during SRST registration. If the Cisco Unified SRST router is configured to use the Network Time Protocol (NTP) to automatically sync the Cisco Unified SRST router time from an NTP time server, only UTC time is delivered to the router. This is because the NTP server could be physically located anywhere in the world, in any timezone. As it is important to display the correct local time, use the **clock timezone** command to adjust or offset the Cisco Unified SRST router time.

The date and time formats that appear on the displays of all Cisco Unified IP Phones in Cisco Unified Communications Manager fallback mode are selected using the **date-format** and **time-format** commands as configured below:

SUMMARY STEPS

1. **clock timezone** *zone hours-offset* [*minutes-offset*]
2. **call-manager-fallback**
3. **date-format** {*mm-dd-yy* | *dd-mm-yy* | *yy-dd-mm* | *yy-mm-dd*}
4. **time-format** {*12* | *24*}
5. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<pre>clock timezone zone hours-offset [minutes-offset]</pre> <p>Example: Router(config)# clock timezone PST -8</p>	<p>Sets the time zone for display purposes.</p> <ul style="list-style-type: none"> • <i>zone</i>: Name of the time zone to be displayed when standard time is in effect. The length of the zone argument is limited to 7 characters. • <i>hours-offset</i>: The number of hour difference from Coordinated Universal Time (UTC). • <i>minutes-offset</i> (Optional). Minutes difference from UTC.
Step 2	<pre>call-manager-fallback</pre> <p>Example: Router(config)# call-manager-fallback</p>	<p>Enters call-manager-fallback configuration mode.</p>

	Command or Action	Purpose
Step 3	<p>date-format {<i>mm-dd-yy</i> <i>dd-mm-yy</i> <i>yy-dd-mm</i> <i>yy-mm-dd</i>}</p> <p>Example: Router(config-cm-fallback)# date-format yy-dd-mm</p>	<p>Sets the date format for IP phone display. The choices are mm-dd-yy, dd-mm-yy, yy-dd-mm, and yy-mm-dd, where</p> <ul style="list-style-type: none"> dd:day mm:month yy:year <p>The default is set to mm-dd-yy.</p>
Step 4	<p>time-format {<i>12</i> <i>24</i>}</p> <p>Example: Router(config-cm-fallback)# time-format 24</p>	<p>Sets the time display format on all Cisco Unified IP Phones registered with the router. The default is set to a 12-hour clock.</p>
Step 5	<p>exit</p> <p>Example: Router(config-cm-fallback)# exit</p>	<p>Exits call-manager-fallback configuration mode.</p>

Example

The following example sets the time zone to Pacific Standard Time (PST), which is 8 hours behind UTC and sets the time display format to a 24 hour clock:

```
Router(config)# clock timezone PST -8
Router(config)# call-manager-fallback
Router(config-cm-fallback)# time-format 24
```

Configuring IP Phone Language Display

During Cisco Unified Communications Manager fallback, the language displays shown on Cisco Unified IP Phones default to the ISO-3166 country code of US (United States). The Cisco Unified IP Phone 7940 and Cisco Unified IP Phone 7960 can be configured for different languages (character sets and spelling conventions) using the **user-locale** command.



Note

This configuration option is available in Cisco SRST V2.1 and later versions running under Cisco Unified Communications Manager V3.2 and later versions. Systems with software prior to Cisco Unified SRST V2.1 and Cisco Unified Communications Manager V3.2 can use the default country, United States (US), only.

SUMMARY STEPS

1. **call-manager-fallback**
2. **user-locale** *country-code*
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>call-manager-fallback</code> Example: Router(config)# <code>call-manager-fallback</code>	Enters call-manager-fallback configuration mode.
Step 2	<code>user-locale country-code</code> Example: Router(config-cm-fallback)# <code>user-locale ES</code>	Selects a language by country for displays on the Cisco IP Phone 7940 and Cisco IP Phone 7960. The following ISO-3166 codes are available to Cisco SRST and Cisco Unified SRST systems running under Cisco Communications Manager V3.2 or later versions: <ul style="list-style-type: none"> • DE: German. • DK: Danish. • ES: Spanish. • FR: French. • IT: Italian. • JP: Japanese Katakana (available under Cisco Unified Communications Manager V4.0 or later versions). • NL: Dutch. • NO: Norwegian. • PT: Portuguese. • RU: Russian. • SE: Swedish. • US: United States English (default).
Step 3	<code>exit</code> Example: Router(config-cm-fallback)# <code>exit</code>	Exits call-manager-fallback configuration mode.

Examples

The following example offers a configuration for the Portugal user locale.

```
call-manager-fallback
user-locale PT
```

Configuring Customized System Messages for Cisco Unified IP Phones

Use the **system message** command to customize the system message displayed on all Cisco Unified IP Phone 7910, Cisco Unified IP Phone 7940G, and Cisco Unified IP Phone 7960G units during Cisco Unified Communications Manager fallback.

One of two keywords, **primary** and **secondary**, must be included in the command. The **primary** keyword is for IP phones that can support static text messages during fallback, such as the Cisco IP Phone 7940 and Cisco IP Phone 7960 units. The default display message for primary IP phones in fallback mode is “CM Fallback Service Operating.”

The **secondary** keyword is for Cisco Unified IP Phones that do not support static text messages and have a limited display space, such as the Cisco IP Phone 7910. Secondary IP phones flash messages during fallback. The default display message for secondary IP phones in fallback mode is “CM Fallback Service.”

Changes to the display message will occur immediately after configuration or at the end of each call.

**Note**

The normal in-service static text message is controlled by Cisco Unified Communications Manager.

SUMMARY STEPS

1. **call-manager-fallback**
2. **system message** { **primary** *primary-string* | **secondary** *secondary-string* }
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	call-manager-fallback Example: Router(config)# call-manager-fallback	Enters call-manager-fallback configuration mode.
Step 2	system message { primary <i>primary-string</i> secondary <i>secondary-string</i> } Example: Router(config-cm-fallback)# system message primary Custom Message	Declares the text for the system display message on IP phones in fallback mode. <ul style="list-style-type: none"> • primary <i>primary-string</i>: For Cisco Unified IP Phones that can support static text messages during fallback, such as the Cisco Unified IP Phone 7940 and Cisco Unified IP Phone 7960 units. A string of approximately 27 to 30 characters is allowed. • secondary <i>secondary-string</i>: For Cisco Unified IP Phones that do not support static text messages, such as the Cisco Unified IP Phone 7910. A string of approximately 20 characters is allowed.
Step 3	exit Example: Router(config-cm-fallback)# exit	Exits call-manager-fallback configuration mode.

Examples

The following example sets “SRST V3.0” as the system display message for all Cisco Unified IP Phones on a router:

```

call-manager-fallback
system message primary SRST V3.0
system message secondary SRST V3.0
exit

```

Configuring a Secondary Dial Tone

A secondary dial tone can be generated when a phone user dials a predefined PSTN access prefix and can be terminated when additional digits are dialed. An example is when a secondary dial tone is heard after the number 9 is dialed to reach an outside line.

SUMMARY STEPS

1. **call-manager-fallback**
2. **secondary-dialtone** *digit-string*
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	call-manager-fallback Example: Router(config)# call-manager-fallback	Enters call-manager-fallback configuration mode.
Step 2	secondary-dialtone <i>digit-string</i> Example: Router(config-cm-fallback)# secondary-dialtone 9	Activates a secondary dial tone when a digit string is dialed.
Step 3	exit Example: Router(config-cm-fallback)# exit	Exits call-manager-fallback configuration mode.

Examples

The following example sets the number 8 to trigger a secondary dial tone:

```

call-manager-fallback
secondary-dialtone 8

```

Configuring Dual-Line Phones

Dual-line phone configuration is required for dual-line phone operation during Cisco Unified Communications Manager fallback. Consultative transfer is also required (see the [“Enabling Consultative Call Transfer and Forward Using H.450.2 and H.450.3 with Cisco SRST 3.0”](#) section on page 98).

Dual-line IP phones are supported during Cisco Unified Communications Manager fallback using the **max-dn** command. Dual-line IP phones have one voice port with two channels to handle two independent calls. This capability enables call waiting, call transfer, and conference functions on a phone-line button.

In dual-line mode, each IP phone and its associated line button can support one or two calls. Selection of one of two calls on the same line is made using the blue Navigation button located below the phone display. When one of the dual-line channels is used on a specific phone, other phones that share the ephone-dn will be unable to use the secondary channel. The secondary channel will be reserved for use with the primary dual-line channel.

It is recommended that hunting be disabled to the second channel. For more information, see the [“Configuring Dial-Peer and Channel Hunting” section on page 94](#).

SUMMARY STEPS

1. **call-manager-fallback**
2. **max-dn** *max-directory-numbers* [**dual-line**] [**preference** *preference-order*]
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<code>call-manager-fallback</code> Example: Router(config)# <code>call-manager-fallback</code>	Enters call-manager-fallback configuration mode.
Step 2	<code>max-dn max-directory-numbers [dual-line]</code> <code>[preference preference-order]</code> Example: Router(config-cm-fallback)# <code>max-dn 15 dual-line preference 1</code>	Sets the maximum number of directory numbers (DNs) or virtual voice ports that can be supported by the router and activates dual-line mode. <ul style="list-style-type: none"> <code>max-directory-numbers</code>: Maximum number of directory numbers or virtual voice ports supported by the router. The maximum number is platform-dependent. The default is 0. See the “Platform and Memory Support” section on page 37 for further details. <code>dual-line</code> (Optional). Allows IP phones in Cisco Unified Communications Manager fallback mode to have a virtual voice port with two channels. <code>preference preference-order</code> (Optional). Sets the global preference for creating the VoIP dial peers for all directory numbers that are associated with the primary number. Range is from 0 to 10. Default is 0, which is the highest preference. <p>The <code>alias</code> command also has a <code>preference</code> keyword that sets <code>alias</code> command preference values. Setting the <code>alias</code> command <code>preference</code> keyword allows the default preference set with the <code>max-dn</code> command to be overridden. See Configuring Call Rerouting, page 79 for more information on using the <code>max-dn</code> command with the <code>alias</code> command.</p>
Step 3	<code>exit</code> Example: Router(config-cm-fallback)# <code>exit</code>	Exits call-manager-fallback configuration mode.

Examples

The following example sets the maximum number of DN's or virtual voice ports that can be supported by a router to 10 and activates the dual-line mode for all IP phones in Cisco Unified Communications Manager fallback mode.

```
call-manager-fallback
max-dn 10 dual-line
exit
```

Configuring Eight Lines Per Button (Octo-Line)

The octo-line feature supports up to eight active calls, both incoming and outgoing, on a single button. Eight incoming calls to an octo-line directory number ring simultaneously. After an incoming call is answered, the ringing stops and the remaining seven incoming calls hear a call waiting tone.

After an incoming call on an octo-line directory number is answered, the answering phone is in the connected state. Other phones that share the directory number are in the remoteMultiline state. A subsequent incoming call sends the call waiting tone to the phone connected to the call, and sends the ringing tone to the other phones that are in the remoteMultiline state. All phones sharing the directory number can pick up any of the incoming unanswered calls.

When multiple incoming calls ring on an octo-line directory number that is shared among multiple phones, the ringing tone stops on the phone that answers the call, and the call waiting tone is heard for other unanswered calls. The multiple instances of the ringing calls is displayed on other ephones sharing the directory number. After a connected call on an octo-line directory number is put on-hold, any phone that shares this directory number can pick up the held call. If a phone is in the process of transferring a call or creating a conference, other phones that share the octo-line directory number cannot steal the call.

As new calls come in on an octo-line, the system searches for the next available idle line using the **huntstop chan tag** command, where *tag* is a number from 1 to 8. An idle channel is selected from the lowest number to the highest. When the highest number of allowed calls is received, the system stops hunting for available channels. Use this command to limit the number of incoming calls on an octo-line directory number and reserve channels for outgoing calls or features such as call transfer or conference calls.

With the new feature you can:

- Configure only dual-line mode
- Configure only octo-line mode
- Configure dual-line mode and octo-line mode

Prerequisites

- Cisco Unified SRST 7.0/4.3
- Cisco Unified Communications Manager 6.0
- Cisco IOS Release 12.4(15)XZ

Restrictions

- Octo-line directory numbers are not supported by the Cisco Unified IP Phone 7902, 7920, or 7931, or by analog phones connected to Cisco ATA or Cisco VG224.
- The maximum number of directory numbers must be equal to or greater than the total of all line combinations.
- SIP endpoints are not supported on H.323 trunks. SIP endpoints are supported on SIP trunks only.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **call-manager-fallback**

4. **max-dn** *max-no-of-directories* [dual-line | octo-line] [<num> octo-line]
5. **huntstop channel** 1-8
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<p>enable</p> <p>Example: Router> enable</p>	<p>Enables privileged EXEC mode.</p> <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	<p>configure terminal</p> <p>Example: Router# configure terminal</p>	<p>Enters global configuration mode.</p>
Step 3	<p>call-manager-fallback</p> <p>Example: Router(config)# call-manager-fallback</p>	<p>Enters call-manager-fallback configuration mode.</p>
Step 4	<p>max-dn <i>max-no-of-directories</i> [dual-line octo-line] [<num> octo-line]</p> <p>Example: Router(config-cm-fallback)# max-dn 15 dual-line 6 octo-line</p>	<p>Sets the maximum number of directory numbers (dn) or virtual voice ports that can be supported by the router and activates dual-line mode, octo-line mode, or both modes.</p> <ul style="list-style-type: none"> • max-directory-numbers: Maximum number of directory numbers or virtual voice ports supported by the router. The maximum number is platform-dependent. The default is 0. • dual-line: (Optional) Allows IP phones in Cisco Unified Communications Manager fallback mode to have a virtual voice port with two channels. • octo-line: (Optional) Allows IP phones in Cisco Unified Communications Manager fallback mode to have a virtual voice port with eight channels. • num (Optional): Sets the number of directory numbers for octo-mode. The range is 0-8 and the default is 8.
Step 5	<p>huntstop channel 1-8</p> <p>Example: Router(config-cm-fallback)# huntstop channel 4</p>	<p>Enables channel huntstop on an octo-line, which keeps a call from hunting to the next channel of a directory number if the last allowed channel is busy or does not answer.</p> <ul style="list-style-type: none"> • number: Number of channels available to accept incoming calls. The remaining channels are reserved for outgoing calls and features such as call transfer, call waiting, and conferencing. The range is 1-8 and the default is 8. • The command is supported for octo-line directory numbers only.

	Command or Action	Purpose
Step 6	<code>end</code>	Returns to privileged EXEC mode.
	Example: <code>Router(config)# end</code>	

Example

In the following example, octo-line mode is enabled, there are 8 octo-line directory numbers, there are a maximum of 23 directory numbers, and a maximum of 6 channels are available for incoming calls.

```
!
call-manager-fallback
max-dn 23 octo-line 8
huntstop channel 6
!
```

How to Set Up Cisco IP Communicator for Cisco Unified SRST

Cisco IP Communicator is a software-based application that delivers enhanced telephony support on personal computers. Cisco IP Communicator appears on a user's computer monitor as a graphical, display-based IP phone with a color screen, a key pad, feature buttons, and soft keys.

For information about operation, see the Cisco IP Communicator online help and user documentation.

Prerequisites

You should have the following before you begin this task:

- IP address of the Cisco Unified SRST TFTP server
- Headset with microphone for your PC (Optional; you can use PC internal speakers and microphone)

SUMMARY STEPS

1. Download the latest version of the Cisco IP Communicator software and install it on your PC.
2. (Optional) Attach the headset to your PC.
3. Start the Cisco IP Communicator software application.
4. Define the IP address of the Cisco Unified SRST TFTP server.
5. Wait for the Cisco IP Communicator application to connect to the Cisco Unified SRST system and register itself.
6. Perform final configuration of buttons and numbers for the Cisco IP Communicator from the Cisco Unified SRST router.

DETAILED STEPS

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- Step 1** Download the latest version of the Cisco IP Communicator software and install it on your PC.
- Step 2** (Optional) Attach a headset to your PC.
- Step 3** Start the Cisco IP Communicator software application.

- Step 4** Define the IP address of the Cisco Unified SRST TFTP server.
- a. Open the Network > User Preferences window.
 - b. Enter the IP address of the Cisco Unified SRST TFTP server.
- Step 5** Wait for the Cisco IP Communicator application to connect to the Cisco Unified SRST system and registers itself.
-

Verifying Cisco IP Communicator

- Step 1** Use the **show running-config** command to display ephone-dn and ephone information associated with this phone.
- Step 2** After Cisco IP Communicator registers with Cisco Unified CME, it displays the phone extensions and soft keys in its configuration. Verify that these are correct.
- Step 3** Make a local call from the phone and ask someone to call you. Verify that you have a two-way voice path.
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Troubleshooting Cisco IP Communicator

Use the **debug ephone detail** command to diagnose problems with calls. For more information, see the [Cisco IOS Debug Command Reference](#).

Where to Go Next

The next step is setting up call handling. See the [“Setting Up Call Handling” section on page 77](#) for instructions.

For additional information, see the [“Additional References” section on page 44](#) in the [“Overview of Cisco Unified SRST” chapter](#).