



## **Cisco Unified SRST and Cisco Unified SIP SRST Command Reference (All Versions)**

**Last Modified:** 2022-12-14

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## Command Reference: A through M

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## access-code

To configure trunk access codes for each type of line so that the Cisco IP phones can access the trunk lines only during Cisco Unified Communications Manager fallback when the Cisco Unified SRST feature is enabled, use the **access-code** command in call-manager-fallback configuration mode. To remove the telephone access code configuration from the Cisco IP phones, use the **no** form of this command.

### FXO and EandM Line Types

**access-code** {fxo | e&m} *dial-string*

**no access-code** {fxo | e&m} *dial-string*

### BRI and PRI Line Types

**access-code** {bri | pri} *dial-string* [**direct-inward-dial**]

**no access-code** {bri | pri} [*dial-string*] [**direct-inward-dial**]

#### Syntax Description

<b>fxo</b>	Enables a Foreign Exchange Office (FXO) interface.
<b>e&amp;m</b>	Enables an analog ear and mouth (E&M) interface.
<i>dial-string</i>	Sets up dial access codes for each specified line type by creating dial peers.
<b>bri</b>	Enables a BRI interface.
<b>pri</b>	Enables a PRI interface.
<b>direct-inward-dial</b>	(Optional) Enables direct inward dialing on a POTS dial peer.

#### Command Default

No default behavior or values.

#### Command Modes

Call-manager-fallback configuration

#### Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco Unified SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(2)XT	Cisco Unified SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco Unified SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.

#### Usage Guidelines

The **access-code** command configures trunk access codes for each type of line—BRI, E&M, FXO, and PRI—so that the Cisco IP phones can access the trunk lines during Cisco Unified Communications Manager fallback when Cisco Unified SRST is enabled. This provides systemwide access.



**Note** The **access-code** command creates temporary dial peers during Cisco Unified Communications Manager fallback. In many cases, you may already have the local PSTN ports configured with appropriate access codes provided by dial peers (for example, dial 9 to select an FXO PSTN line), in which case this command is not needed.

The **access-code** command creates temporary POTS voice dial peers for all the selected types of voice ports during Cisco Unified Communications Manager fallback. Use this command only if your normal network dial-plan configuration prevents you from configuring permanent POTS voice dial peers to provide trunk access for use in the fallback mode. When the **access-code** command is used, it is important to ensure that all ports covered by the command have valid trunk connections. Selection between ports for outgoing calls is random.

The dial string is used to set up temporary dial peers for each specified line type. If there are multiple lines of the same type, a dial peer is set up for each line. The dial peers are active only during Cisco Unified Communications Manager fallback when the Cisco Unified SRST feature is enabled. The result of this configuration is that all PSTN interfaces of the same type, for example BRI, are treated as equivalent, and any port may be selected to place the outgoing PSTN call. The **direct-inward-dial** keyword enables you to set direct-inward-dialing access for PRI and BRI trunk lines.

## Examples

The following example sets the **access-code** command for BRI 8:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code bri 8 direct-inward-dial
The following example sets the access-code
command for E&M 8:
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code e&m 8
```

The following example sets the **access-code** command for FXO 9:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code fxo 9
```

The following example sets the **access-code** command for PRI 9:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code pri 9 direct-inward-dial
```

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

# addon

To define whether a phone type supports add-on modules, use the **addon** command in ephone-type configuration mode. To reset to the default value, use the **no** form of this command.

**addon**  
**no addon**

## Syntax Description

This command has no arguments or keywords.

## Command Default

Disabled (phone type does not support add-on modules).

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command specifies that add-on modules, such as the Cisco Unified IP Phone 7915 Expansion Module, are supported by the type of phone being added with the phone-type template.

## Examples

The following example shows that expansion modules are supported for the phone being added with an ephone-type template:

```
Router(config)# ephone-type 7965
Router(config-ephone-type)# addon
```

## Related Commands

Command	Description
<b>device-id</b>	Specifies the device ID for a phone type in an ephone-type template.
<b>device-name</b>	Assigns a name to a phone type in an ephone-type template.



# address (voice emergency response location)

To define the civic address for an ERL that is used for the ALI database upload, use the **address** command in voice emergency response location mode. To remove this definition, use the **no** form of the command. This command is optional.

**address** *string*  
**no** address

<b>Syntax Description</b>	<i>string</i> String (1-247 characters) used to identify an ERL's civic address.
---------------------------	--

<b>Command Default</b>	The civic address is not defined.
------------------------	-----------------------------------

<b>Command Modes</b>	Voice emergency response location configuration (cfg-emrgncy-resp-location)
----------------------	---

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

<b>Usage Guidelines</b>	This command creates a comma separated text entry of the ERL's civic address. The address information must be entered to conform with the NENA-2 Data Record specifications or the recommendations by the service provider.
-------------------------	---

<b>Examples</b>	In this example, a civic address is displayed for ERL 60.
-----------------	---

```
voice emergency response location 60
subnet 1 209.165.200.224 255.255.0.0
elin 1 4085550100
name Cookies and More Incorporated,
address I,408,5550100,,11902,,Main Street,Emerald City,CA,Idina Menzel,1,,,,,
```

Related Commands	Command	Description
	<b>elin</b>	Specifies a PSTN number that will replace the caller's extension.
	<b>name</b>	Specifies a string (up to 30-characters) used internally to identify or describe the emergency response location.
	<b>subnet</b>	Defines which IP phones are part of this ERL.

## after-hour exempt (voice register pool)

To specify that a particular voice register pool does not have any of its outgoing calls blocked, even though global system call blocking is enabled, use the **after-hours exempt** command in voice register pool configuration mode. To return to the default, use the **no** form of this command.

**after-hour exempt**  
**no after-hour exempt**

### Syntax Description

This command has no arguments or keywords.

### Command Default

Disabled (global call blocking remains active, as configured).

### Command Modes

Voice register pool configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SRST 3.4	This command was introduced.

### Usage Guidelines

This command exempts individual Cisco SIP phones and phone extensions in a voice register pool from call blocking.

Call blocking on Cisco IP phones is defined in the following way. First, define one or more patterns of outgoing digits by using the **after-hours block pattern** command in either telephony-service configuration mode for Cisco Unified CME or in call-manager-fallback configuration mode for Cisco Unified SIP SRST. Next, define one or more time periods during which calls that match those patterns are to be blocked are by using the **after-hours date** or **after-hours day** command or both. By default, all Cisco IP phones in a Cisco Unified CME or Cisco Unified SIP SRST system are restricted during the specified time if at least one pattern and at least one time period are defined.

A phone extension is exempt as long as the **after-hour exempt** command is configured in voice register dn or in voice register pool configuration mode.



**Note** The **id** (voice register pool) command is required before Cisco Unified CME or Cisco Unified SIP SRST can accept registrations. Configure the **id** (voice register pool) command before any other voice register pool command.

### Examples

The following example shows how to configure a SIP phone, specified by the **voice register pool** command, so that outgoing calls are not blocked:

```
Router(config)# voice register pool 23
Router(config-register-pool)# after-hour exempt
```

The following example shows how to specify that outgoing calls from extension 5001 under voice register pool 2 are not blocked:

```

Router(config)# voice register pool 2
Router(config-register-pool)# number 5001
Router(config-register-pool)# after-hour exempt

```

**Related Commands**

Command	Description
<b>after-hours block pattern</b>	Defines a pattern of digits for blocking outgoing calls from IP phones.
<b>after-hours block pattern (call-manager-fallback)</b>	Defines a pattern of digits for blocking outgoing calls from IP phones.
<b>after-hours date</b>	Defines a recurring period based on date during which outgoing calls that match defined block patterns are blocked on IP phones.
<b>after-hours date (call-manager-fallback)</b>	Defines a recurring period based on date during which outgoing calls that match defined block patterns are blocked on IP phones.
<b>after-hours day</b>	Defines a recurring period based on day of the week during which outgoing calls that match defined block patterns are blocked on IP phones.
<b>after-hours day (call-manager-fallback)</b>	Defines a recurring period based on day of the week during which outgoing calls that match defined block patterns are blocked on IP phones.
<b>after-hour exempt (voice register dn)</b>	Specifies that an individual extension on a SIP phone does not have any of its outgoing calls blocked even though global system call blocking is enabled.
<b>call-manager-fallback</b>	Enables Cisco Unified SIP SRST support and enter call-manager-fallback configuration mode.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco Unified SIP IP phones.
<b>telephony-service</b>	Enters telephony-service configuration mode to configure a Cisco Unified Communications Manager Express (Cisco Unified CME) system.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register pool</b>	Enters voice register pool configuration mode for Cisco SIP IP phones.

## after-hours block pattern (call-manager-fallback)

To define a pattern of outgoing digits for call blocking from IP phones, use the **after-hours block pattern** command in call-manager-fallback configuration mode. To delete a call-blocking pattern, use the **no** form of this command.

**after-hours block pattern** *pattern-tag pattern* [7-24]

**no after-hours block pattern** *pattern-tag*

### Syntax Description

<i>pattern-tag</i>	Identifier for a call-blocking pattern. Up to 32 call-blocking patterns can be defined in separate commands.
<i>pattern</i>	Outgoing call digits to be matched for blocking.
<b>7-24</b>	(Optional) If the <b>7-24</b> keyword is specified, the pattern is always blocked, 7 days a week, 24 hours a day. If the <b>7-24</b> keyword is not specified, the pattern is blocked during the days and dates that are defined with the <b>after-hours day</b> and <b>after-hours date</b> commands.

### Command Default

No pattern is defined.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco Unified SRST 3.0	This command was introduced.
12.3(4)T	Cisco Unified SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
15.3(2)T	Cisco Unified CME 9.5	This command was modified to include regular expressions as a value for the <i>pattern</i> argument.

### Usage Guidelines

Call blocking on IP phones is defined in the following way. First, one or more patterns of outgoing digits are defined using the **after-hours block pattern** command. Next, one or more time periods during which calls that match those patterns are to be blocked are defined using the **after-hours date** or **after-hours day** command or both. By default, all IP phones in a Cisco Unified SRST system are restricted during the specified time if at least one pattern and at least one time period are defined.

Blocked calls return a fast-busy tone to the user for approximately 10 seconds before the call is terminated and the line is returned to on-hook status.

In Cisco Unified SRST 9.5, support for afterhours pattern blocking is extended to regular expression patterns for dial plans on Cisco Unified SIP and Cisco Unified SCCP IP phones. With this support, users can add a combination of fixed dial plans and regular expression-based dial plans.

When a call is initiated after hours, the dialed number is matched against a combination of dial plans. If a match is found, the call is blocked.

To enable regular expression patterns to be included when configuring afterhours pattern blocking, the **after-hours block pattern** command is modified to include regular expressions as a value for the *pattern* argument.



**Note** In SRST (call-manager-fallback configuration) mode, there is no phone- or pin-based exempt to after-hours call blocking.

## Examples

The following example defines pattern 1, which blocks international calls after hours for a Cisco Unified SRST system that requires dialing 9 for external calls:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# after-hours block pattern 1 9011
```

The following example shows how to configure several afterhours block patterns of regular expressions:

```
Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# call-manager-fallback

Router(config-telephony)# after-hours block pattern 1 ?
WORD Specific block pattern or a regular expression for after-hour block
pattern
Router(config-cm-fallback)# after-hours block pattern 1 1234
Router(config-cm-fallback)# after-hours block pattern 2 .T
Router(config-cm-fallback)# after-hours block pattern 3 987654([1-3])+
Router(config-cm-fallback)# after-hours block pattern 4 98765432[1-9]
Router(config-cm-fallback)# after-hours block pattern 5 98765(432|422|456)
```

## Related Commands

Command	Description
<b>after-hours date (call-manager-fallback)</b>	Defines a recurring period based on date during which outgoing calls that match defined block patterns are blocked on IP phones.
<b>after-hours day (call-manager-fallback)</b>	Defines a recurring period based on day of the week during which outgoing calls that match defined block patterns are blocked on IP phones.

## after-hours date (call-manager-fallback)

To define a recurring period based on date during which outgoing calls that match defined block patterns are blocked on IP phones, use the **after-hours date** command in call-manager-fallback configuration mode. To delete a defined time period, use the **no** form of this command.

**after-hours date** *month date start-time stop-time*

**no after-hours date** *month date*

### Syntax Description

<i>month</i>	Abbreviated month. The following abbreviations for month are valid: <b>jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, dec</b> .
<i>date</i>	Date of the month. Range is from 1 to 31.
<i>start-time stop-time</i>	Beginning and ending times for call blocking, in an HH:MM format using a 24-hour clock. The stop time must be greater than the start time. The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, calls are blocked for the entire 24-hour period on the specified date.

### Command Default

No time period based on date is defined for call blocking.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco Unified SRST 3.0	This command was introduced.
12.3(4)T	Cisco Unified SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

Call blocking on IP phones is defined in the following way. First, one or more patterns of outgoing digits are defined using the **after-hours block pattern** command. Next, one or more time periods during which calls that match those patterns are to be blocked are defined using the **after-hours date** or **after-hours day** command or both. By default, all IP phones in a Cisco Unified SRST system are restricted during the specified time if at least one pattern and at least one time period are defined.

Call blocking for the time period that is defined in this command recurs annually on the date specified in the command.



**Note** In SRST (call-manager-fallback configuration) mode, there is no phone- or pin-based exempt to after-hours call blocking.

### Examples

The following example defines January 1 as an entire day on which calls that match the pattern specified in the **after-hours block pattern** command are blocked:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# after-hours date jan 1 00:00 00:00
```

**Related Commands**

Command	Description
<b>after-hours block pattern (call-manager-fallback)</b>	Defines a pattern of digits for blocking outgoing calls from IP phones.
<b>after-hours day (call- manager-fallback)</b>	Defines a recurring period based on day of the week during which outgoing calls that match defined block patterns are blocked on IP phones.

## after-hours day (call-manager-fallback)

To define a recurring period based on date during which outgoing calls that match defined block patterns are blocked on IP phones, use the **after-hours date** command in call-manager-fallback configuration mode. To delete a defined time period, use the **no** form of this command.

**after-hours date** *month date start-time stop-time*

**no after-hours date** *month date*

### Syntax Description

<i>month</i>	Abbreviated month. The following abbreviations for month are valid: <b>jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, dec</b> .
<i>date</i>	Date of the month. Range is from 1 to 31.
<i>start-time stop-time</i>	Beginning and ending times for call blocking, in an HH:MM format using a 24-hour clock. The stop time must be greater than the start time. The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, calls are blocked for the entire 24-hour period on the specified date.

### Command Default

No time period based on date is defined for call blocking.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco Unified SRST 3.0	This command was introduced.
12.3(4)T	Cisco Unified SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

Call blocking on IP phones is defined in the following way. First, one or more patterns of outgoing digits are defined using the **after-hours block pattern** command. Next, one or more time periods during which calls that match those patterns are to be blocked are defined using the **after-hours date** or **after-hours day** command or both. By default, all IP phones in a Cisco Unified SRST system are restricted during the specified time if at least one pattern and at least one time period are defined.

Call blocking for the time period that is defined in this command recurs annually on the date specified in the command.



**Note** In SRST (call-manager-fallback configuration) mode, there is no phone- or pin-based exempt to after-hours call blocking.

### Examples

The following example defines January 1 as an entire day on which calls that match the pattern specified in the **after-hours block pattern** command are blocked:



```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# after-hours date jan 1 00:00 00:00
```

**Related Commands**

Command	Description
<b>after-hours block pattern (call-manager-fallback)</b>	Defines a pattern of digits for blocking outgoing calls from IP phones.
<b>after-hours day (call- manager-fallback)</b>	Defines a recurring period based on day of the week during which outgoing calls that match defined block patterns are blocked on IP phones.

## alias (call-manager-fallback)

To provide a mechanism for rerouting calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback, use the **alias** command in call-manager-fallback configuration mode. To disable rerouting of unmatched call destination calls, use the **no** form of this command.

**alias** *tag number-pattern* **to** *alternate-number* [**preference** *preference-value*] [**cfw** *number* **timeout** *timeout-value*] [**huntstop**]

**no alias** *tag number-pattern* **to** *alternate-number* [**preference** *preference-value*] [**cfw** *number* **timeout** *timeout-value*] [**huntstop**]

### Syntax Description

<i>tag</i>	Identifier for alias rule range. The range is from 1 to 50.
<i>number-pattern</i>	Pattern to match the incoming telephone number. This pattern may include wildcards. A <i>number-pattern</i> can be used multiple times.
<b>to</b>	Connects the tag number pattern to the alternate number.
<i>alternate-number</i>	Alternate telephone number to route incoming calls to match the number pattern. The alternate number has to be a specific extension that belongs to an IP phone that is actively registered on the Cisco Unified SRST router. The alternate telephone number can be used in multiple <b>alias</b> commands.
<b>preference</b>	(Optional) Assigns a dial-peer preference value to the alias. Use with the <b>max-dn</b> command.
<i>preference-value</i>	(Optional) Preference value of the associated dial peer. The range is from 0 to 10.
<b>cfw</b> <i>number</i>	(Optional) Allows users to set call forward busy and call forward no answer to a set string and override globally configured call forward settings.
<b>timeout</b> <i>timeout-value</i>	(Optional) Sets the ring no-answer timeout duration for call forwarding, in seconds. Range is from 3 to 60000. The <b>cfw</b> keyword assumes that you want to forward calls to the same number for both busy and no-answer call forward cases. The <i>timeout-value</i> applies only to the no-answer call forward case. There is no timeout required for a busy call forward situation.
<b>huntstop</b>	(Optional) Stops call hunting after trying the <i>alternate-number</i> . This keyword only has an effect if the global command <b>no huntstop</b> is set.

### Command Default

No default behavior or values.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco Unified SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.

Cisco IOS Release	Cisco Product	Modification
12.2(8)T	Cisco Unified SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco Unified SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco Unified SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers. The <b>preference</b> keyword was added.
12.3(11)T	Cisco Unified SRST 3.2	The <b>cfw</b> keyword was added. The maximum number of <b>alias</b> commands used for creating calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback was increased to 50. The <i>alternate-number</i> argument can be used in multiple <b>alias</b> commands.

### Usage Guidelines

The **alias** command provides a mechanism for rerouting calls to telephone numbers that are unavailable during fallback. Up to 50 sets of rerouting alias rules can be created for calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback. Sets of alias rules are created using the **alias** command. An alias is activated when a telephone registers that has a phone number matching a configured *alternate-number* alias. Under that condition, an incoming call is rerouted to the alternate number. The *alternate-number* argument can be used in multiple **alias** commands, allowing you to reroute multiple different numbers to the same target number.

The configured *alternate-number* must be a specific E.164 phone number or extension that belongs to an IP phone registered on the Cisco Unified SRST router. When an IP phone registers with a number that matches an *alternate-number*, an additional POTS dial peer is created. The destination pattern is set to the initial configured *number-pattern*, and the POTS dial peer voice port is set to match the voice port associated with the *alternate-number*.

If other IP phones register with specific phone numbers within the range of the initial *number-pattern*, the call is routed back to the IP phone rather than to the *alternate-number* (according to normal dial-peer longest-match, preference, and huntstop rules).

The **cfw** keyword allows you to configure a call forward destination for calls that are busy or not answered. Call forward no answer is defined as when the phone rings for a few seconds and the call is not answered, it is forwarded to the configured destination. Call forward busy and call forward no answer can be configured to a set string and override globally configured call forward settings.



**Note** Globally configured settings are selected under call-manager-fallback and apply to all phones that register for SRST service.

You can also create a specific call forwarding path for a particular number. The benefit of using the **cfw** keyword is that during SRST, you can reroute calls from otherwise unreachable numbers onto phones that are available. Basic hunt groups can be established with call-forwarding rules so that if the first SRST phone is busy, you can forward the call to a second SRST phone.

The **cfw** keyword also allows you to alias a phone number to itself, permitting setting of per-phone number forwarding. An example of aliasing a number to itself follows. If a phone registers with extension 1001, a dial peer that routes calls to the phone is automatically created for 1001. If the call-manager-fallback dial-peer preference (set with the **max-dn** command) for this initial dial peer is set to 2, the dial peer uses 2 as its preference setting.

Then, use the **alias** command to alias the phone number to itself:

```
alias 1 1001 to 1001 preference 1 cfw 2001 timeout 20
```

In this example, you have created a second dial peer for 1001 to route calls to 1001, but that has preference 1 and call forwarding to 2001. Because the preference on the dial peer created by the **alias** command is now a lower numeric value than the preference that the dial peer first created, all calls come initially to the dial peer created by the **alias** command. In that way the calls are subject to the forwarding as set by the **alias** command, instead of any call forwarding that may have been set globally.

The alias **huntstop** keyword is relevant only if you have also set the global **no huntstop** command under call-manager-fallback. Also, you may need to set the global **no huntstop** if you have multiple **alias** commands with the same *number-pattern*, and you want to enable hunting on busy between the aliases. That is, one alias for *number-pattern* is tried, and then if that phone is busy, the second alias for *number-pattern* is tried.

The alias **huntstop** keyword allows you to turn huntstop behavior back on for an individual alias, if huntstop is turned off globally by the **no huntstop** command. Setting the **huntstop** keyword on an individual alias stops hunting at the alias, making the alias the final member of the hunt sequence.



**Note** The **alias** command supports all port types and obsoletes the **default-destination** command. The alias command is recommended over the **default-destination** command.

## Examples

In the following example, alias 1 is configured to route calls to extensions 6000 through 6099 to extension 5001 using a dial peer with a preference value of 2. Extensions 6000 through 6099 are a subset of IP phones without fallback service. During fallback, calls to these extensions are routed to 5001.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# alias 1 60.. to 5001 preference 2
```

In the following example, alias 1 is set up to route calls coming into extensions 5000 through 5999 to extension 6000. The routing occurs when extensions 5000 through 5999 are unavailable during Cisco Unified Communications Manager fallback.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# alias 1 5... to 6000
```

The following example sets the **preference** keyword in the **alias** command to a lower preference value than the preference number created by the **max-dn** command. Setting a lower value allows the **cfw** keyword to take effect. The incoming call to extension 1000 hunts to alias because it has a lower preference, and no-answer/busy calls to 1000 are forwarded to 2000. All incoming calls to other extensions in SRST mode are forwarded to 3000 after 10 seconds.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# alias 1 1000 to 1000 preference 1 cfw 2000 timeout 10
Router(config-cm-fallback)# max-dn 10 preference 2
```

```
Router(config-cm-fallback)# call-forward busy 3000  
Router(config-cm-fallback)# call-forward noan 3000 timeout 10
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.
<b>default-destination</b>	Assigns a default destination number for incoming telephone calls on the Cisco Unified SRST router.
<b>max-dn (call- manager-fallback)</b>	Sets the maximum possible number of virtual voice ports that can be supported by a router and activates dual-line mode.
<b>show dialplan number</b>	Displays which outgoing dial peer is reached when a particular phone number is dialed.

## alias (voice register pool)

To allow Cisco Session Initiation Protocol (SIP) IP phones to handle inbound PSTN calls to telephone numbers that are unavailable when the main proxy is not available, use the **alias** command in voice register pool configuration mode. To disable rerouting of unmatched call destination calls, use the **no** form of this command.

**alias** *tag pattern* **to** *target* [**preference** *value*]  
**no** **alias** *tag*

### Syntax Description

<i>tag</i>	Number from 1 to 5 and the distinguishing factor when there are multiple alias commands.
<i>pattern</i>	Prefix number that represents a pattern against which to match the incoming telephone number. It may include wildcards.
<b>to</b>	Connects the number <i>pattern</i> to the <i>target</i> (alternate number).
<i>target</i>	Target number. An alternate telephone number to route incoming calls that match the number pattern. The target must be a full E.164 number.
<b>preference</b> <i>value</i>	(Optional) Assigns a dial-peer preference value to the alias. The <i>value</i> argument is the value of the associated dial peer. The range is from 1 to 10. There is no default.

### Command Default

None

### Command Modes

Voice register pool configuration

### Command History

Release	Product Version	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced to Cisco Unified.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

The **alias** command services calls placed to telephone numbers that are unavailable because the main proxy is not available. The **alias** command is activated when a Cisco SIP IP phone that has an extension number matching the target number registers.

When a phone with the target number registers, calls that match the number pattern are rerouted to the target number. The target number must be a local phone number to enable rerouting of a range of number patterns. When a Cisco SIP IP phone registers with a target number, an additional VoIP dial peer is created using the target number IP address as a session target and destination pattern as configured with the **alias pattern** command. For the **alias** command to work, the VoIP dial peer must be set with a translation rule to translate the called number to the target number. Translation rules can be configured under voice register pool configuration mode.

If other Cisco SIP IP phones register that have specific phone numbers that fall within the alias range or if another static dial peer exists for this pattern, the call is routed using the appropriate dial peer in preference to being rerouted to this alternate alias number (according to normal dial-peer longest-match, preference, and huntstop rules).



**Note** The **id (voice register pool)** command must be configured before any other voice register pool commands, including the **alias** command. The **id** command identifies a locally available individual Cisco SIP IP phone or sets of Cisco SIP IP phones. Before the **alias** command is configured, translation rules must be set using the **translate-outgoing (voice register pool)** command. Translation rules are a general-purpose number-manipulation mechanism that perform operations such as automatically adding telephone area and prefix codes to dialed numbers.

## Examples

The following example configures calls to numbers in the 5000 to 5099 range that are not otherwise explicitly resolved to a specific extension number to be routed to the phone with extension 5001. Phone calls intended for phones that are not given fallback service can then be redirected to the specified extension number.

```
Router(config)# voice register pool
Router(config-register-pool)# alias 1 50.. to 5001
```

## Related Commands

Command	Description
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.
<b>show dial-peer voice</b>	Displays information for voice dial peers.
<b>translate-outgoing (voice register pool)</b>	Applies a translation rule to manipulate dialed digits on an outbound POTS or VoIP call leg.
<b>voice register pool</b>	Enables SIP SRST voice register pool configuration commands.

# allow-hash-in-dn(voice register global)

To allow the insertion of '#' at any place in voice register dn, use the **allow-hash-in-dn** command in voice register global mode. To disable this, use the **no** form of this command.

**allow-hash-in-dn**  
**no allow-hash-in-dn**

## Syntax Description

<i>allow-hash-in-dn</i>	Allow the insertion of hash at all places in voice register dn.
-------------------------	---

## Command Default

This command is disabled by default.

## Command Modes

Voice register global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
15.6(2)T	Cisco SIP SRST 11.0	This command was introduced.

## Usage Guidelines

Before this command was introduced, the characters supported in voice register dn were 0-9, +, and \*. The new command is enabled whenever the user requires the insertion of # in voice register dn. The command is disabled by default. You can configure this command only in Cisco Unified SRST and Cisco Unified E-SRST modes. The character # can be inserted at any place in voice register dn. When this command is enabled, users are required to change the default termination character(#) to another valid character using **?dial-peer terminator?** command under configuration mode.

## Examples

The following example shows how to enable the command in mode E-SRST, SRST and how to change the default terminator:

```
Router(config)#voice register global
Router(config-register-global)#mode esrst
Router(config-register-global)#allow-hash-in-dn

Router(config)#voice register global
Router(config-register-global)#no mode [Default SRST mode]
Router(config-register-global)#allow-hash-in-dn

Router(config)#dial-peer terminator ?
WORD Terminator character: '0'-'9', 'A'-'F', '*', or '#'

Router(config)#dial-peer terminator *
```

## Related Commands

Command	Description
<b>dial-peer terminator</b>	Configures the character used as a terminator for variable-length dialed numbers.



# application (call-manager-fallback)

To select the session-level application for all Cisco IP phone lines served by the Cisco Unified SRST router, use the **application** command in call-manager-fallback configuration mode. To disable this application, use the **no** form of this command.

**application** *application-name*  
**no application** *application-name*

## Syntax Description

<i>application-name</i>	Interactive voice response (IVR) application name.
-------------------------	--

## Command Default

DEFAULT system session application

## Command Modes

Call-manager-fallback configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco Unified SRST 3.0	This command was introduced.
12.3(4)T	Cisco Unified SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

Use this command to assign a Tool Command Language (Tcl) IVR application to all IP phones served by the Cisco Unified SRST router.

## Examples

The following example selects a Tcl IVR application named “app-xfer” for all IP phones served by the Cisco Unified SRST router:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback) application app-xfer
```

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST and enters call-manager-fallback configuration mode.

# application (voice register global)

To select the session-level application for all dial peers associated with Session Initiation Protocol (SIP) phones, use the **application** command in voice register global configuration mode. To disable use of the application, use the **no** form of this command.

**application** *application-name*  
**no application**

## Syntax Description

<i>application-name</i>	Interactive voice response (IVR) application name.
-------------------------	--

## Command Default

Default application on router

## Command Modes

Voice register global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

## Usage Guidelines

During Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) registration, a dial peer is created for each SIP phone and that dial peer includes the default session application. The **application** command allows you to change the default application for all dial peers associated with the Cisco SIP IP phones, if desired. The applied application (or TCL IVR script) must support call redirection. Use the **show call application voice summary** command to display a list of applications.

The **application** command in voice register pool configuration mode takes precedence over this command in voice register global configuration mode.



**Note** Configure the **id** (voice register pool) command before any other voice register pool commands, including the **application** command. The **id** command identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.

## Examples

The following example shows how to set the Tcl IVR application globally for all SIP phones:

```
Router(config)# voice register global
Router(config-register-global)# mode cme
Router(config-register-global)# application sipapp2
```

## Related Commands

Command	Description
<b>application (dial-peer)</b>	Enables a specific application on a dial peer.

Command	Description
<b>application (voice register pool)</b>	Selects the session-level application for the dial peer associated an individual SIP phone in a Cisco Unified CME environment or for a group of phones in a Cisco Unified SIP SRST environment.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CME system.
<b>show call application voice summary</b>	Displays information about voice applications.
<b>show dial-peer voice</b>	Displays information for dial peers.
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# application (voice register pool)

To select the session-level application for the dial peer associated with an individual Session Initiation Protocol (SIP) phone in a Cisco Unified Communications Manager Express (Cisco Unified CME) environment or for a group of phones in a Cisco Unified SIP Survivable Remote Site Telephony (SRST) environment, use the **application** command in voice register pool configuration mode. To disable use of the application, use the **no** form of this command.

**application** *application-name*

**no application**

## Syntax Description

<i>application-name</i>	Name of the selected interactive voice response (IVR) application name.
-------------------------	---

## Command Default

Default application on router

## Command Modes

Voice register pool configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 and Cisco SIP SRST 3.4	This command was added to Cisco CME.

## Usage Guidelines

During Cisco Unified CME or Cisco Unified SIP SRST registration, a dial peer is created for each SIP phone and that dial peer includes the default session application. The **application** command allows you to change the default application for all dial peers associated with the Cisco SIP IP phones, if desired. The applied application (or TCL IVR script) must support call redirection. Use the **show call application voice summary** command to display a list of applications.

The **application** command in voice register pool configuration mode takes precedence over this command in voice register global configuration mode.



**Note** Configure the **id** (voice register pool) command before any other voice register pool commands, including the **application** command. The **id** command identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.

## Examples

The following example shows how to set the IVR application for the SIP phone specified by the **voice register pool** command:

```
Router(config)# voice register pool 1
Router(config-register-pool) application sipapp2
```

The following partial sample output from the **show running-config** command shows that voice register pool 1 has been set up to use the SIP.app application:

```
voice register pool 1
 id network 172.16.0.0 mask 255.255.0.0
 application SIP.app
 voice-class codec 1
```

#### Related Commands

Command	Description
<b>application (dial-peer)</b>	Enables a specific application on a dial peer.
<b>application (voice register global)</b>	Selects the session-level application for all dial peers associated with SIP phones.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CME system.
<b>show call application voice summary</b>	Displays information about voice applications.
<b>show dial-peer voice</b>	Displays information for dial peers.
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

## attempted-registrations size

To set the size of the table that shows a number of attempted-registrations, use the attempted-registrations command in voice register global mode. To set the size of attempted-registrations table to its default value, use the no form of this command.

**attempted-registrations size size**  
**no attempted-registrations size**

### Syntax Description

<i>size</i>	Number of entries in attempted registrations table. Size range from 0 to 50.
-------------	--

### Command Default

The default size for attempted registration table is 10.

### Command Modes

voice register global

### Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

### Usage Guidelines

Use this command to define the size of the table that stores information related to SIP phones that attempt to register with Cisco Unified CME or Cisco Unified SRST and fail. The default size of an attempted registration table is 10. The minimum size of attempted registration table is 0. Use the attempted-registration size 0 when you do not wish to store any information about phones attempting to register with the Cisco Unified CME or Cisco Unified SRST and fail. The maximum size of attempted registration table is 50.

When the current number of entries in the table is more than the new size that is being configured, system prompts the user for the following confirmation, “This will remove x old entries from the table. Proceed? Yes/No?”. The default user confirmation is “No”. Where “x” represents the number of entries that will be deleted. The old entries are classified on basis of the time-stamp of the latest register attempt made by the phone.

During rollback, the user confirmation is not sought and the target configuration is applied. If the current number of entries in the table is more than the default value of the table size, then entries in excess of the default table size are cleared before reverting to the target table size.

For example, if the configured table size is 40 and there are currently 35 entries in the table, any change in the size of the attempted registration table during rollback removes 25 oldest entries leaving only the default (10) entries before making the table size equal to the size in target configuration.

### Examples

The following example shows attempted-registrations size:

```
Router# conf t
Router(config)#voice register global
Router(config-register-global)#attempted-registrations size 15
!
```

**Related Commands**

Command	Description
<b>clear voice register attempted- registrations</b>	Allows to delete entries in attempted-registration table.
<b>show voice register attempted-registrations</b>	Displays details of phones that attempted to register and failed.

# audible-tone

To configure audible tones to indicate successful join and unjoin and login and logout from any hunt group, use the **audible-tone** command in ephone or ephone-template configuration mode. To revert to the default behavior of not playing any audible tone, use the **no** form of this command.

**audible-tone**  
**no audible-tone**

**Syntax Description** This command has no arguments or keywords.

**Command Default** By default, this feature is disabled.

**Command Modes** Ephone configuration (config-ephone)  
 Ephone-template configuration (config-ephone-template)

Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

**Usage Guidelines** Use the **audible-tone** command to set an audible tone to confirm successful join and unjoin and log in and log out from specific hunt groups.

## Example

The following example shows how to configure audible tone in ephone configuration mode:

```
Router(config)# ephone 1
Router(config-ephone)# audible-tone
```

The following example shows how to configure audible tone in ephone-template configuration mode:

```
Router(config)# ephone-template 1
Router(config-ephone-template)# audible-tone
```

Related Commands	Command	Description
	<b>ephone-hunt group</b>	Configures an ephone hunt group in Cisco Unified SRST.
	<b>voice-hunt group</b>	Configures a voice hunt group in Cisco Unified SRST.



# authenticate (voice register global)

To define the authenticate mode for SIP phones in a Cisco Unified CME or Cisco Unified SRST system, use the **authenticate** command in voice register global configuration mode. To return to the default, use the **no** form of this command.

## Cisco IOS Release 12.4(11)XJ and later releases

**authenticate** {**credential** *tag location* | **ood-refer** | **presence** | **realm** *string* | **register**}  
**no authenticate** {**credential** *tag location* | **ood-refer** | **presence** | **realm** *string* | **register**}

## Cisco IOS Release 12.4(4)T

**authenticate** [**all**] [**realm** *string*]  
**no authenticate** [**all**] [**realm** *string*]

### Syntax Description

<b>credential</b> <i>tag</i>	Number that identifies the credential file to use for out-of-dialog REFER (OOD-R) or presence authentication. Range: 1 to 5.
<i>location</i>	Name and location of the credential file in URL format. Valid storage locations are TFTP, HTTP, and flash memory.
<b>ood-refer</b>	Incoming OOD-R requests are authenticated using RFC 2617-based digest authentication.
<b>presence</b>	Incoming presence subscription requests from an external presence server are authenticated.
<b>realm</b> <i>string</i>	Realm parameter for challenge and response as specified in RFC 2617 is authenticated.
<b>register</b>	All incoming registration requests are challenged and authenticated. Valid for Cisco Unified CME only.

### Command Default

Authenticate mode is disabled.

### Command Modes

Voice register global configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4	This command was introduced.
12.4(11)XJ	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	The <b>credential</b> , <b>ood-refer</b> , <b>presence</b> , and <b>register</b> keywords were added. The <b>register</b> keyword replaced the <b>all</b> keyword.
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	The modifications to this command were integrated into Cisco IOS Release 12.4(15)T.

### Usage Guidelines

The **credential** keyword allows OOD-R and presence service to use credential files for authentication. Up to five text files containing username and password pairs can be defined and loaded into the system. The contents of these five files are mutually exclusive; the username and password pairs must be unique across all the files. For Cisco Unified CME, the username and password pairs cannot be the same ones defined for SCCP or SIP phones with the **username** command.

The **ood-refer** keyword specifies that any OOD-R request that passes authentication is authorized to setup calls between referee and refer-target if OOD-R is enabled with the **refer-ood enable** command.

The **presence** keyword enables digest authentication for external watchers. Credentials are verified against a credential file stored in flash. This applies to both OOD-R and presence. The default is to authenticate all SUBSCRIBE requests from external watchers. An external watcher that passes authentication is authorized to subscribe to presence service for all lines allowed to be watched.

The **register** keyword enables authentication for registration requests in which the MAC address of the SIP phone cannot be identified by using other methods. All incoming register requests are challenged and authenticated. The **realm** keyword with the *string* argument specifies the character string to be included in the challenge.

## Examples

The following example shows that all registration requests from SIP phones in a Cisco Unified CME system must be authenticated:

```
Router(config)# voice register global
Router(config-register-global)# mode cme
Router(config-register-global)# authenticate register
```

## Related Commands

Command	Description
<b>credential load</b>	Reloads a credential file into flash memory.
<b>mode cme</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CME system.
<b>presence-enable</b>	Allows incoming presence subscribe requests from SIP trunks.
<b>refer-ood enable</b>	Enables OOD-R processing.
<b>username (ephone)</b>	Defines a username and password for SCCP phones.
<b>username (voice register pool)</b>	Defines a username and password for authenticating SIP phones.

# b2bua

To configure a dial peer associated with an individual SIP phone in a Cisco Unified Communications Manager Express (Cisco Unified CME) environment or a group of phones in a Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) environment to point to Cisco Unity Express, use the **b2bua** command in dial-peer configuration mode. To disable B2BUA call flow on the dial peer, use the **no** form of this command.

**b2bua**  
**no b2bua**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Disabled

**Command Modes** Dial-peer configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(4)T	Cisco CME 3.4 and Cisco SIP SRST 3.4	This command was introduced.

**Usage Guidelines** Use the **b2bua** command to set the Cisco Unified CME source address as the 302 redirect contact address for all calls forwarded to Cisco Unity Express.



**Note** Use the **b2bua** command to configure Cisco SIP SRST 3.4 only after using the **allow-connections** command to enable B2BUA call flow on the SRST gateway.

## Examples

The following example shows b2bua included in the configuration for voice dial peer 1:

```
dial-peer voice 1 voip
 destination-pattern 4...
 session target ipv4:10.5.49.80
 session protocol sipv2
 dtmf-relay sip-notify
 b2bua
```

Related Commands	Command	Description
	<b>allow-connections</b>	Enables calls between SIP endpoints in a VoIP network.
	<b>dial-peer voice</b>	Defines a dial peer and enters dial-peer configuration mode.
	<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CME system.
	<b>show dial-peer voice</b>	Displays information for dial peers.

Command	Description
<b>source-address (voice register global)</b>	Identifies the IP address and port through which SIP phones communicate with a Cisco Unified CME router.
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.

# call-forward b2bua all

To enable call forwarding for a Session Initiation Protocol (SIP) back-to-back user agent (B2BUA) so that all incoming calls are forwarded to another extension, use the **callforward b2bua all command** in voice register dn or voice register pool configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward b2bua all** *directory-number*  
**no call-forward b2bua all**

## Syntax Description

<i>directorynumber</i>	Telephone number to which calls are forwarded. Represents a fully qualified E.164 number. Maximum length of the telephone number is 32.
------------------------	---

## Command Default

Disabled (no incoming call forwarding to another extension).

## Command Modes

Voice register dn configuration  
Voice register pool configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

## Usage Guidelines

You can apply call forward to an individual SIP extension (voice register dn) or to the SIP phone on which the extension appears (voice register pool). Use this command in voice register pool configuration mode to enable call forwarding for all extensions on a SIP phone. Use this command in voice register dn configuration mode to enable call forwarding for an individual SIP extension.

If information is configured in both voice register dn and voice register pool mode, the information under voice register dn mode takes precedence.

We recommend that you do not use this command with hunt groups. If the command is used, consider removing the phone from any assigned hunt groups unless you want to forward calls to all phones in the hunt group.

The **call-forward b2bua all** command takes precedence over the **call-forward b2bua busy** and **call-forward b2bua noan** commands.



**Note** This command in voice register dn configuration mode is not commonly used for Cisco Unified SIP SRST.

## Examples

The following example shows how to forward all incoming calls to extension 5001 on directory number 4, to extension 5005.

```
Router(config)# voice register dn 4
```

```
Router(config-register-dn)# number 5001
Router(config-register-dn)# call-forward b2bua all 5005
```

The following example shows how to forward all incoming calls for extension 5001 on pool number 4, to extension 5005.

```
Router(config)# voice register pool 4
Router(config-register-pool)# number 5001
Router(config-register-pool)# call-forward b2bua all 5005
```

## Related Commands

Command	Description
<b>call-forward b2bua busy</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to a busy extension are forwarded to another extension.
<b>call-forward b2bua mailbox</b>	Controls the specific voice-mail box selected in a voice-mail system at the end of a call forwarding exchange.
<b>call-forward b2bua noan</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that does not answer after a configured amount of time are forwarded to another extension.
<b>call-forward b2bua unreachable</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that is not registered in Cisco Unified CME are forwarded to another extension.
<b>call-waiting (voice register pool)</b>	Enables call waiting on a SIP phone.
<b>number (voice register dn)</b>	Associates an extension number with a voice register dn.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# call-forward b2bua busy

To enable call forwarding for a Session Initiation Protocol (SIP) back-to-back user agent (B2BUA) so that incoming calls to a busy extension are forwarded to another extension, use the **callforward b2bua busy** command in voice register dn or voice register pool configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward b2bua busy** *directory-number*  
**no call-forward b2bua busy**

## Syntax Description

<i>directorynumber</i>	Telephone number to which calls are forwarded. Represents a fully qualified E.164 number. Maximum length of the telephone number is 32.
------------------------	---

## Command Default

Disabled (no incoming calls to a busy extension are forwarded).

## Command Modes

Voice register dn configuration  
 Voice register pool configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

## Usage Guidelines

The call-forward b2bua busy response is triggered when a call is sent to a SIP phone using a VoIP dial peer and a busy response is received back from the phone. This command functions only with phones that are registered to a Cisco Unified SIP SRST or Cisco Unified CME router.

You can apply call forward to an individual SIP extension (voice register dn) or to the SIP phone on which the extension appears (voice register pool). Use this command in voice register pool configuration mode to enable call forwarding for all extensions on a SIP phone. Use this command in voice register dn configuration mode to enable call forwarding for a specific extension. If information is configured in both voice register dn and voice register pool mode, the information under voice register dn takes precedence.

We recommend that you do not use this command with hunt groups. If the command is used, consider removing the phone from any assigned hunt groups, unless you want to forward calls to all phones in the hunt group.

The **call-forward b2bua all** command takes precedence over the **call-forward b2bua busy** and **call-forward b2bua noan** commands.



**Note** This command in voice register dn configuration mode is not commonly used for Cisco Unified SIP SRST.

### Cisco Unified CME

Call forward busy can also get invoked if a number is unreachable but the **call forward b2bua unreachable** command is not configured.

## Examples

The following example shows how to forward calls from extension 5001 in pool 4 to extension 5005 when extension 5001 is busy.

```
Router(config)# voice register pool 4
Router(config-register-pool)# number 5001
Router(config-register-pool)# call-forward b2bua busy 5005
```

## Related Commands

Command	Description
<b>call-forward b2bua all</b>	Enables call forwarding for a SIP B2BUA so that all incoming calls are forwarded to another extension.
<b>call-forward b2bua mailbox</b>	Controls the specific voice-mail box selected in a voice-mail system at the end of a call forwarding exchange.
<b>call-forward b2bua noan</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that does not answer after a configured amount of time are forwarded to another extension.
<b>call-forward b2bua unreachable</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that is not registered in Cisco Unified CME are forwarded to another extension.
<b>call-waiting (voice register pool)</b>	Enables call waiting on a SIP phone.
<b>number (voice register dn)</b>	Associates an extension number with a voice register dn.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.



# call-forward b2bua mailbox

To control the specific voice-mail box selected in a voice-mail system at the end of a call forwarding exchange, use the **callforward b2bua mailbox command** in voice register dn or voice register pool configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward b2bua mailbox** *directory-number*  
**no call-forward b2bua mailbox**

<b>Syntax Description</b>	<i>directorynumber</i>	Telephone number to which calls are forwarded when the forwarded destination is busy or does not answer. Represents a fully qualified E.164 number. Maximum length of the telephone number is 32.
---------------------------	------------------------	---

**Command Default** Disabled (no voice-mail box is selected for call forwarding).

**Command Modes**  
Voice register dn configuration  
Voice register pool configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

**Usage Guidelines**  
Use this command to denote the voice-mail box to use at the end of a chain of call forwards to busy or no answer destinations. It can be used to forward calls to a voice-mail box that has a different number than the forwarding extension. A sample of this would be in the case of a shared voice-mail box, for instance one between a manager and her assistant. This command functions only with phones that are registered to a Cisco Unified CME or Cisco Unified SIP SRST router.

If information is configured in both voice register dn and voice register pool mode, the information under voice register dn takes precedence.

It is recommended that you do not use the **call-forward b2bua mailbox** command with hunt groups. If the command is used, consider removing the phone from any assigned hunt groups, unless you want to forward calls to all phones in the hunt group.

This command is used in conjunction with the **call-forward b2bua all**, **call-forward b2bua busy**, and **call-forward b2bua noan** commands.



**Note** This command in voice register dn configuration mode is not commonly used for Cisco Unified SIP SRST.

## Examples

The following example shows how to forward calls to extension 5005 if an incoming call is forwarded to extension 5001 on pool number 4 and extension 5001 is busy or does not answer.

```
Router(config)# voice register pool 4
```

```
Router(config-register-pool)# number 5001
Router(config-register-pool)# call-forward b2bua mailbox 5005
```

**Related Commands**

Command	Description
<b>call-forward b2bua all</b>	Enables call forwarding for a SIP B2BUA so that all incoming calls are forwarded to another extension.
<b>call-forward b2bua busy</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to a busy extension are forwarded to another extension.
<b>call-forward b2bua noan</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that does not answer after a configured amount of time are forwarded to another extension.
<b>call-forward b2bua unreachable</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that is not registered in Cisco Unified CME are forwarded to another extension.
<b>call-waiting (voice register pool)</b>	Enables call waiting on a SIP phone.
<b>number (voice register dn)</b>	Associates an extension number with a voice register dn.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# call-forward b2bua noan

To enable call forwarding for a Session Initiation Protocol (SIP) back-to-back user agent (B2BUA) so that incoming calls to an extension that does not answer after a configured amount of time are forwarded to another extension, use the **callforward b2bua noan command** in voice register dn or voice register pool configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward b2bua noan** *directory-number* **timeout** *seconds*  
**no call-forward b2bua noan**

## Syntax Description

<i>directorynumber</i>	Telephone number to which calls are forwarded. Represents a fully qualified E.164 number. Maximum length of the telephone number is 32.
<b>timeout</b> <i>seconds</i>	Number of seconds that a call can ring with no answer before the call is forwarded to another extension. Range is 3 to 60000. Default is 20.

## Command Default

Disabled (no incoming calls to an extension that does not answer are forwarded).

## Command Modes

Voice register dn configuration  
 Voice register pool configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

## Usage Guidelines

This command functions only with phones that are registered to a Cisco Unified SIP SRST or Cisco Unified CME router. You can apply call forward to an individual SIP extension (voice register dn) or to the SIP phone on which the extension appears (voice register pool). Use this command in voice register pool configuration mode to enable call forwarding for all extensions on a SIP phone. Use this command in voice register dn configuration mode to enable call forwarding for a specific extension.

If information is configured in both voice register dn and voice register pool mode, the information under voice register dn takes precedence.

We recommend that you do not use this command with hunt groups. If the command is used, consider removing the phone from any assigned hunt groups, unless you want to forward calls to all phones in the hunt group.

The **call-forward b2bua all** command takes precedence over the **call-forward b2bua busy** and **call-forward b2bua noan** commands.



**Note** This command in voice register dn configuration mode is not commonly used for Cisco Unified SIP SRST.

## Examples

The following example shows how to forward calls to extension 5005 when extension 5001 on pool number 4 is unanswered. The timeout before the call is forwarded to extension 5005 is 10 seconds.

**call-forward b2bua noan**

```

Router(config)# voice register pool 4
Router(config-register-pool)# number 5001
Router(config-register-pool)# call-forward b2bua noan 5005 timeout 10

```

**Related Commands**

Command	Description
<b>call-forward b2bua all</b>	Enables call forwarding for a SIP B2BUA so that all incoming calls are forwarded to another extension.
<b>call-forward b2bua busy</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to a busy extension are forwarded to another extension.
<b>call-forward b2bua mailbox</b>	Controls the specific voice-mail box selected in a voice-mail system at the end of a call forwarding exchange.
<b>call-forward b2bua unreachable</b>	Enables call forwarding for a SIP B2BUA so that incoming calls to an extension that is not registered in Cisco Unified CME are forwarded to another extension.
<b>call-waiting (voice register pool)</b>	Enables call waiting on a SIP phone.
<b>number (voice register dn)</b>	Associates an extension number with a voice register dn.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# call-forward busy (call-manager-fallback)

To configure call forwarding to another number when a Cisco IP phone is busy, use the **call-forward busy** command in call-manager-fallback configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward busy** *directory-number*  
**no call-forward busy** [*directory-number*]

<b>Syntax Description</b>	<i>directory-number</i>	Directory number representing a fully qualified E.164 number. This number can contain “.” wildcard characters that correspond to the right-justified digits in the directory number extension.
---------------------------	-------------------------	--

<b>Command Default</b>	No default behavior or values.
------------------------	--------------------------------

<b>Command Modes</b>	Call-manager-fallback configuration
----------------------	-------------------------------------

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.2(2)XT	Cisco Unified SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(8)T	Cisco Unified SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco Unified SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco Unified SRST 2.1	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

<b>Usage Guidelines</b>	The <b>call-forward busy</b> command configures call forwarding to another number when a Cisco IP phone is busy. The call forwarding mechanism is applied globally to all phones that register during fallback.
-------------------------	---

## Examples

The following example forwards calls to extension number 5005 when an incoming call reaches a busy IP phone extension number:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# call-forward busy 5005
```

The following example transforms an extension number for call forwarding when the extension number is busy. The **call-forward busy** command has an argument of 50., which prepends the digits 50 to the last two digits of the called extension. The resulting extension is the number to which incoming calls are forwarded when the original extension number is busy. For instance, an incoming

call to the busy extension 6002 will be forwarded to extension 5002, and an incoming call to the busy extension 3442 will be forwarded to extension 5042.

```
Router(config)# call-manager-fallback
```

```
Router(config-cm-fallback)# call-forward busy 50..
```



**Note** You can forward an incoming VoIP call only to destination numbers local to the router. VoIP calls cannot be forwarded to an alternate (on-net) VoIP destination.

#### Related Commands

Command	Description
<b>call-forward noan</b>	Configures call forwarding to another number when no answer is received from the Cisco IP phone.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

## call-forward noan (call-manager-fallback)

To configure call forwarding to another number when no answer is received from a Cisco IP phone, use the **call-forward noan** command in call-manager-fallback configuration mode. To disable call forwarding, use the **no** form of this command.

**call-forward noan** *directory-number* **timeout** *seconds*  
**no call-forward noan** [*directory-number*]

### Syntax Description

<i>directory-number</i>	Directory number representing a fully qualified E.164 number or a local extension number. This number can contain "." wildcard characters that correspond to the right-justified digits in the directory number extension.
<b>timeout</b>	Sets the ringing no answer timeout duration, which is the waiting time (in seconds) before the call is forwarded to another phone.
<i>seconds</i>	Time (in seconds) before call forwarding starts. The range is from 3 to 60000.

### Command Default

No default behavior or values.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.1	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

### Usage Guidelines

The **call-forward noan** command configures call forwarding to another number when no answer is received from a Cisco IP phone. The call-forwarding mechanism is applied globally to all phones that register during fallback. The **timeout** keyword sets the waiting time before the call is forwarded to another phone. The time is set in seconds. The range is from 3 to 60,000 seconds.

### Examples

The following example shows how to set call forwarding of incoming calls to directory number 5005 when line 1, directory number 5001, does not answer. The timeout period before the call is forwarded to directory number 5005 is set for 10 seconds.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# call-forward noan 5005 timeout 10
```

The following example shows how to set call forwarding of incoming calls to an available extension in the 50xx bank of extensions when line 1, directory number 5001, does not answer. The **timeout** period before the call is forwarded to directory number 5005 is set for 10 seconds.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# call-forward noan 50.. timeout 10
```



**Note** An incoming VoIP call can be forwarded only to destination numbers local to the router. VoIP calls cannot be forwarded to an alternate (on-net) VoIP destination.

#### Related Commands

Command	Description
<b>call-forward busy</b>	Configures call forwarding to another number when a Cisco IP phone is busy.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.



# call-forward pattern (call-manager-fallback)

To specify a pattern for calling-party numbers that are able to support the ITU-T H.450.3 standard for call forwarding, use the **call-forward pattern** command in call-manager-fallback configuration mode. To remove the pattern, use the **no** form of this command.

**call-forward pattern** *pattern*  
**no call-forward pattern** *pattern*

<b>Syntax Description</b>	<table> <tr> <td><i>pattern</i></td><td>String that consists of one or more digits and wildcard markers or dots (.) to define a specific pattern. Calling parties that match a defined pattern use the H.450.3 standard if they are forwarded. A pattern of .T specifies the H.450.3 forwarding standard for all incoming calls.</td></tr> </table>	<i>pattern</i>	String that consists of one or more digits and wildcard markers or dots (.) to define a specific pattern. Calling parties that match a defined pattern use the H.450.3 standard if they are forwarded. A pattern of .T specifies the H.450.3 forwarding standard for all incoming calls.
<i>pattern</i>	String that consists of one or more digits and wildcard markers or dots (.) to define a specific pattern. Calling parties that match a defined pattern use the H.450.3 standard if they are forwarded. A pattern of .T specifies the H.450.3 forwarding standard for all incoming calls.		

<b>Command Default</b>	No default behavior or values.
------------------------	--------------------------------

<b>Command Modes</b>	Call-manager-fallback configuration
----------------------	-------------------------------------

<b>Command History</b>	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

<b>Usage Guidelines</b>	<p>The pattern match in this command is against the phone number of the calling party. When a directory number has forwarded its calls and an incoming call is received for that number, the SRST router sends an H.450.3 response back to the original calling party to request that the call be placed again using the forward-to destination.</p>
-------------------------	--

Calling numbers that do not match the patterns defined with this command are forwarded using Cisco-proprietary call forwarding for backward compatibility.

## Examples

The following example specifies that all 4-digit directory numbers beginning with 4 should use the H.450.3 standard whenever they are forwarded:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# call-forward pattern 4...
```

The following example forwards all calls using the H.450.3 standard:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# call-forward pattern .T
```

<b>Related Commands</b>	Command	Description
	<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

# call-manager-fallback

To enable Cisco Unified SRST support and enter call-manager-fallback configuration mode, use the **call-manager-fallback** command in global configuration mode. To disable Cisco Unified SRST support, use the **no** form of this command.

**call-manager-fallback**  
**no call-manager-fallback**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values.

**Command Modes** Global configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.1	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Examples** The following example shows how to enter call-manager-fallback configuration mode:

```
Router(config)# call-manager-fallback
```

The resulting router prompt is Router(config-cm-fallback)# .

Related Commands	Command	Description
	<b>access-code</b>	Configures trunk access codes for each type of line so that the Cisco IP phones can access the trunk lines.
	<b>alias</b>	Provides a mechanism for servicing calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback.

Command	Description
<b>call-forward busy</b>	Configures call forwarding to another number when a Cisco IP phone is busy.
<b>call-forward noan</b>	Configures call forwarding to another number when no answer is received from a Cisco IP phone.
<b>cor</b>	Configures COR on the dial peers associated with directory numbers.
<b>default-destination</b>	Assigns a default destination number for incoming telephone calls.
<b>dialplan-pattern</b>	Creates a global prefix that can be used to expand the abbreviated extension numbers into fully qualified E.164 numbers.
<b>huntstop</b>	Sets huntstop for the dial peers associated with Cisco IP phone lines.
<b>ip source-address</b>	Enables the router to receive messages from Cisco IP phones through the specified IP addresses and ports.
<b>keepalive</b>	Configures the time interval between sending keepalive messages to the router used by Cisco IP phones.
<b>max-dn</b>	Sets the maximum number of directory numbers or virtual voice ports that can be supported by the router.
<b>max-ephone</b>	Configures the maximum number of Cisco IP phones that can be supported by the router.
<b>reset</b>	Resets Cisco IP phones.
<b>timeouts interdigit</b>	Configures the interdigit timeout value for all Cisco IP phones attached to the router.
<b>transfer-pattern</b>	Allows transfer of telephone calls by Cisco IP phones to other phone numbers.
<b>translate</b>	Applies a translation rule to modify the phone number dialed by any Cisco IP phone user during Cisco Unified Communications Manager fallback.
<b>voicemail</b>	Configures the telephone number that is speed-dialed when the message button on a Cisco IP phone is pressed.

# clear voice moh-group statistics

To clear the display of MOH subsystem statistics information and reset the packet counters, use the **clear voice moh-group statistics** command in privileged EXEC mode.

**clear voice moh-group statistics**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC (#)

## Command History

Cisco IOS Release	yCisco Product	Modification
15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.
15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

## Usage Guidelines

Use this command to clear the display of MOH subsystem statistics information displayed by the **show voice moh-group statistics** command.

We recommend that the **clear voice moh-group statistics** should be used once every two years to reset the packet counters. Each packet counter is of 32 bit size limit and the largest count a packet counter can hold is 4294967296 intervals. This means that with 20 milliseconds packet interval (for G.711), the counters will restart from 0 any time after 2.72 years (2 years and 8 months).

## Examples

```
Router# clear voice moh-group statistics
All moh group stats are cleared
```

## Related Commands

Command	Description
show voice moh-group statistics	Displays the MOH subsystem statistics information
show voice moh-group	Displays the MOH groups configured

# codec g722-64k

To specify that the G.722 codec should be used for Cisco Unified Survivable Remote Site Telephony (SRST) mode, use the **codec g722-64k** command in call-manager-fallback configuration mode. To disable this command and restore G.711 as the supported codec for SRST mode, use the **no** form of this command.

**codec g722-64k**  
**no codec g722-64k**

## Syntax Description

This command has no arguments or keywords.

## Command Default

If the **codec g722-64k** command is not enabled, the G.711 codec is the default for SRST mode.

## Command Modes

Call-manager-fallback configuration (config-cm-fallback)

## Command History

Release	Cisco Products	Modification
15.0(1)M	Cisco Unified SRST 8.0 Cisco Unified SIP SRST 8.0	This command was introduced.

## Usage Guidelines

The G.722 codec should be used for the SRST codec provided the phone supports that codec capability. For phones that do not support G.722 codec, the phones will fall back to the G.711 codec.

## Examples

The following example shows how to enable support for the G.722 codec for SRST mode:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# codec g722-64k
```

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enters call-manager-fallback configuration mode.

# conference max-length

To allow Cisco Unified SRST conferencing only if the number of dialed digits are within the maximum length limit, use the **conference max-length** command. To remove the configuration, use the **no** form of this command.

**conference max-length** <value>  
**no conference max-length**

Syntax Description	<i>value</i> Maximum number of digits that can be dialed. The range is from 3 to 16.		
Command Default	No default value is defined for conferencing.		
Command Modes	voice register pool (config-register-pool)		
Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.
Usage Guidelines	Use the <b>conference max-length</b> command to configure, the Cisco Unified SRST to allow conferencing, only if the dialed digits are within the maximum length limit.		

## Example

The following example shows how to configure the maximum number of digits that can be dialed to make a conference call:

```
Router(config)# voice register pool 1
Router(config-register-pool)# conference max-length 4
```

<b>Related Commands</b>	<table> <tr> <th>Command</th><th>Description</th></tr> <tr> <td><b>conference-pattern blocked</b></td><td>Blocks extensions on an ephone or voice register pool from making conference calls to patterns defined in the <b>transfer-pattern</b> command.</td></tr> <tr> <td><b>conference transfer-pattern</b></td><td>Allows to conference the transferred calls to phones within the local Cisco Unified SRST network.</td></tr> <tr> <td><b>transfer max-length</b></td><td>Allows the transfer of calls to phones within the local Cisco Unified SRST network.</td></tr> <tr> <td><b>transfer-pattern (call-manager fallback)</b></td><td>Allows the transfer of calls to phones outside the local Cisco Unified SRST network.</td></tr> </table>	Command	Description	<b>conference-pattern blocked</b>	Blocks extensions on an ephone or voice register pool from making conference calls to patterns defined in the <b>transfer-pattern</b> command.	<b>conference transfer-pattern</b>	Allows to conference the transferred calls to phones within the local Cisco Unified SRST network.	<b>transfer max-length</b>	Allows the transfer of calls to phones within the local Cisco Unified SRST network.	<b>transfer-pattern (call-manager fallback)</b>	Allows the transfer of calls to phones outside the local Cisco Unified SRST network.
Command	Description										
<b>conference-pattern blocked</b>	Blocks extensions on an ephone or voice register pool from making conference calls to patterns defined in the <b>transfer-pattern</b> command.										
<b>conference transfer-pattern</b>	Allows to conference the transferred calls to phones within the local Cisco Unified SRST network.										
<b>transfer max-length</b>	Allows the transfer of calls to phones within the local Cisco Unified SRST network.										
<b>transfer-pattern (call-manager fallback)</b>	Allows the transfer of calls to phones outside the local Cisco Unified SRST network.										

# conference-pattern blocked

To prevent extensions on an ephone or a voice register pool from initiating a conference to external numbers, use the **conference-pattern blocked** command. Note that the **conference-pattern blocked** command does not impact call transfer functions. To remove the configuration, use the **no** form of this command.

**conference-pattern blocked**  
**no conference-pattern blocked**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values.

**Command Modes** Ephone configuration (config-ephone)  
 Voice register pool configuration (config-register-pool)

Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

**Usage Guidelines** Use the **conference-pattern blocked** command to prevent specific extensions from making conference calls to patterns generally allowed through the **transfer-pattern** command.

## Example

This example shows how this command prevents extensions from making conference calls to patterns using the **transfer-pattern** command.

```
Router(config)# voice regstiter pool 1
Router(config-register-pool)# conference-pattern blocked
```

Related Commands	Command	Description
	<b>conference max-length</b>	Allows the conferences only if the dialed digits are within the maximum length limit.
	<b>conference transfer-pattern</b>	Allows to conference the transferred calls to phones within the local Cisco Unified SRST network.
	<b>transfer-pattern blocked</b>	Block extensions on an ephone or voice register pool from making transferring calls to patterns defined in the <b>conference pattern-blocked</b> command.
	<b>transfer-pattern (call-manager fallback)</b>	Allows the transfer of calls to phones outside the local Cisco Unified SRST network.

## conference transfer-pattern (call-manager-fallback)

To apply transfer patterns to a conference call using conference softkeys or feature buttons in Cisco Unified SRST, use the **conference transfer-pattern** command in call-manager-fallback configuration mode. To disable the transfer patterns, use the **no** form of this command.

**conference transfer-pattern**  
**no conference transfer-pattern**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Default</b>	Transfer patterns do not apply to conference calls.
------------------------	---

<b>Command Modes</b>	Call-manager-fallback configuration (config-cm-fallback)
----------------------	--

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	15.3(2)T	This command was introduced.

<b>Usage Guidelines</b>	There is no check for the conference numbers for call conferencing. To apply transfer patterns for call conferencing, use the <b>conference transfer-pattern</b> command.
-------------------------	---

When both the **transfer-pattern** and **conference transfer-pattern** commands are configured and dialed digits match the configured transfer pattern, conference calls are allowed. However, when the dialed digits do not match any of the configured transfer pattern, the conference call is blocked.

<b>Examples</b>	The following example applies transfer patterns to conference calls:
-----------------	--

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# transfer-pattern 1234
Router(config-cm-fallback)# conference transfer-pattern
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>call-manager-fallback</b>	Enters call-manager-fallback configuration mode to enable Cisco Unified SRST support.
	<b>transfer-pattern</b>	Allows Cisco Unified IP phones to transfer telephone calls from callers outside the local IP network to another Cisco Unified IP phone.



## cor (call-manager-fallback)

To configure a class of restriction (COR) on the dial peers associated with directory numbers, use the **cor** command in call-manager-fallback configuration mode. To disable a COR associated with directory numbers, use the **no** form of this command.

**cor** {**incoming** | **outgoing**} *cor-list-name* [{*cor-list-number starting-number-ending-number* | **default**}]  
**no cor** *cor-list-name cor-list-number*

Syntax Description		
<b>incoming</b>		COR list to be used by incoming dial peers.
<b>outgoing</b>		COR list to be used by outgoing dial peers.
<i>cor-list-name</i>		COR list name.
<i>cor-list-number</i>		COR list identifier. The maximum number of COR lists that can be created is 20, comprised of incoming or outgoing dial peers. The first six COR lists are applied to a range of directory numbers. The directory numbers that do not have a COR configuration are assigned to the default COR list, provided that a default COR list has been defined.
<i>starting-number - ending-number</i>		Directory number range; for example, 2000 - 2025.
<b>default</b>		Instructs the COR list to assume behavior according to a predefined default COR list.

**Command Default** No default behavior or values.

**Command Modes** Call-manager-fallback configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers. The <b>default</b> keyword was added.
	12.3(11)T	Cisco SRST 3.2	The maximum number of COR lists that can be created was increased to 20.

## Usage Guidelines

The **cor** command sets the dial-peer COR parameter for dial peers associated with the directory numbers created during Cisco Unified Communications Manager fallback. A list-based mechanism is provided to assign COR to specific sets of directory numbers during Cisco Unified Communications Manager fallback. The COR functionality provides the ability to deny certain call attempts on the basis of the incoming and outgoing class of restrictions provisioned on the dial peers. This functionality provides flexibility in network design, allows users to block calls (for example, calls to 900 numbers), and applies different restrictions to call attempts from different originators.

COR is used to specify which incoming dial peer can use which outgoing dial peer to make a call. Each dial peer can be provisioned with an incoming and an outgoing COR list.

A default COR is assigned to the directory numbers that do not match any COR list number or number range. The assigned COR is invoked for the dial peers automatically created for each directory number during Cisco Unified Communications Manager fallback registration.

You can have up to 20 COR lists for each incoming and outgoing call. A default COR is assigned to directory numbers that do not match any COR list numbers or number ranges. An assigned COR is invoked for the dial peers and created for each directory number automatically during Communications Manager fallback registration.

If a COR is applied on an incoming dial peer (for incoming calls) and it is a superset or is equal to the COR applied to the outgoing dial peer (for outgoing calls), the call will go through. Voice ports determine whether a call is considered to be incoming or outgoing. If you hook up a phone to an FXS port on a Cisco Unified SRST router and try to make a call from that phone, the call will be considered an incoming call to the router and voice port. If you make a call to the FXS phone, the call will be considered an outgoing call.

By default, an incoming call leg has the highest COR priority. The outgoing COR list has the lowest. If there is no COR configuration for incoming calls on a dial peer, you can make a call from a phone attached to the dial peer, so that the call will go out of any dial peer regardless of the COR configuration on that dial peer. Incoming and outgoing lists are shown in [Table 1: Combinations of COR List and Results, on page 56](#).

**Table 1: Combinations of COR List and Results**

COR List on Incoming Dial Peer	COR List on Outgoing Dial Peer	Result
No COR	No COR	Call will succeed.
No COR	COR list applied for outgoing calls	Call will succeed. By default, the incoming dial peer has the highest COR priority when no COR is applied. If you apply no COR for an incoming call leg to a dial peer, the dial peer can make a call out of any other dial peer regardless of the COR configuration on the outgoing dial peer.
COR list applied for incoming calls	No COR	Call will succeed. By default, the outgoing dial peer has the lowest priority. Because there are some COR configurations for incoming calls on the incoming or originating dial peer, it is a superset of the outgoing call's COR configuration for the outgoing or terminating dial peer.

COR List on Incoming Dial Peer	COR List on Outgoing Dial Peer	Result
COR list applied for incoming calls (superset of COR list applied for outgoing calls on the outgoing dial peer)	COR list applied for outgoing calls (subsets of COR list applied for incoming calls on the incoming dial peer)	Call will succeed. The COR list for incoming calls on the incoming dial peer is a superset of the COR list for outgoing calls on the outgoing dial peer.
COR list applied for incoming calls (subset of COR list applied for outgoing calls on the outgoing dial peer)	COR list applied for outgoing calls (supersets of COR list applied for incoming calls on the incoming dial peer)	Call will not succeed. The COR list for incoming calls on the incoming dial peer is not a superset of the COR list for outgoing calls on the outgoing dial peer.

## Examples

The following example shows how to set the dial-peer COR parameter for incoming calls to Cisco IP phone dial peers and directory numbers created during Cisco Unified Communications Manager fallback:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# cor incoming LockforPhoneC 1 5002 - 5010
```

The following example shows how to set the dial-peer COR parameter for outgoing calls to Cisco IP phone dial peers and directory numbers created during fallback:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# cor outgoing LockforPhoneC 1 5010 - 5020
```

The following example shows how to set the dial-peer COR parameter for incoming calls to Cisco IP phone dial peers and directory numbers in the default COR list:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# cor incoming LockforPhoneC default
```

The following example shows how sub- and super-COR sets are created. First, a custom dial-peer COR is created with names declared under it:

```
Router(config)# dial-peer cor custom
Router(config-dp-cor)# name 911
Router(config-dp-cor)# name 1800
Router(config-dp-cor)# name 1900
Router(config-dp-cor)# name local_call
```

In the following configuration examples, COR lists are created and applied to the dial peer.

```
Router(config)# dial-peer cor list call1911
Router(config-dp-corlist)# member 911
Router(config)# dial-peer cor list call1800
Router(config-dp-corlist)# member 1800
Router(config)# dial-peer cor list call1900
Router(config-dp-corlist)# member 1900
Router(config)# dial-peer cor list calllocal
Router(config-dp-corlist)# member local_call
Router(config)# dial-peer cor list engineering
```

```

Router(config-dp-corlist)# member 911
Router(config-dp-corlist)# member local_call
Router(config)# dial-peer cor list manager
Router(config-dp-corlist)# member 911
Router(config-dp-corlist)# member 1800
Router(config-dp-corlist)# member 1900
Router(config-dp-corlist)# member local_call
Router(config)# dial-peer cor list hr
Router(config-dp-corlist)# member 911
Router(config-dp-corlist)# member 1800
Router(config-dp-corlist)# member local_call

```

In the example below, five dial peers are configured for destination numbers 734...., 1800....., 1900....., 316...., and 911. A COR list is applied to each of the dial peers.

```

Router(config)# dial-peer voice 1 voip
Router(config-dial-peer)# destination pattern 734....
Router(config-dial-peer)# session target ipv4:1.1.1.1
Router(config-dial-peer)# cor outgoing calllocal
Router(config)# dial-peer voice 2 voip
Router(config-dial-peer)# destination pattern 1800.....
Router(config-dial-peer)# session target ipv4:1.1.1.1
Router(config-dial-peer)# cor outgoing call1800
Router(config)# dial-peer voice 3 pots
Router(config-dial-peer)# destination pattern 1900.....
Router(config-dial-peer)# port 1/0/0
Router(config-dial-peer)# cor outgoing call1900
Router(config)# dial-peer voice 4 pots
Router(config-dial-peer)# destination pattern 911
Router(config-dial-peer)# port 1/0/1
Router(config-dial-peer)# cor outgoing call911
Router(config)# dial-peer voice 5 pots
Router(config-dial-peer)# destination pattern 316....
Router(config-dial-peer)# port 1/1/0
! No cor is applied.

```

Finally, the COR list is applied to the individual phone numbers.

```

Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-conferences 8
Router(config-cm-fallback)# cor incoming engineering 1 1001 - 1001
Router(config-cm-fallback)# cor incoming hr 2 1002 - 1002
Router(config-cm-fallback)# cor incoming manager 3 1003 - 1008

```

The example configuration allows for the following:

- Extension 1001 to call 408... numbers, 911 and 316....
- Extension 1002 to call 408..., 1800 numbers, 911 and 316....
- Extension 1003 through 1008 to call all of the possible Cisco Unified SRST router numbers
- All extensions to call 316....

#### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.
<b>corlist-incoming</b>	Specifies the COR list to be used when a specified dial peer acts as the incoming dial peer.

Command	Description
<b>corlist-outgoing</b>	Specifies the COR list to be used by outgoing dial peers.
<b>dial-peer cor list</b>	Defines a COR list name.

## cor (voice register pool)

To configure a class of restriction (COR) on the VoIP dial peers associated with directory numbers, use the **cor command** in voice register pool configuration mode. To disable a COR associated with directory numbers, use the **no** form of this command.

**cor** {**incoming** | **outgoing**} *cor-list-name* {*cor-list-number starting-number [- ending-number]* | **default** }  
**no cor** {**incoming** | **outgoing**} *cor-list-name cor-list-name* {*cor-list-number starting-number [- ending-number]* | **default**}

### Syntax Description

<b>incoming</b>	COR list to be used by incoming dial peers.
<b>outgoing</b>	COR list to be used by outgoing dial peers.
<i>cor-list-name</i>	COR list name.
<i>cor-list-number</i>	COR list identifier.
<i>starting-number</i>	Start of a directory number range, if an ending number is included. Can also be a standalone number.
<b>-</b>	(Optional) Indicator that a full range is configured.
<i>ending-number</i>	(Optional) End of a directory number range.
<b>default</b>	Instructs the COR list to assume behavior according to a predefined default COR list.

### Command Default

None

### Command Modes

Voice register pool configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco Communications Manager Express (Cisco CME).

### Usage Guidelines

The **cor** command sets the dial-peer COR parameter for dynamically created VoIP dial peers. A list-based mechanism assigns COR parameters to specific set of number ranges. The COR functionality provides the ability to deny certain call attempts on the basis of the incoming and outgoing class of restrictions provisioned on the dial peers. This functionality provides flexibility in network design, allows users to block calls (for example, calls to 900 numbers), and applies different restrictions to call attempts from different originators.

COR specifies which incoming dial peer can use which outgoing dial peer to make a call. Each dial peer can be provisioned with an incoming and an outgoing COR list.

A default COR is assigned to the directory numbers that do not match any COR list number or number range. During Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) registration, a dial peer is created and that dial peer includes a default COR value. The **cor** command allows you to change the automatically selected default.

In dial-peer configuration mode, build your COR list and add members. Then in voice register pool configuration mode, use the **cor** command to apply the name of the dial-peer COR list.

You can have up to four COR lists for the Cisco Unified SIP SRST configuration, comprised of incoming or outgoing dial peers. The first four COR lists are applied to a range of phone numbers. The phone numbers that do not have a COR list configuration are assigned to the default COR list, providing that a default COR list has been defined.



**Note** Configure the **id** (voice register pool) command before any other voice register pool commands, including the **cor** command. The **id** command identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.

## Examples

The following is sample output from the **show running-config** command:

```
..
voice register pool 1
  id mac 0030.94C2.A22A
  preference 5
  cor incoming call91 1 91011
  translate-outgoing called 1
  proxy 10.2.161.187 preference 1 monitor probe icmp-ping
  alias 1 94... to 91011 preference 8
  voice-class codec 1
.
.
.
dial-peer cor custom
  name 95
  name 94
  name 91
!
dial-peer cor list call91
  member 91
!
dial-peer voice 91500 pots
  corlist incoming call91
  corlist outgoing call91
  destination-pattern 91500
  port 1/0/0
.
.
.
```

## Related Commands

Command	Description
<b>dial-peer cor custom</b>	Specifies that named CORs apply to dial peers.
<b>dial-peer cor list</b>	Defines a COR list name.

Command	Description
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>member (dial-peer cor list)</b>	Adds a member to a dial-peer COR list.
<b>name (dial-peer custom cor)</b>	Provides a name for a custom COR.
<b>show dial-peer voice</b>	Displays information for voice dial peers.
<b>voice register pool</b>	Enables Cisco Unified SIP SRST voice register pool configuration commands.



# credentials

To enter credentials configuration mode to configure a certificate for a Cisco Unified CME CTL provider or for Cisco Unified SRST router communication to Cisco Unified Communications Manager, use the **credentials** command in global configuration mode. To set all commands in credentials configuration mode to the default of nonsecure, use the **no** form of this command.

**credentials**  
**no credentials**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Credentials are not provided.

**Command Modes** Global configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.3(14)T	Cisco SRST 3.3	This command was introduced for Cisco Unified SRST.
	12.4(4)XC	Cisco Unified CME 4.0	This command was introduced for Cisco Unified CME.
	Cisco IOS XE Fuji Release, 16.7.1	Unified SRST 12.1	This command was introduced for Unified SRST support on Cisco 4000 Series Integrated Services Router.
	Cisco IOS XE Dublin 17.10.1a	Cisco Unified SRST 14.3	Introduced support for YANG models.

**Usage Guidelines** This command is used to configure credentials service for Cisco Unified CME and Cisco Unified SRST.

## Cisco Unified CME

This command is used with Cisco Unified CME phone authentication to configure a CTL provider on each Cisco Unified CME router on which the CTL client is not running. That is, if there is a primary and a secondary Cisco Unified CME router and the CTL client is running on the primary router, a CTL provider must be configured on the secondary router, and vice versa. If the CTL client is running on a router that is not a Cisco Unified CME router, CTL providers must be configured on all Cisco Unified CME routers.

Credentials service for Cisco Unified CME runs on default port 2444.

## Cisco Unified SRST

The credential server provides certificates to any device that requests a certificate. The credentials server does not request any data from a client; thus no authentication is necessary. When the client, Cisco Unified Communications Manager, requests a certificate, the credentials server provides the certificate. Cisco Unified Communications Manager exports the certificate to the phone, and the Cisco Unified IP phone holds the SRST router certificate in its configuration file. The device certificate for secure SRST routers is placed in the

configuration file of the Cisco Unified IP phone because the entry limit in the certificate trust list (CTL) of Cisco Unified Communications Manager is 32.

Credentials service for SRST runs on default port 2445. Cisco Unified Communications Manager connects to port 2445 on the secure SRST router and retrieves the secure SRST device certificate during the TLS handshake.

Activate this command on all SRST routers.



**Caution** For security reasons, credentials service should be deactivated on all SRST routers after provisioning to Cisco Unified Communications Manager is completed.

## Examples

### Cisco Unified CME

The following example configures a CTL provider on the Cisco Unified CME router with the IP address 172.19.245.1. CTL providers must be configured on all Cisco Unified CME routers on which the CTL client is not running.

```
Router(config)# credentials
Router(config-credentials)# ip source-address 172.19.245.1 port 2444
Router(config-credentials)# trustpoint cmeca
Router(config-credentials)# ctl-service admin user4 secret 0 c89L8o
```

### Cisco Unified SRST

The following example enters credentials configuration mode and sets the IP source address and the trustpoint:

```
Router(config)# credentials
Router(config-credentials)# ip source-address 10.6.21.4 port 2445
Router(config-credentials)# trustpoint srstca
```

## Related Commands

Command	Description
<b>ctl-service admin</b>	Specifies a user name and password to authenticate the CTL client during the CTL protocol.
<b>debug credentials</b>	Sets debugging on the credentials service that runs between a Cisco Unified CME CTL provider the CTL client or between an SRST router and Cisco Unified Communications Manager.
<b>ip source-address (credentials)</b>	Enables the Cisco Unified CME or SRST router to receive messages through the specified IP address and port.
<b>show credentials</b>	Displays the credentials settings on a Cisco Unified CME or SRST router.
<b>trustpoint (credentials)</b>	Specifies the name of the trustpoint to be associated with a Cisco Unified CME CTL provider certificate or with an SRST router certificate.

## date-format (call-manager-fallback)

To set the date display format on all the Cisco IP phones attached to the router, use the **date-format** command in call-manager-fallback configuration mode. To disable the date display format, use the **no** form of this command.

**date-format** {mm-dd-yy | dd-mm-yy | yy-dd-mm | yy-mm-dd}  
**no date-format** {mm-dd-yy | dd-mm-yy | yy-dd-mm | yy-mm-dd}

### Syntax Description

<b>mm-dd-yy</b>	Sets the date format to month, day, year. Each element requires a two-digit number. This format is the default setting.
<b>dd-mm-yy</b>	Sets the date format to day, month, year. Each element requires a two-digit number.
<b>yy-dd-mm</b>	Sets the date format to year, day, month. Each element requires a two-digit number.
<b>yy-mm-dd</b>	Sets the date format to year, month, day. Each element requires a two-digit number.

### Command Default

mm-dd-yy

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(15)ZJ	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.2(15)ZJ.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Examples

The following example sets the date format:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# date-format mm-dd-yy
```

---

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

# default-destination

To create a default call routing path for incoming calls on Foreign Exchange Office (FXO) ports during a WAN outage, use the **default-destination** command in call-manager-fallback configuration mode. To delete the default destination number on the Cisco Unified SRST router, use the **no** form of this command.

**default-destination** *telephone-number*  
**no default-destination** *telephone-number*

<b>Syntax Description</b>	<i>telephone-number</i> Telephone number of the default destination.
---------------------------	--

<b>Command Default</b>	No default behavior or values.
------------------------	--------------------------------

<b>Command Modes</b>	Call-manager-fallback configuration
----------------------	-------------------------------------

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

<b>Usage Guidelines</b>	The <b>default-destination</b> command creates a temporary Private Line Auto Ringdown (PLAR) connection configuration on FXO ports during fallback. The <b>default-destination</b> command has been obsoleted by the <b>alias</b> command, which applies to all port types. Use of the <b>alias</b> command is recommended over the <b>default-destination</b> command.
-------------------------	---

<b>Examples</b>	The following example sets the default destination to 40802:
-----------------	--

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# default-destination 40802
```

---

**Related Commands**

Command	Description
<b>alias (call-manager- fallback)</b>	Provides a mechanism for servicing calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

# description (voice moh-group)

To display a brief description specific to a MOH group, use the **description** command in voice moh-group configuration mode. To remove the description, use the **no** form of this command.

**description** *string*  
**no description**

## Syntax Description

<i>string</i>	An alphanumeric string to add a brief description specific to a MOH group. Maximum length: 80 characters including spaces.
---------------	--

## Command Default

No MOH group description is configured.

## Command Modes

Voice moh-group configuration (config-voice-moh-group)

## Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced
15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

## Usage Guidelines

This command allows you to type a brief text describing a specific voice-moh-group. You can use maximum 80 characters, including spaces to describe a MOH group.

## Examples

The following example provides a description for voice-moh-group1:

```
Router(config)#
Router(config-voice-moh-group)#
Router(config-voice-moh-group) description this is a moh group for sales
```

## Related Commands

Command	Description
<b>voice-moh-group</b>	Enter voice-moh-group configuration mode.
<b>moh</b>	Enables music on hold from a flash audio feed
<b>multicast moh</b>	Enables multicast of the music-on-hold audio stream.
<b>extension-range</b>	Specifies the extension range for a clients calling a voice-moh-group.

# device-id

To specify the device ID of a phone type, use the **device-id** command in ephone-type configuration mode. To reset to the default value, use the **no** form of this command.

**device-id** *number*  
**no device-id**

## Syntax Description

<i>number</i>	Device ID of the phone type. Range: 1 to 2,147,483,647. Default: 0. See <a href="#">Table 2: Supported Values for Ephone-Type Commands, on page 70</a> for a list of supported device IDs.
---------------	--

## Command Default

Device ID is 0.

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.

## Usage Guidelines

This command specifies the device ID of the type of phone being added with the ephone-type template. If this command is set to the default value of 0, the ephone-type is invalid.

*Table 2: Supported Values for Ephone-Type Commands*

Supported Device	device-id	num-buttons	max-presentation
Cisco Unified IP Conference Station 7937G	431	1	6
Nokia E61	376	1	1

## Examples

The following example shows the device ID is set to 376 for the Nokia E61 when creating the ephone-type template:

```
Router(config)# ephone-type E61
Router(config-ephone-type)# device-id 376
Router(config-ephone-type)# device-name E61 Mobile Phone
```

## Related Commands

Command	Description
<b>device-name</b>	Assigns a name to a phone type in an ephone-type template.
<b>load</b>	Associates a type of phone with a phone firmware file.
<b>type</b>	Assigns the phone type to a SCCP phone.



# device-name

To assign a name to a phone type in an ephone-type template, use the **device-name** command in ephone-type configuration mode. To remove the name, use the **no** form of this command.

**device-name** *name*  
**no device-name**

## Syntax Description

<i>name</i>	String that identifies this phone type. Value is any alphanumeric string up to 32 characters.
-------------	---

## Command Default

No name is assigned to this phone type.

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.

## Usage Guidelines

This command specifies a device name for the type of phone being added with the ephone-type template.

## Examples

The following example shows that the name “E61 Mobile Phone” is assigned to a phone type when creating the ephone-type template:

```
Router(config)# ephone-type E61
Router(config-ephone-type)# device-id 376
Router(config-ephone-type)# device-name E61 Mobile Phone
```

## Related Commands

Command	Description
<b>device-id</b>	Specifies the device ID for a phone type in an ephone-type template.

# device-type

To specify the phone type, use the **device-type** command in ephone-type configuration mode. To reset to the default value, use the **no** form of this command.

**device-type** *phone-type*

**no device-type**

## Syntax Description

<i>phone-type</i>	Device type of the phone. See <a href="#">Table 3: Supported Values for Ephone-Type Commands, on page 72</a> for a list of supported device types. Default value is the same value entered with the <b>ephone-type</b> command.
-------------------	---

## Command Default

Device type is the same value that is entered with the **ephone-type** command.

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command specifies the device type of the phone being added with the ephone-type template. The device type is set to the same value as the **ephone-type** command unless you use this command to change the value.

This command must be set to one of the following supported values.

**Table 3: Supported Values for Ephone-Type Commands**

Supported Device	device-id	device-type	num-buttons	max-presentation
Cisco Unified IP Phone 7915 Expansion Module with 12 buttons	227	7915	12	0 (default)
Cisco Unified IP Phone 7915 Expansion Module with 24 buttons	228	7915	24	0
Cisco Unified IP Phone 7916 Expansion Module with 12 buttons	229	7916	12	0
Cisco Unified IP Phone 7916 Expansion Module with 24 buttons	230	7916	24	0
Cisco Unified IP Conference Station 7937G	431	7937	1	6
Cisco Unified IP Phone 8941	586	8941	4	3
Cisco Unified IP Phone 8945	585	8945	4	3

Supported Device	device-id	device-type	num-buttons	max-presentation
Nokia E61	376	E61	1	1

### Examples

The following example shows the device type set to 7915 in the ephone-type template for the Cisco Unified IP Phone 7915 Expansion Module with 12 buttons:

```
Router(config)# ephone-type 7915-12 addon
Router(config-ephone-type)# device-id 227
Router(config-ephone-type)# device-name 7915-12
Router(config-ephone-type)# device-type 7915
```

### Related Commands

Command	Description
<b>device-name</b>	Assigns a name to a phone type in an ephone-type template.
<b>ephone-type</b>	Adds a Cisco Unified IP phone type by defining an ephone-type template.
<b>load</b>	Associates a type of phone with a phone firmware file.
<b>type</b>	Assigns the phone type to a SCCP phone.

## dialplan-pattern (call-manager-fallback)

To create a global prefix that can be used to expand the extension numbers of inbound and outbound calls into fully qualified E.164 numbers, use the **dialplan-pattern** command in call-manager-fallback configuration mode. To disable the **dialplan-pattern** command settings, use the **no** form of this command.

**dialplan-pattern** *tag pattern extension-length extension-length [extension-pattern extension-pattern]*  
**[no-reg]**  
**no dialplan-pattern** *tag [pattern extension-length extension-length extension-pattern extension-pattern]*  
**[no-reg]**

### Syntax Description

<i>tag</i>	Dial-plan string tag used before a ten-digit telephone number. The tag number is from 1 to 5.
<i>pattern</i>	Dial-plan pattern, such as the area code, the prefix, and the first one or two digits of the extension number, plus wildcard markers or dots (.) for the remainder of the extension number digits.
<b>extension-length</b>	Sets the number of extension digits that will appear as a caller ID.
<i>extension-length</i>	The number of extension digits. The extension length must match the setting for IP phones in Cisco Unified Communications Manager mode. The range is from 1 to 32.
<b>extension-pattern</b>	(Optional) Sets an extension number's leading digit pattern when it is different from the E.164 telephone number's leading digits defined in the <i>pattern</i> variable.
<i>extension-pattern</i>	(Optional) The extension number's leading digit pattern. Consists of one or more digits and wildcard markers or dots (.). For example, 5.. would include extensions 500 to 599; 5... would include extensions 5000 to 5999. The extension pattern must match the setting for IP phones in Cisco Unified Communications Manager mode.
<b>no-reg</b>	(Optional) Prevents the E.164 numbers in the dial peer from registering with the gatekeeper.

### Command Default

No default behavior or values.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers and on the Cisco IAD2420 series.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on the Cisco 1750 and Cisco 1751 multiservice routers.

Cisco IOS Release	Cisco Product	Modification
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(11)YT	Cisco SRST 2.1	The <b>extension-pattern</b> keyword was added.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

### Usage Guidelines

The **dialplan-pattern** command builds additional dial peers. For example, if a hidden POTS dial peer is created, such as the following:

```
Router(config)# dial-peer voice 20001 pots
Router(config-dial-peer)# destination-pattern 1001
Router(config-dial-peer)# voice-port 50/0/2
```

and a dial-plan pattern is created, such as 40855510.., then an additional dial peer will be created that allows calls to both the 1001 and 4085551001 numbers. For example:

```
Router(config)# dial-peer voice 20002 pots
Router(config-dial-peer)# destination-pattern 4085551001
Router(config-dial-peer)# voice-port 50/0/2
```

Both dial peers can be seen with the **show dial-peer voice** command.

The **dialplan-pattern** command also creates a global prefix that can be used by inbound calls (calls to an IP phone in a Cisco Unified SRST system) and outbound calls (calls made from an IP phone in a Cisco Unified SRST system) to expand their extension numbers to fully qualified E.164 numbers.

For inbound calls (calls to an IP phone in a Cisco Unified SRST system) where the calling party number matches the dial-plan pattern, the call is considered a local call and has a distinctive ring that identifies the call as internal. Any calling party number that does not match the dial-plan pattern is considered an external call and has a distinctive ring that is different from the internal ringing.

For outbound calls, the **dialplan-pattern** command converts the calling party's extension number to an E.164 calling party number. Outbound calls that do not use an E.164 number and go through a PRI connection to the PSTN may be rejected by the PRI link as the calling party identifier.

If there are multiple patterns, called-party numbers are checked in numeric order, starting with pattern 1, until a match is found or until the last pattern has been checked. The valid dial-plan pattern with the lowest tag is used as a prefix to all local Cisco IP phones.

When **extension-pattern** *extension-pattern* keyword and argument are used, the leading digits of an extension pattern are stripped and replaced with the corresponding leading digits of the dial plan. For example, the following command maps all extension numbers 4xx to the PSTN number 40855501xx, so that extension 412 corresponds to 4085550112.

**dialplan-pattern (call-manager-fallback)**

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# dialplan-pattern 1 4085550100 extension-length 3 extension-pattern 4..
```

The number of *extension-pattern* argument characters must match the number set for the *extension-length* argument. For example, if the *extension-length* is 3, the *extension-pattern* can be 8., 1., 51., and so forth.

A dial-plan pattern is required to register the Cisco IP phone lines with a gatekeeper. The **no-reg** keyword provides the option of not registering specific numbers to the gatekeeper so that those numbers can be used for other telephony services.

**Examples**

The following example shows how to create dial-plan pattern 1 for extension numbers 5000 to 5099 with a prefix of 408555. If an inbound calling party number (4085555044) matches dial-plan pattern 1, the recipient phone will display an extension (5044) as the caller ID and use an internal ringing tone. If an outbound calling party extension number (5044) matches dial-plan pattern 1, the calling party extension will be converted to an E.164 number (4085555044). The E.164 calling party number will appear as the caller ID.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# dialplan-pattern 1 40855550.. extension-length 4 extension-pattern 50..
```

In the following example, the **dialplan-pattern** command creates dial-plan pattern 1 for extensions 800 to 899 with the telephone prefix starting with 4085559. As each number in the extension pattern is declared with the **number** command, two POTs dial peers are created. In the example, they are 801 (an internal office number) and 4085559001 (an external number).

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# dialplan-pattern 1 40855590.. extension-length 3 extension-pattern 8..
```

The following example shows a configuration for two Cisco Unified SRST systems. Each is configured with the same **dialplan-pattern** commands, but one system uses 50.. and the other uses 60.. for extension numbers. Calls from the “50..” system to the “60..” system, and vice versa, are treated as internal calls. Calls that go across an H.323 network and calls that go to a PSTN through an ISDN interface on one of the configured Cisco Unified SRST routers are represented as E.164.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# dialplan-pattern 1 40855550.. extension-length 4 extension-pattern 50..
Router(config-cm-fallback)# dialplan-pattern 2 51055560.. extension-length 4 extension-pattern 60..
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.
<b>show dial-peer voice</b>	Displays information for voice dial peers.

# digit collect kpml

To enable Key Press Markup Language (KPML) digit collection on a SIP phone, use the **digit collect kpml** command in voice register pool or voice register template configuration mode. To disable KPML, use the **no** form of this command.

**digit collect kpml**  
**no digit collect kpml**

**Syntax Description** This command has no arguments or keywords.

**Command Default** KPML digit collection is enabled.

**Command Modes**  
 Voice register pool configuration  
 Voice register template configuration

Command History	Release	Cisco Product	Modification
	12.4(11)XJ	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	This command was introduced.
	12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	This command was integrated into Cisco IOS Release 12.4(15)T.

**Usage Guidelines** KPML is enabled by default for all directory numbers on the phone. A dial plan assigned to a phone has priority over KPML. Use the **no digit collect kpml** command to disable KPML on a phone.

If you use a voice register template to apply a command to a phone and you also use the same command in voice register pool configuration mode for the same phone, the value that you set in voice register pool configuration mode has priority.

KPML is not supported on the Cisco IP Phone 7905, 7912, 7940, or 7960.

**Examples** The following example shows KPML enabled on SIP phone 4:

```
Router(config)# voice register pool 4
Router(config-register-pool)# digit collect kpml
```

Related Commands	Command	Description
	<b>dialplan</b>	Assigns a dial plan to a SIP phone.
	<b>show voice register pool</b>	Displays all configuration information associated with a SIP phone.
	<b>voice register dialplan</b>	Enters voice register dialplan configuration mode to define a dial plan for SIP phones.

## dtmf-relay (voice register pool)

To specify the list of DTMF relay methods that can be used to relay dual-tone multifrequency (DTMF) audio tones between Session Initiation Protocol (SIP) endpoints, use the **dtmf-relay** command in voice register pool configuration mode. To send the DTMF audio tones as part of an audio stream, use the **no** form of this command.

**dtmf-relay** [**cisco-rtp**] [**rtp-nte**] [**sip-notify**]  
**no dtmf-relay**

### Syntax Description

<b>cisco-rtp</b>	Forwards DTMF audio tones by using Real-Time Transport Protocol (RTP) with a Cisco proprietary payload type. This keyword is supported only for dial peers that are created by incoming REGISTERs from a SIP gateway. It is not supported for dial peers that are created by a SIP Cisco IP phone.
<b>rtp-nte</b>	Forwards DTMF audio tones by using Real-Time Transport Protocol (RTP) with a Named Telephone Event (NTE) payload.
<b>sip-notify</b>	Forwards DTMF audio tones by using SIP-NOTIFY messages. This keyword is supported only for dial peers that are created by incoming REGISTERs from a SIP gateway. It is not supported for dial peers that are created by a SIP Cisco IP phone.

### Command Default

DTMF tones are disabled and sent in-band. That is, they remain in the audio stream.

### Command Modes

Voice register pool configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.3(4)T	Cisco SIP SRST 3.0	This command was introduced.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco Unified CME.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

### Usage Guidelines

During Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) or Cisco Unified CME registration, a dial peer is created and that dial peer has a default DTMF relay of in-band.

This command allows you to change the default to a desired value. You must use one or more keywords when configuring this command.

DTMF audio tones are generated when you press a button on a Touch-Tone phone. The tones are compressed at one end of the call and when the digits are decompressed at the other end, there is a risk that they can become distorted. DTMF relay reliably transports the DTMF audio tones generated after call establishment out-of-band.

The SIP Notify method sends Notify messages bidirectionally between the originating and terminating gateways for a DTMF event during a call. If multiple DTMF relay mechanisms are enabled on a SIP dial peer and are negotiated successfully, the SIP Notify method takes precedence.



SIP Notify messages are advertised in an Invite message to the remote end only if the **dtmf-relay** command is set.

For SIP calls, the most appropriate methods to transport DTMF tones are RTP-NTE or SIP-NOTIFY.



**Note** The **cisco-rtp** keyword is a proprietary Cisco implementation. If the proprietary Cisco implementation is not supported, the DTMF relay feature does not function, and the gateway sends DTMF tones in-band.

- The **sip-notify** keyword is available only if the VoIP dial peer is configured for SIP.

## Examples

### Cisco Unified CME

The following example shows how to enable the RTP-NTE and SIP-NOTIFY mechanisms for DTMF relay for SIP phone 4:

```
Router(config)# voice register pool 4
Router(config-register-pool)# dtmf-relay rtp-nte sip-notify
```

### Cisco Unified SIP SRST

The following is sample output from the **show running-config** command that shows that voice register pool 1 has been set up to send DTMF tones:

```
voice register pool 1
 application SIP.app
 incoming called-number 308
 voice-class codec 1
 dtmf-relay rtp-nte
```

## Related Commands

Command	Description
<b>dtmf-relay (voice over IP)</b>	Specifies how an H.323 or SIP gateway relays DTMF tones between telephony interfaces and an IP network.

# elin

To create a PSTN number that replaces a 911 caller's extension, use the **elin** command in voice emergency response location configuration mode. To remove the number, use the **no** form of this command.

**elin** [{1 | 2}] *number*

**no elin** [{1 | 2}]

## Syntax Description

<i>number</i>	PSTN number that replaces a 911 caller's extension.
---------------	---

## Command Default

No replacement number is created.

## Command Modes

Voice emergency response location configuration (cfg-emrgncy-resp-location)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was added for Cisco Unified CME.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

Use this command to specify the ELIN, a PSTN number that will replace the caller's extension. The PSAP will see this number and use it to query the ALI database to locate the caller. It is also used by the PSAP for callbacks. You can optionally configure a second ELIN using the **elin 2** command. If two ELINs are configured, the system selects an ELIN using a round-robin algorithm. If an ELIN is not defined for the ERL, the PSAP will see the original calling number.

## Examples

In the following example, all IP phones with the IP address of 10.X.X.X or 192.168.X.X are automatically associated with this ERL. If one of the phones dials 911, its extension is replaced with 408 555-0100 before it goes to the PSAP. The PSAP will see that the caller's number is 408 555-0100.

```
voice emergency response location 1
  elin 1 4085550100
  subnet 10.0.0.0 255.0.0.0
  subnet 2 192.168.0.0 255.255.0.0
```

## Related Commands

Command	Description
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for Enhanced 911 Services.
<b>subnet</b>	Defines which IP phones are part of this ERL.

## elin (voice emergency response settings)

To create a default ELIN that is used if no ERL has a subnet mask that matches the current 911 caller's IP phone address, use the **elin** command in voice emergency response settings configuration mode. To remove the number, use the **no** form of this command.

**elin** *number*  
**no** **elin**

### Syntax Description

<i>number</i>	An E.164 number to be used as the default ELIN.
---------------	---

### Command Default

No default ELIN number is created.

### Command Modes

Voice emergency response settings configuration (cfg-emrgncy-resp-settings)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

### Usage Guidelines

This command specifies an E.164 number to be the default ELIN if the 911 caller's IP phone address does not match the subnet of any location in any ERL zone. The default ELIN can be an existing ELIN already defined in an ERL or it can be unique.

### Examples

In this example, the ELIN (4085550101) defined in the voice emergency response settings configuration is used if the 911 caller's IP phone address does not match any of the voice emergency response locations. After the 911 call is placed to the PSAP, the PSAP has 120 minutes to call back 408 555-0101 to reach the 911 caller. If the call history has expired (after 120 minutes), any callback is routed to extension 7500.

```
voice emergency response settings
callback 7500
elin 4085550101
expiry 120
```

### Related Commands

Command	Description
<b>callback</b>	Default phone number to contact if a 911 callback cannot find the last 911 caller from the ERL.
<b>expiry</b>	Number of minutes a 911 call is associated to an ELIN in case of a callback from the 911 operator.

Command	Description
<b>logging</b>	Syslog informational message printed to the console each time an emergency call is made.
<b>voice emergency response settings</b>	Creates a tag for identifying settings for E911 behavior.

# emergency response callback

To define a dial peer that is used for 911 callbacks from the PSAP, use the emergency response callback command in voice dial-peer configuration mode. To remove the definition of the dial peer as an incoming link from the PSAP, use the **no** form of this command.

**emergency response callback**  
**no emergency response callback**

<b>Syntax Description</b>	This command has no arguments or keywords.
<b>Command Default</b>	The dial peer is not defined as an incoming link from the PSAP.
<b>Command Modes</b>	Dial-peer configuration (config-dial-peer)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was added for Cisco Unified CME.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command defines which dial peer is used for 911 callbacks from the PSAP. You can define multiple dial peers with this command.

## Examples

The following example shows a dial peer defined as an incoming link from the PSAP. If 408 555-0100 is configured as the ERL for an ERL, this dial peer recognizes that an incoming call from 408 555-0100 is a 911 callback.

```
dial-peer voice 100 pots
incoming called-number 4085550100
port 1/1:D
direct-inward-dial
emergency response callback
```

Related Commands	Command	Description
	<b>emergency response location</b>	Associates an ERL to either a SIP phone, ephone, or dial peer.
	<b>emergency response zone</b>	Defines a dial peer that is used by the system to route emergency calls to the PSAP.
	<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the enhanced 911 service.

# emergency response location

To associate an emergency response location (ERL) for Enhanced 911 Services with a dial peer, ephone, ephone-template, voice register pool, or voice register template, use the **emergency response location** command in dial peer, ephone, ephone-template, voice register pool, or voice register template configuration mode. To remove the association, use the **no** form of this command.

**emergency response location** *tag*

**no emergency response location** *tag*

## Syntax Description

<i>tag</i>	Unique number that identifies an existing ERL tag defined by the <b>voice emergency response location</b> command.
------------	--

## Command Default

No ERL tag is associated with a dial peer, ephone, ephone-template, voice register pool, or voice register template.

## Command Modes

Dial-peer configuration (config-dial-peer)  
 Ephone configuration (config-ephone)  
 Ephone-template configuration (config-ephone-template)  
 Voice register pool configuration (config-register-pool)  
 Voice register template configuration (config-register-template)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was added to Cisco Unified CME in the ephone-template and voice register template configuration modes.

## Usage Guidelines

Use this command to assign an ERL to phones individually. Depending on the type of phones (endpoints) that you have, you can assign an ERL to a phone's:

- Dial-peer configuration
- Ephone
- Ephone-template
- Voice register pool
- Voice register template

These methods of associating a phone with an ERL are alternatives to assigning a group of phones that are on the same subnet as an ERL.

The tag used by this command is an integer from 1 to 2147483647 and refers to an existing ERL tag that is defined by the **voice emergency response location** command. If the tag does not refer to a valid ERL configuration, the phone is not associated to an ERL. For IP phones, the IP address is used to find the inclusive ERL subnet. For phones is on a VoIP trunk or FXS/FXO trunk, the PSAP gets a reorder tone.

## Examples

The following example shows how to assign an ERL to a phone's dial peer:

```
dial-peer voice 12 pots
  emergency response location 18
```

The following example shows how to assign an ERL to a phone's ephone:

```
ephone 41
  emergency response location 22
```

The following example shows how to assign an ERL to one or more SCCP phones:

```
ephone-template 6
  emergency response location 8
```

The following example shows how to assign an ERL to a phone's voice register pool:

```
voice register pool 4
  emergency response location 21
```

The following example shows how to assign an ERL to one or more SIP phones:

```
voice register template 4
  emergency response location 8
```

## Related Commands

Command	Description
<b>emergency response callback</b>	Defines a dial peer that is used for 911 callbacks from the PSAP.
<b>emergency response zone</b>	Defines a dial peer that is used by the system to route emergency calls to the PSAP.
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the enhanced 911 service.

## emergency response zone

To define a dial peer that is used by the system to route emergency calls to a PSAP, use the emergency response zone command in voice dial-peer configuration mode. To remove the definition of the dial peer as an outgoing link to the PSAP, use the **no** form of this command.

**emergency response zone** *zone-tag*  
**no emergency response zone**

### Syntax Description

<i>zone-tag</i>	Identifier (1-100) for the emergency response zone.
-----------------	---

### Command Default

The dial peer is not defined as an outgoing link to the PSAP. Therefore, E911 services are not enabled.

### Command Modes

Dial-peer configuration (config-dial-peer)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	The zone tag option was added. This command was added for Cisco Unified CME.

### Usage Guidelines

Use this command to specify that any calls using this dial peer are processed by the E911 software. To enable any E911 processing, the emergency response zone command must be enabled under a dial peer.

If no zone tag is specified, the system looks for a matching ELIN to the E911 caller's phone by searching each *emergency response location* that was configured using the **emergency response location** command.

If a zone tag is specified, the system looks for a matching ELIN using sequential steps according to the contents of the configured zone. For example, if the E911 caller's phone has an explicit ERL assigned, the system first looks for that ERL in the zone. If not found, it then searches each location within the zone according to assigned priority numbers, and so on. If all steps fail to find a matching ELIN, the default ELIN is assigned to the E911 caller's phone. If no default ELIN is configured, the E911 caller's automatic number identification (ANI) number is communicated to the Public Safety Answering Point (PSAP).

This command can be defined in multiple dial peers. The zone tag option allows only ERLs defined in that zone to be routed on this dial peer. Also, this command allows callers dialing the same emergency number to be routed to different voice interfaces based on the zone that includes their ERL.

### Examples

The following example shows a dial peer defined as an outgoing link to the PSAP. Emergency response zone 10 is created and only calls from this zone are routed through 1/0/0.

```
dial-peer voice 911 pots
 destination-pattern 9911
 prefix 911
 emergency response zone 10
```



port 1/0/0

**Related Commands**

Command	Description
<b>emergency response callback</b>	Defines a dial peer that is used for 911 callbacks from the PSAP.
<b>emergency response location</b>	Associates an ERL to either a SIP phone, ephone, or dial peer.
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for E911 services.
<b>voice emergency response zone</b>	Creates an emergency response zone within which ERLs can be grouped.

# encrypt password

To encrypt the password that is configured on Unified SRST, use the **encrypt password** command in **call-manager-fallback** configuration mode. To disable password encryption, use the **no** form of this command.

**encrypt password**  
**no encrypt password**

## Syntax Description

This command has no arguments or keywords.

## Command Default

This command is enabled by default.

## Command Modes

Call Manager Fallback configuration (config-cm-fallback)

## Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Gibraltar 16.11.1a Release	Unified SRST 12.6	The command is introduced.

## Usage Guidelines

The CLI command **encrypt password** is enabled by default on Unified SRST router. However, it is mandatory to configure **key config-key password-encrypt [Master key]** and **password encryption aes** along with **encrypt password** to support encryption on Unified SRST router.



### Note

If the key used to encrypt the password is replaced with a new key (replace key or re-key), then the password is re-encrypted with the new key.

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Unified SRST feature support and enters call-manager-fallback configuration mode.

# ephone-type

To add a Cisco Unified IP phone type by defining an ephone-type template, use the **ephone-type** command in global configuration mode. To remove an ephone type, use the **no** form of this command.

**ephone-type** *phone-type* [**addon**]

**no ephone-type** *phone-type*

## Syntax Description

<i>phone-type</i>	Unique label that identifies the type of phone. Value is any alphanumeric string up to 32 characters.
<b>addon</b>	(Optional) Phone type is an add-on module, such as the Cisco Unified IP Phone 7915 Expansion Module.

## Command Default

Ephone type is not defined.

## Command Modes

Global configuration (config)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command adds a user-defined template for a phone type to a Cisco Unified CME system. This configuration template defines a set of attributes that describe the features of the new phone type. Use this command to add phone types that are not already defined in the system.

If you use a phone-type argument that matches a system-defined phone type, a message displays notifying you that the ephone-type is built-in and cannot be changed. For a list of system-defined phone types, see the **type** command.

Use the **create cnf-files** command for the new phone type to take effect.

## Examples

The following example shows the Nokia E61 added with an ephone-type template, which is then assigned to ephone 2:

```
ephone-type E61
  device-id 376
  device-name E61 Mobile Phone
  num-buttons 1
  max-presentation 1
  no utf8
  no phoneload
!
!
telephony-service
  load E61 SCCP61.8-2-2SR2S
```

## ephone-type

```

max-ephones 100
max-dn 240
ip source-address 15.7.0.1 port 2000
cnf-file location flash:
cnf-file perphone
voicemail 8900
max-conferences 8 gain -6
transfer-system full-consult
create cnf-files version-stamp 7960 Sep 25 2007 21:25:47
!
!
ephone 2
mac-address 001C.821C.ED23
type E61
button 1:2

```

### Related Commands

Command	Description
<b>create cnf-files</b>	Builds the eXtensible Markup Language (XML) configuration files that are required for IP phones.
<b>device-id</b>	Specifies the device ID for a phone type in an ephone-type template.
<b>device-name</b>	Assigns a name to a phone type in an ephone-type template.
<b>load</b>	Associates a type of Cisco Unified IP phone with a phone firmware file.
<b>type</b>	Assigns a phone type to an SCCP phone.

# expiry

To set the time after which emergency callback history expires, use the **expiry** command in voice emergency response settings configuration mode. To remove the number, use the **no** form of this command.

**expiry** *time*  
**no expiry**

## Syntax Description

<i>time</i>	Identifier (2-2880) in minutes for the maximum time the 911 caller history is available for callback.
-------------	---

## Command Default

The default expiry time is 180 minutes.

## Command Modes

Voice emergency response settings configuration (cfg-emrgncy-resp-settings)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.

## Usage Guidelines

Use this command to specify the amount of time (in minutes) to keep emergency caller history for each ELIN. The time can be an integer in the range of 2 to 2880 minutes. The default value is 180 minutes.

## Examples

In this example, the ELIN (4085550101) defined in the voice emergency response settings configuration will be used if the 911 caller's IP phone address does not match any of the voice emergency response locations. After the 911 call is placed to the PSAP, the PSAP has 120 minutes to call back 408 555-0101 to reach the 911 caller. If the call history has expired (after 120 minutes), any callback is routed to extension 7500.

```
voice emergency response settings
callback 7500
elin 4085550101
expiry 120
```

## Related Commands

Command	Description
<b>callback</b>	Default phone number to contact if a 911 callback cannot find the last 911 caller from the ERL.
<b>elin</b>	E.164 number used as the default ELIN if no matching ERL to the 911 caller's IP phone address is found.
<b>logging</b>	Syslog informational message printed to the console every time an emergency call is made.
<b>voice emergency response settings</b>	Creates a tag for identifying settings for E911 behavior.

## extension-range

To define a range of extension numbers for a specific MOH group in Cisco Unified CME or Cisco Unified SRST, use the **extension-range** command in voice-moh-group configuration mode. To define a range of extension numbers for a specific directory number in Cisco Unified CME, use the **extension-range** command in ephone-dn configuration mode. To disable the extension-range command, use the **no** form of this command.

**extension-range** *starting-extension to ending-extension*

**no extension-range** *starting-extension to ending-extension*

### Syntax Description

<i>starting-extension</i>	Hexidecimal digits (0-9 or A-F) that define the starting extension number in an extension range. Maximum length: 32 digits.
<i>ending-extension</i>	Hexidecimal digits (0-9 or A-F) that define the last extension number in an extension range. Value of the ending extending must be larger than value of the starting extension. Maximum length: 32 digits.

### Command Default

No extension-range is configured.

### Command Modes

Voice MOH group configuration (config-voice-moh-group)  
Ephone-dn configuration (config-ephone-dn)

### Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.
15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

### Usage Guidelines

This command configured in voice moh-group configuration mode identifies MOH clients calling extension numbers specified under the extension range configured for a MOH group in Cisco Unified CME or Cisco Unified SRST. This command in ephone-dn configuration mode identifies MOH clients calling extension numbers specified under the extension range configured for a directory number in Cisco Unified CME

You can define multiple extension-ranges in the same MOH group or directory number.

The extension can be expressed in hexadecimal digits ranging from 0-9 or A-F and should not exceed the limit of 32 digits.

The starting-extension and ending-extension numbers must contain the same number of digits.

The ending extension number must be of a greater value than the starting extension number.

Extension-range for a MOH group must not overlap with any other extension-range configured in any other MOH group.



**Note** If an extension range is defined in a MOH group and it is also defined under ephone-dn, the extension range defined under ephone-dn takes precedence.

## Examples

The following example shows two extension ranges configured under voice moh-group 1:

```
Router(config)# voice moh-group 1
Router(config-voice-moh-group)# moh flahs:/minuet.wav
Router(config-voice-moh-group)# description Marketing
Router(cconfig-voice-moh-group)# extension range 1000 to 1999
Router(config-voice-moh-group)# extension range 3000 to 3999
Router(config-voice-moh-group)#
```

## Related Commands

Command	Description
<b>moh</b>	Enables music on hold from an audio file.
<b>voice-moh-group</b>	Enters voice moh-group configuration mode.

## external-ring (voice register global)

To specify the type of ring sound used on Cisco Session Initiation Protocol (SIP) or Cisco SCCP IP phones for external calls, use the **external-ring** command in voice register global configuration mode. To return to the default ring sound, use the **no** form of this command.

**external-ring** {bellcore-dr1 | bellcore-dr2 | bellcore-dr3 | bellcore-dr4 | bellcore-dr5}  
**no external-ring**

<b>Syntax Description</b>	<b>bellcore-dr1 bellcore-dr2 bellcore-dr3 bellcore-dr4 bellcore-dr5</b>	Each <b>bellcore-dr</b> keyword supports standard distinctive ringing patterns as defined in the standard GR-506-CORE, <i>LSSGR: Signaling for Analog Interfaces</i> .
---------------------------	---	--

**Command Default** The default ring sound is an internal ring pattern.

**Command Modes** Voice register global configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

**Usage Guidelines** When set, this command defines varying ring tones so that you can discriminate between internal and external calls from Cisco SIP or Cisco SCCP IP phones.

**Examples** The following example shows how to specify that Bellcore DR1 be used for external ringing on Cisco SIP IP phones:

```
Router(config)# voice register global
Router(config-register-global)# external-ring bellcore-dr1
```

<b>Related Commands</b>	<table> <tr> <th>Command</th><th>Description</th></tr> <tr> <td><b>voice register global</b></td><td>Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified SIP Survivable Remote Site Telephony (SRST) environment.</td></tr> </table>	Command	Description	<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified SIP Survivable Remote Site Telephony (SRST) environment.
Command	Description				
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified SIP Survivable Remote Site Telephony (SRST) environment.				



# group phone

To add a phone, including a TAPI-based client application, or a softphone on a PC to a VRF group for Cisco Unified CME, use the **group phone** command in ephone or ephone-template configuration mode. To remove the configuration, use the **no** form of this command.

**group phone** *group-tag* [**tapi** *group-tag*]  
**no group phone**

<b>Syntax Description</b>	<i>group-tag</i>	Unique identifier of VRF group ranges from 1 to 5.
	<b>tapi</b>	(Optional) Add TAPI-based client on the phone being configured to a VRF group.

**Command Default** By default, this feature is disabled.

**Command Modes**

- Ephone configuration (config-ephone)
- Ephone-template configuration (config-ephone-template)
- Voice register pool
- Voice register template

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Products</b>	<b>Modification</b>
	12.4(22)T	Cisco Unified SRST 7.0(1)	This command was introduced.
	15.4(3)M	Cisco Unified SRST 10.5	This command was modified.

**Usage Guidelines**

This command enables you to configure the voice VRF group for SIP phones.

This command adds a softphone on a PC, an IP phone, or a TAPI client on an IP phone to a VRF group.

VRF groups for users and phones in Cisco Unified CME are created by using the **group** command in telephony-service configuration mode.

All SCCP and SIP phones connected to Cisco Unified CME must register through the global voice VRF.

TAPI-based client on an IP phone and softphones on a PC must register in Cisco Unified CME through a data VRF.

Before you can use this command, the MAC address for the IP phone being configured must be configured by using the **mac-address** command in ephone configuration mode.

If you use an ephone template to apply a command to an ephone and you also use the same command in ephone configuration mode, the value that you set in ephone configuration mode has priority over the ephone-template configuration.

**Examples**

The following example shows four phones in three VRF groups, two on data VRFs and one on a global voice VRF.

```

telephony-service
sdspfarm conference mute-on # mute-off #
sdspfarm units 4
sdspfarm transcode sessions 10
sdspfarm tag 1 xcode101
sdspfarm tag 2 conf103
group 1
ip source-address 209.165.201.1 port 2000
url directories http://209.165.201.1/localdirectory
!
group 2 vrf data-vrf1
ip source-address 209.165.201.2 port 2000
!
group 3 vrf data-vrf2
ip source-address 209.165.201.3 port 2000
!
.
.
!
ephone-template 1
group phone 1 tapi 2
ephone-template 2
group phone 2
...
ephone 1
mac-address 1111.2222.3333
ephone-template 1
ephone 2
mac-address 2222.2222.3333
ephone-template 2
ephone 3
mac-address 1111.3333.3333
group phone 1 tapi 3
ephone 4
mac-address 1111.2222.4444
group phone 3
!

```

The following example shows four phones in three VRF groups, two on data VRFs and one on a global voice VRF.

```

Router(config)# voice register template
Router(config-telephony)# group-phone <group-tag>

```

#### Related Commands

Command	Description
<b>voice register pool</b>	Enters voice register pool configuration mode.
<b>voice register template</b>	Enters voice register template configuration mode.
<b>ephone-template (ephone)</b>	Applies an ephone template to an ephone configuration.
<b>group (telephony-service)</b>	Creates a VRF group for phones and users in Cisco Unified CME.
<b>mac-address</b>	Associates the MAC address of a Cisco IP phone with an ephone configuration.

## h450 h450-2 timeout (voice service voip)

To specify timeout values for call transfers using the ITU-T H.450.2 standard, use the **h450 h450-2 timeout** command in H.323 voice service configuration mode. To return to the default values, use the **no** form of this command.

**h450 h450-2 timeout** {T1 | T2 | T3 | T4} *milliseconds*  
**no h450 h450-2 timeout** {T1 | T2 | T3 | T4}

### Syntax Description

<b>T1</b>	Timer for identification.
<b>T2</b>	Timer for call setup.
<b>T3</b>	Timer for response initiation.
<b>T4</b>	Timer for response setup.
<i>milliseconds</i>	Number of milliseconds. Range is from 500 to 60000.

### Command Default

T1 timer is 2000 milliseconds. T2 timer is 5000 milliseconds. T3 timer is 5000 milliseconds. T4 timer is 5000 milliseconds.

### Command Modes

H.323 voice service configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

Use this command with Cisco SRST V3.0 or a later version.

This command is used primarily when the default settings for these timers do not match your network delay parameters. See the ITU-T H.450.2 specification for more information on these timers.

### Examples

The following example defines a T1 timeout of 3000 milliseconds:

```
Router(config)# voice service voip
Router(conf-voi-serv)# h323
Router(conf-serv-h323)# h450 h450-2 timeout T1 3000
```

### Related Commands

Command	Description
<b>h323</b>	Enables H.323 voice service configuration commands.
<b>voice service</b>	Enters voice-service configuration mode.

## huntstop (call-manager-fallback)

To set the huntstop attribute for the dial peers associated with a Cisco Unified IP phone during Cisco Unified Communications Manager fallback, use the **huntstop** command in call-manager-fallback configuration mode. To disable huntstop, use the **no** form of this command.

**huntstop** [**channel**] *1-8*

**no** huntstop

### Syntax Description

<b>channel</b>	(Optional) For dual-line ephone-dns, keeps incoming calls from hunting to the second channel if the first channel is busy or does not answer.
<i>1-8</i>	(Optional) For octo-line ephone-dns, keeps incoming calls from hunting to the next channel if the last allowable channel is busy or does not answer. The default is 8.

### Command Default

Huntstop is enabled by default. For octo-line mode, the default number is 8.

### Command Modes

Call-manager-fallback configuration (config-cm-fallback)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(15)ZJ	Cisco SRST 3.0	The <b>channel</b> keyword was added.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(15)XZ	Cisco Unified SRST 4.3	The <i>1-8</i> argument was added for octo-line mode.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

### Usage Guidelines

In call-manager-fallback configuration mode, the huntstop attribute by default is set uniformly to all Cisco Unified IP phone lines (for example, to all or to none).



**Note** Use the **no huntstop** command only if you want to disable huntstop.

### Examples

The following example shows how to disable huntstop for all Cisco Unified IP phones:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# no huntstop
```

The following example shows that octo-line is enabled, the maximum directory numbers is 12, and huntstop is limited at 6 channels:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-dn 12 octo-line 6
```

### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.
<b>huntstop (dial-peer)</b>	Disables all further dial-peer hunting if a call fails using hunt groups.
<b>max-dn (call- manager-fallback)</b>	Sets the maximum possible number of virtual voice ports that can be supported by a router and activates dual-line mode, octo-line mode, or both modes.

## id (voice register pool)

To explicitly identify a locally available individual Cisco SIP IP phone, or when running Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST), set of Cisco SIP IP phones, use the **id** command in voice register pool configuration mode. To remove local identification, use the **no** form of this command.

**id** [ **network** *address mask mask* | *address mask mask* ] [**ip** *address mask mask* *address mask mask* ] [**mac** *address* ]

[**device-id-name** *devicename* ]

[ **phone-number** *e164-number* | **extension-number** *extension-number* ]

**no id** { [ **network** *address mask mask* | *address mask mask* ] | [**ip** *address mask mask* *address mask mask* ] | [**mac** *address* ] } [**device-id-name** *devicename* ]

[ **phone-number** *e164-number* | **extension-number** *extension-number* ]

### Syntax Description

<b>network</b> <i>address mask mask</i>   <i>address mask mask</i>	This keyword/argument combination is used to accept SIP Register messages for the indicated phone numbers from any IP phone within the specified IPv4 and IPv6 subnets. <i>ipv6 address</i> can only be configured with an IPv6 address or a dual-stack mode.
<b>ip</b> <i>address mask mask</i>   <i>address mask mask</i>	This keyword/argument combination is used to identify an individual phones IPv4 or IPv6 address. <i>ipv6 address</i> can only be configured with an IPv6 address or a dual-stack mode.
<b>mac</b> <i>address</i>	The <b>mac address</b> keyword/argument combination is used to identify the MAC address of a particular Cisco IP phone.
<b>device-id-name</b> <i>devicename</i>	Defines the device name to be used to download the phone's configuration file.
<b>phone-number</b> <i>e164-number</i>	Configures the phone-number in E.164 format for webex calling user.
<b>extension-number</b> <i>extension-number</i>	Configures extension number for Webex Calling users.

### Command Default

No SIP IP phone is configured.

### Command Modes

Voice register pool configuration (config-register-pool)

### Command History

Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
15.3(3)T	Cisco Unified CME 10.0	This command was modified to add the <b>device-id-name</b> <i>devicename</i> keyword-argument combination.
Cisco IOS XE Everest 16.6.1	Unified SRST 12.0	This command was modified to add the following keyword-argument combinations for <b>network</b> and <b>ip</b> to include support for IPv6 address: <i>address mask mask</i> .
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.
Cisco IOS XE Cupertino 17.9.1	Cisco Unified SRST 14.3	This command was modified to add the following: <b>phone-number</b> <i>164-number</i> and <b>extension-number</b> <i>extension-number</i>

### Usage Guidelines

Configure this command before configuring any other command in voice register pool configuration mode.

This command allows explicit identification of an individual Cisco SIP IP phone to support a degree of authentication, which is required to accept registrations, based upon the following:

- Verification of the local Layer 2 MAC address using the router's Address Resolution Protocol (ARP) cache.
- Verification of the known single static IP address (or DHCP dynamic IP address within a specific subnet) of the Cisco SIP IP phone.

When the **mac address** keyword and argument are used, the IP phone must be in the same subnet as that of the router's LAN interface, such that the phone's MAC address is visible in the router's ARP cache. Once a MAC address is configured for a specific voice register pool, remove the existing MAC address before changing to a new MAC address.



**Note** For Cisco Unified SIP SRST, this command also allows explicit identification of locally available set of Cisco SIP IP phones.

### Examples

The following is partial sample output from the **show running-config** command. The **id** command identifies the MAC address of a particular Cisco IP phone. The output shows that voice register pool 1 has been set up to accept SIP Register messages from a specific IP phone through the use of the **id** command.

```
voice register pool 1
  id mac 0030.94C2.A22A
  preference 5
  cor incoming call91 1 91011
  translate-outgoing called 1
  proxy 10.2.161.187 preference 1 monitor probe icmp-ping
```

**id (voice register pool)**

```
alias 1 94... to 91011 preference 8
voice-class codec 1
```

The following is sample output from the **show** command after configuring IPv6 address on Cisco Unified SRST router.

```
voice register pool 1
  id network 2001:420:54FF:13::312:0/117
```

The following is sample output from the **show phone-number***164-number*.

```
voice register pool 10
  id phone-number +15139413701
  dtmf-relay rtp-nte
  voice-class codec 10
```

The following is sample output from the **show** and **extension-number***extension-number*.

```
voice register pool 10
  id extension-number 3701
  dtmf-relay rtp-nte
  voice-class codec 10
```

**Related Commands**

Command	Description
<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CallManager Express (Cisco Unified CME) system.



# incoming called-number (voice register pool)

To apply incoming called-number parameters to dynamically created dial peers, use the **incoming called-number** command in voice register pool configuration mode. To remove incoming called-number parameters from a dial peer, use the **no** form of this command.

**incoming called-number** [*number*]  
**no incoming called-number**

<b>Syntax Description</b>	<i>number</i> (Optional) Sequence of digits that represent a phone number prefix.
---------------------------	---

<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	Voice register pool configuration
----------------------	-----------------------------------

<b>Command History</b>	Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

<b>Usage Guidelines</b>	The <b>id</b> (voice register pool) command must be configured before any other voice register pool commands, including the <b>incoming called-number</b> command. The <b>id</b> command identifies a locally available individual Cisco SIP IP phone or a set of Cisco SIP IP phones.
-------------------------	--

<b>Examples</b>	The following is partial sample output from the <b>show running-config</b> command that applies the prefix 308 to dynamically created dial peers:
-----------------	---

```
voice register pool 1
  application SIP.app
  incoming called-number 308
  voice-class codec 1
```

<b>Related Commands</b>	Command	Description
	<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.
	<b>incoming called-number (dial-peer)</b>	Specifies an incoming called number of an MMoIP or POTS dial peer.
	<b>show dial-peer voice</b>	Displays information for voice dial peers.
	<b>voice register pool</b>	Enables SIP SRST voice register pool configuration commands.

## ip qos dscp (call-manager-fallback)

To set the Differentiated Services Code Point (DSCP) for marking the quality of service (QoS) requirements for each packet, use the **ip qos dscp** command in call-manager-fallback configuration mode. To reset to the default value, use the **no** form of this command.

**ip qos dscp** {*numberafcs* | **default** | **ef**} {**media** | **service** | **signaling** | **video**}  
**no ip qos dscp** {*numberafcs* | **default** | **ef**} {**media** | **service** | **signaling** | **video**}

### Syntax Description

<i>number</i>	DSCP value. Range: 0 to 63.
<i>af</i>	Sets DSCP to assured forwarding bit pattern. <ul style="list-style-type: none"> <li>• <b>af11</b>—bit pattern 001010</li> <li>• <b>af12</b>—bit pattern 001100</li> <li>• <b>af13</b>—bit pattern 001110</li> <li>• <b>af21</b>—bit pattern 010010</li> <li>• <b>af22</b>—bit pattern 010100</li> <li>• <b>af23</b>—bit pattern 010110</li> <li>• <b>af31</b>—bit pattern 011010</li> <li>• <b>af32</b>—bit pattern 011100</li> <li>• <b>af33</b>—bit pattern 011110</li> <li>• <b>af41</b>—bit pattern 100010</li> <li>• <b>af42</b>—bit pattern 100100</li> <li>• <b>af43</b>—bit pattern 100110</li> </ul>
<i>cs</i>	Sets DSCP to class-selector codepoint. <ul style="list-style-type: none"> <li>• <b>cs1</b>—codepoint 1 (precedence 1)</li> <li>• <b>cs2</b>—codepoint 2 (precedence 2)</li> <li>• <b>cs3</b>—codepoint 3 (precedence 3)</li> <li>• <b>cs4</b>—codepoint 4 (precedence 4)</li> <li>• <b>cs5</b>—codepoint 5 (precedence 5)</li> <li>• <b>cs6</b>—codepoint 6 (precedence 6)</li> <li>• <b>cs7</b>—codepoint 7 (precedence 7)</li> </ul>
<b>default</b>	Sets DSCP to default bit pattern of 000000.
<b>ef</b>	Sets DSCP to expedited forwarding bit pattern 101110.
<b>media</b>	Applies DSCP to media payload packets for SCCP phones.
<b>service</b>	Not supported for Cisco Unified SRST.
<b>signaling</b>	Not supported for Cisco Unified SRST.
<b>video</b>	Not supported for Cisco Unified SRST.

### Command Default

DSCP for media is **ef**.

---

**Command Modes**

Call-manager-fallback configuration (config-cm-fallback)

---

**Command History**

Cisco IOS Release	Cisco Product	Modification
12.4(22)YB	Cisco Unified SRST 7.1	This command was introduced.
12.4(24)T	Cisco Unified SRST 7.1	This command was integrated into Cisco IOS Release 12.4(24)T.

---

**Usage Guidelines**

This command allows you to set different priority levels for different types of network traffic sent by the Cisco Unified SRST router. Differentiated Services is a method of prioritizing specific network traffic based on the QoS specified by each packet.

Because Cisco Unified IP Phones get their DSCP information from the configuration file that is downloaded to the device, and Cisco Unified SRST does not download configuration files to phones during fallback, only the value set with the **media** keyword takes effect for SCCP phones.

If the DSCP is configured for the gateway interface using the **service-policy** command or in the dial peer using the **ip qos dscp** command, the value set with those commands takes precedence over the DSCP value configured with this command.

---

**Examples**

The following example shows DSCP set for different types of packets .

```
call-manager-fallback
ip qos dscp cs2 media
ip qos dscp cs1 signal
ip qos dscp cs3 video
ip qos dscp cs4 service
```

---

**Related Commands**

Command	Description
<b>ip qos dscp</b>	Sets the DSCP for QoS in a dial peer.
<b>service-policy</b>	Assigns a policy map to an interface that will be used as the service policy for the interface.

## ip source-address (call-manager-fallback)

To enable the SRST router to receive messages from Cisco IP phones through the specified IP addresses and ports, use the **ip source-address** command in call-manager-fallback configuration mode. To disable the router from receiving messages from Cisco IP phones, use the **no** form of this command.

**ip source-address** *ip-address* [**port** *port*] [{**any-match** | **strict-match**}]

**no ip source-address** [*ip-address* **port** *port*] [{**any-match** | **strict-match**}]

### Syntax Description

<i>ip-address</i>	The preexisting SRST router IP address, typically one of the addresses of the Ethernet port of the local router.
<b>port</b>	(Optional) The port to which the gateway router connects to receive messages from the Cisco IP phones.
<i>port</i>	(Optional) The port number. The range is from 2000 to 9999. The default is 2000.
<b>any-match</b>	(Optional) Disables strict IP address checking for registration. This is the default.
<b>strict-match</b>	(Optional) Requires strict IP address checking for registration.

### Command Default

Default port number: 2000 Default server address match: **any-match**

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

### Usage Guidelines

The **ip source-address** command is a mandatory command. The fallback subsystem does not start if the IP address of the Ethernet port to which the phones are connected (typically the ethernet interface of the local SRST gateway) is not provided. If the port number is not provided, the default value (2000) is used.

Use the **any-match** keyword to instruct the router to permit Cisco IP phone registration even when the IP server address used by the phone does not match the IP source address. This option can be used to allow registration of Cisco IP phones on different subnets or those with different default DHCP routers or different TFTP server addresses.

Use the **strict-match** keyword to instruct the router to reject Cisco IP phone registration attempts if the IP server address used by the phone does not exactly match the source address. By dividing the Cisco IP phones into groups on different subnets and giving each group different DHCP default-router or TFTP server addresses, this option can be used to restrict the number of Cisco IP phones allowed to register.

The **ip source-address** command enables a router to receive messages from Cisco IP phones through the specified IP addresses and port. If the router receives a registration request from a Cisco IP phone, the router in return requests the phone configuration and dial-plan information from the Cisco IP phone. This data is stored locally in the memory of the router and is used to create voice-port and dial-plan information. The voice-port and dial-plan information is used to handle telephony calls to and from the Cisco IP phone if the Cisco Unified Communications Manager is unreachable.

## Examples

The following example shows how to set the IP source address and port:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# ip source-address 10.6.21.4 port 2002 strict-match
```

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

## ip source-address (credentials)

To enable the Cisco Unified CME or SRST router to receive credential service messages through the specified IP address and port, use the **ip source-address** command in credentials configuration mode. To disable the router from receiving messages, use the **no** form of this command.

**ip source-address** *ip-address* [**port** *port*]  
**no ip source-address**

<b>Syntax Description</b>	<i>ip-address</i>	Router IP address, typically one of the addresses of the Ethernet port of the local router.
	<b>port</b> <i>port</i>	(Optional) TCP port for credentials service communication. Range is from 2000 to 9999. Cisco Unified CME default is 2444. SRST default is 2445.

**Command Default** Cisco Unified CME default port number: 2444 Cisco Unified SRST default port number: 2445

**Command Modes** Credentials configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.3(14)T	Cisco SRST 3.3	This command was introduced for Cisco Unified SRST.
	12.4(4)XC	Cisco Unified CME 4.0	This command was introduced for Cisco Unified CME.

**Usage Guidelines** **Cisco Unified CME**

This command is used with Cisco Unified CME phone authentication to identify a Cisco Unified CME router on which a CTL provider is being configured.

### Cisco Unified SRST

The **ip source-address** command is a mandatory command to enable secure SRST. If the port number is not provided, the default value (2445) is used. The IP address is usually the IP address of the secure SRST router.

## Examples

### Cisco Unified CME

The following example creates a CTL provider on a Cisco Unified CME router that is not running the CTL client.

```
Router(config)# credentials
Router(config-credentials)# ip source-address 172.19.245.1 port 2444
Router(config-credentials)# trustpoint ctlpv
Router(config-credentials)# ctl-service admin user4 secret 0 c89L8o
```

### Cisco Unified SRST

The following example enters credentials configuration mode and sets the IP source address and port:

```
Router(config)# credentials
Router(config-credentials)# ip source-address 10.6.21.4 port 2445
```

#### Related Commands

Command	Description
<b>credentials</b>	Enters credentials configuration mode to configure a Cisco Unified CME CTL provider certificate or an SRST router certificate.
<b>ctl-service admin</b>	Specifies a user name and password to authenticate the CTL client during the CTL protocol.
<b>debug credentials</b>	Sets debugging on the credentials service that runs between a Cisco Unified CME CTL provider and the CTL client or between an SRST router and Cisco Unified Communications Manager.
<b>show credentials</b>	Displays the credentials settings on a Cisco Unified CME or SRST router.
<b>trustpoint (credentials)</b>	Specifies the name of the trustpoint to be associated with a Cisco Unified CME CTL provider certificate or with an SRST router certificate.

# keepalive (call-manager-fallback)

To configure the time interval between successive keepalive messages from Cisco IP phones, use the **keepalive** command in call-manager-fallback configuration mode. To restore to the default interval, use the **no** form of this command.

**keepalive** *seconds*  
**no keepalive** *seconds*

## Syntax Description

<i>seconds</i>	Keepalive message transmission interval, in seconds. The valid range is from 10 to 65535. The default timeout value is 30.
----------------	--

## Command Default

30 seconds

## Command Modes

Call-manager-fallback configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; and Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

## Usage Guidelines

The **keepalive** command configures the time interval between successive keepalive messages from Cisco IP phones to the Cisco Unified SRST router. If the router fails to receive three successive keepalive messages, it considers the Cisco IP phone to be out of service until the phone reregisters.



**Note** The **keepalive** command is applicable only after a Cisco IP phone has registered with the Cisco Unified SRST-enabled router.

## Examples

The following example sets the keepalive timeout value to 60 seconds:



```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# keepalive 60
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

## limit-dn (call-manager-fallback)

To specify the maximum number of lines available on each Cisco IP phone, use the **limit-dn** command in call-manager-fallback configuration mode. To return to the default setting, use the **no** form of this command.

**limit-dn** *phone-type* *max-lines*

**no limit-dn** *phone-type*

### Syntax Description

phone-type	Type of phone. The following phone types are predefined in the system:
<b>12SP</b>	12SP+ and 30VIP phones
<b>6901</b>	<b>Cisco Unified IP Phone 6901</b>
<b>6911</b>	<b>Cisco Unified IP Phone 6911</b>
<b>6921</b>	<b>Cisco Unified IP Phone 6921</b>
6941	Cisco Unified IP Phone 6941
6961	Cisco Unified IP Phone 6961
7902	Cisco Unified IP Phone 7902
7905	Cisco Unified IP Phone 7905
7906	Cisco Unified IP Phone 7906
7910	Cisco Unified IP Phone 7910
7911	Cisco Unified IP Phone 7911
7912	Cisco Unified IP Phone 7912
7920	Cisco Unified IP Phone 7920
7921	Cisco Unified IP Phone 7921
7925	Cisco Unified IP Phone 7925
7926	Cisco Unified IP Phone 7926
7931	Cisco Unified IP Phone 7931
7935	Cisco Unified IP Phone 7935
7936	Cisco Unified IP Phone 7936
7937	Cisco Unified IP Phone 7937
7940	Cisco Unified IP Phone 7940
7941	Cisco Unified IP Phone 7941

7941GE	Cisco Unified IP Phone 7941GE
7942	Cisco Unified IP Phone 7942
7945	Cisco Unified IP Phone 7945
7960	Cisco Unified IP Phone 7960
7961	Cisco Unified IP Phone 7961
7961GE	Cisco Unified IP Phone 7961GE
7962	Cisco Unified IP Phone 7962
7965	Cisco Unified IP Phone 7965
7970	Cisco Unified IP Phone 7970
7971	Cisco Unified IP Phone 7971
7975	Cisco Unified IP Phone 7975
7985	Cisco Unified IP Phone 7985
CIPC	CIPC
IP-STE	IP-STE
anl	anl
ata	ata
bri	bri
vgc-phone	vgc-phone
<i>max-lines</i>	Maximum lines setting. The range is from 1 to 34.

**Command Default**

No default behavior or values.

**Command Modes**

Call-manager-fallback configuration

**Command History**

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.

**limit-dn (call-manager-fallback)**

Cisco IOS Release	Cisco Product	Modification
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Usage Guidelines**

The **limit-dn** command specifies the maximum number of lines (directory numbers) available for each Cisco IP phone type.



**Note** You must specify this value during initial Cisco Unified SRST router configuration, before any Cisco IP phone actually registers with the Cisco Unified SRST router. You can modify the number of lines at a later time.

The range of the maximum number of lines is from 1 to 34. If there is any active phone with a number greater than the specified limit, warning information is displayed for phone reset.

**Examples**

The following example shows how to set a directory number limit of 2 for the Cisco Unified IP Phone 7910:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# limit-dn 7910 2
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

# listen-port (SIP)

To configure the listen ports used for SIP protocols, use the **listen-port** command in **voice service voip/sip** configuration mode. To reset port use to its default value, use the **no** form of this command.

**listen-port** [ **non-secure** | **secure** | **secure no-client-validation** ] *port-number*  
**no listen-port** [ **non-secure** | **secure** | **secure no-client-validation** ]

## Syntax Description

<b>secure</b>	Specifies the TLS port value.
<b>non-secure</b>	Specifies the TCP/UDP port value.
<b>no-client-validation</b>	Disables mTLS and available only for secure ports.
<i>port-number</i>	Port number. Range: 1–65535. The default for UDP/TCP is 5060; the default for TLS is 5061.

## Command Default

The port number is set to the default value based on the transport layer protocol used.

## Command Modes

SIP configuration mode (config-serv-sip)

## Command History

Release	Modification
12.4(15)XY	This command was introduced.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.
Cisco IOS XE Cupertino 17.8.1a	Enhanced <b>listen-port secure</b> command to disable validation of client certificate and configure TLS port for SIP OAuth-based registrations from remote SIP endpoints.

## Usage Guidelines

The **listen-port** command is configurable on incoming SIP calls, and is applicable for both TDM-IP gateway and CUBE (IPIGW). The CUBE gateway port number defined in global configuration will be used for incoming call legs. Before configuring the SIP listen port for TCP/UDP/TLS, the SIP service should be shut down using the **shutdown** command in SIP configuration mode. If the SIP service is not shut down, the **listen-port** command flashes an error message saying "shutdown SIP service before changing SIP listen port". This ensures that there are no active calls when the SIP listen port is changed. The **non-secure** keyword is supported with all IOS images, and both the **secure** and **non-secure** keywords are supported with licensed Crypto images.

From Cisco IOS XE Cupertino 17.8.1a onwards, **listen-port secure** is modified to create a different TLS port to listen to SIP OAuth registration and disable validation of client certificate.

The following restrictions apply:

- Configuring the SIP listen port on a dial-peer basis is not supported.
- Configuring same listening port for both UDP/TCP and TLS is not allowed.

- Configuring the SIP listen port to a port that is already in use is not supported and results in an error message.
- Changing SIP listen port when Transport services (TCP/UDP/TLS) are shut down, will not close or reopen the port. The result is that only the new port number is updated. The new port will be bound when Transport services (TCP/UDP/TLS) is enabled.

## Examples

The following example shows the port number on a Crypto image being changed to port 2000:

```
Router(config-serv-sip) # listen-port secure 10000
```

The following example shows the port number being reset to the TLS default port:

```
Router(config-serv-sip) # no listen-port
```

The following example shows **listen-port secure** that is modified to create a different TLS port to listen to SIP OAuth registration and disable validation of client certificate:

```
Router(config)#voice service voip
Router(conf-voi-serv)#sip
Router(conf-serv-sip)#listen-port ?
    non-secure  Change UDP/TCP SIP listen Port
    secure      Change TLS SIP listen Port

Router(conf-serv-sip)# listen-port secure ?
<0-65535>      Listen port for mTLS service
no-client-validation  TLS service without client validation

Router(conf-serv-sip)# listen-port secure no-client-validation ?
<cr>          Use default port 5090
<1024-49151>  Specify TLS listen-port
Router(conf-serv-sip) #
```

## Related Commands

Command	Description
<b>shutdown</b>	Disables the port.

# location (voice emergency response zone)

To include a location within an emergency response zone, use the **location** command in voice emergency response zone mode. To assign specific priorities to the locations, use the priority tag. To remove the location, use the **no** form of this command.

**location** *location-tag* [**priority** <1-100>]

**no location** *location-tag*

## Syntax Description

<i>location-tag</i>	Identifier for the emergency response zone location.
<b>priority</b> <i>1-100</i>	Identifier (1-100) for the priority ranking of locations, 1 being the highest priority.

## Command Modes

Voice emergency response zone configuration (cfg-emrgncy-resp-zone)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.

## Usage Guidelines

This command creates locations within emergency response zones. The tag must be the same as the tag that is defined using the **voice emergency response location** command. This allows routing of 911 calls to different PSAPs. Priority is optional and allows searching locations in a specified priority order. If there are locations with assigned priorities and locations configured without priorities, the prioritized locations are searched before those without an assigned priority.

## Examples

The following example shows an assignment of ERLs to two zones, 10 and 11, to route callers to two different PSAPs. The locations for ERLs in zone 10 are searched in sequential order for a phone address match. The calls from zone 10 have an ELIN from ERLs 8, 9, and 10. The calls from zone 11 have an ELIN from ERLs 2, 3, 4, and 5. The locations for ERLs in zone 11 have priorities assigned and is searched in order of the assigned priority and not the ERL tag number.

```
voice emergency response zone 10
location 8
location 9
location 10
voice emergency response zone 11
location 5 priority 1
location 3 priority 2
location 4 priority 3
location 2 priority 10
```

## Related Commands

Command	Description
<b>emergency response callback</b>	Defines a dial peer that is used for 911 callbacks from the PSAP.
<b>emergency response location</b>	Associates an ERL to either a SIP phone, ephone, or dial peer.

Command	Description
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the enhanced 911 service.
<b>voice emergency response zone</b>	Creates an emergency response zone within which ERLs can be grouped.



# logging (voice emergency response settings)

To enable syslog messages to capture emergency call data, use the **logging** command in voice emergency response settings configuration mode. To disable logging, use the **no** form of this command.

**logging**  
**no logging**

**Syntax Description** This command has no arguments or keywords.

**Command Default** This command is enabled by default.

**Command Modes** Voice emergency response settings configuration (cfg-emrgncy-resp-settings)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.

**Usage Guidelines** This command enables syslog messages to be announced for every 911 emergency call that is made. The syslog messages can be used by third party applications to send pager or e-mail notifications to an in-house support number. This command is optional and is enabled by default.

## Examples

In this example, the ELIN (4085550101) defined in the voice emergency response settings configuration is used if the 911 caller's IP phones address does not match any of the voice emergency response locations. After the 911 call is placed to the PSAP, the PSAP has 120 minutes to call back 408 555-0101 to reach the 911 caller. If the call history has expired (after 120 minutes), any callback is routed to extension 7500. The outbound 911 calls do not emit a syslog message to the logging facility (for example, a local buffer, console, or remote host).

```
voice emergency response settings
callback 7500
elin 4085550101
expiry 120
no logging
```

Related Commands	Command	Description
	<b>callback</b>	Default phone number to contact if a 911 callback cannot find the last 911 caller from the ERL.
	<b>elin</b>	E.164 number used as the default ELIN if no matching ERL to the 911 caller's IP phone address is found.
	<b>expiry</b>	Number of minutes a 911 call is associated to an ELIN in case of a callback from the 911 operator.

Command	Description
<b>voice emergency response settings</b>	Creates a tag for identifying settings for E911 behavior.

# max registrations (voice register pool)



**Note** Effective with Cisco IOS Release 12.4(4)T, the **max registrations** command is not visible in Cisco IOS software. For similar functionality, use the **maximum bit-rate (cm-fallback-video)** command.

To set the maximum number of registrations accepted by the voice register pool, use the **max registrations** command in voice register pool configuration mode. To disable registration setup, use the **no** form of this command.

**max registrations** *value*  
**no max registrations**

## Syntax Description

<i>value</i>	Digit, beginning with 0, that represents the maximum number of registrations. The maximum registration value is platform dependent.
--------------	---

## Command Default

The maximum number of IP phones that can be configured per platform

## Command Modes

Voice register pool configuration

## Command History

Release	Modification
12.2(15)ZJ	This command was introduced.
12.3(4)T	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	This command was removed.

## Usage Guidelines

The **id** (voice register pool) command must be configured before any other voice register pool commands, including the **max registrations** command. The **id** command identifies a locally available individual Cisco SIP IP phone or sets of Cisco SIP IP phones.

If two phones attempt to register the same phone number, only the first phone can register the number. You can control which phone is accepted by using multiple voice register pools. In general, the best usage is one pool per phone; with multiple pools, some flexibility is granted.

## Examples

The following partial sample output from the **show running-config** command shows that 5 is the maximum number of SIP telephone registrations accepted.

```
voice register pool 3
 id network 10.2.161.0 mask 255.255.255.0
 number 1 95... preference 1
 cor outgoing call95 1 95011
 max registrations 5
 voice-class codec 1
```

**max registrations (voice register pool)****Related Commands**

Command	Description
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.
<b>voice register pool</b>	Enables SIP SRST voice register pool configuration commands.

## max-conferences (call-manager-fallback)

To set the maximum number of simultaneous three-party conferences supported by the router, use the **max-conferences** command in call-manager-fallback configuration mode. To return to the default number of conferences, use the **no** form of this command.

**max-conferences** *max-no-of-conferences* [**gain** -6 | 0 | 3 | 6]

**no max-conferences** *max-no-of-conferences*

Syntax Description	
<i>max-no-of-conferences</i>	The maximum number of simultaneous three-party conferences allowed by the router. The maximum number of three-party conferences is platform dependent: <ul style="list-style-type: none"> <li>• Cisco 1751 router—8</li> <li>• Cisco 1760 router—8</li> <li>• Cisco 2600 series routers—8</li> <li>• Cisco 2600-XM series routers—8</li> <li>• Cisco 2801 router—8</li> <li>• Cisco 2811, Cisco 2821, and Cisco 2851 routers—16</li> <li>• Cisco 3640 and Cisco 3640A routers—8</li> <li>• Cisco 3660 router—16</li> <li>• Cisco 3725 router—16</li> <li>• Cisco 3745 router—16</li> <li>• Cisco 3800 series router—24</li> </ul>
<b>gain</b>	(Optional) Increases the sound volume of VoIP and public switched telephony network (PSTN) parties joining a conference call. The allowable decibel units are -6 db, 0 db, 3 db, and 6 db. The default is -6 db.

**Command Default** The default is half of the number of maximum simultaneous three-party conferences allowed per platform.

**Command Modes** Call-manager-fallback configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
	12.3(8)T4	Cisco SRST 3.1	The Cisco 2800 series routers were added.
	12.3(11)T	Cisco SRST 3.2	The Cisco 3800 series routers were added.
	12.3(11)XL	Cisco SRST 3.2.2	The <b>gain</b> keyword was added.

**Usage Guidelines** The **max-conferences** command supports three-party conferences for local and on-net calls only when all conference participants are using the G.711 codec. Conversion between G.711 u-law and a-law is supported. Mixing of the media streams is supported by the Cisco IOS processor. The maximum number of simultaneous conferences is limited to the platform-specific maximum.

The **gain** keyword's functionality is applied to inbound audio packets, so conference participants can more clearly hear a remote PSTN or VoIP caller joining their call. Note that this functionality cannot discriminate between a remote VoIP/foreign exchange office (FXO) source, which requires a volume gain, and a remote VoIP/IP phone, which does not require a volume gain and may therefore incur some sound distortions.

### Examples

The following example sets the maximum number of conferences for a Cisco IP phone to 4 and configures a gain of 6 db for inbound audio packets from remote PSTN or VoIP calls joining a conference:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# max-conferences  
4 gain 6
```

### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

## max-dn (call-manager-fallback)

To set the maximum possible number of directories or virtual voice ports that can be supported by a router and to activate dual-line mode, octo-line mode, or both modes, use the **max-dn** command in call-manager-fallback configuration mode. To return to the default number of directories or virtual voice ports and to deactivate the dual-line mode or octo-line mode, use the **no** form of this command.

**max-dn** *max-no-of-directories* [{**dual-line** | **octo-line**}] [**preference** *preference-order*] [*number* **octo-line**]  
**no max-dn**

### Syntax Description

<i>max-no-of-directories</i>	Maximum number of directory numbers (dns) or virtual voice ports supported by the router. The maximum possible number is platform-dependent; see the Cisco IOS command-line interface (CLI) help. The default is 0 directory numbers and 1 channel per virtual port.
<b>dual-line</b>	(Optional) Sets all Cisco Unified IP phones connected to a Cisco Unified SRST router to one virtual voice port with two channels.
<b>octo-line</b>	(Optional) Sets all Cisco Unified IP phones connected to a Cisco Unified SRST router to one virtual voice port with eight channels.
<b>preference</b> <i>preference-order</i>	(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.
<i>number</i> <b>octo-line</b>	(Optional) Sets the maximum number of octo-line directory numbers.

### Command Default

0 directory numbers, 1 channel per virtual port, 8 channels per virtual port, 0 preference, 8 numbers

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	The <b>dual-line</b> keyword was added.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.3(11)T	Cisco SRST 3.2	The <b>preference</b> keyword was added.
12.4(15)XZ	Cisco Unified SRST 4.3	The <b>octo-line</b> keyword and its <i>number</i> argument were added.
12.4(20)T	Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

### Usage Guidelines

The **max-dn** command limits the number of Cisco Unified IP phone directory numbers or virtual voice ports available on the router.

The **dual-line** keyword facilitates call waiting, call transfer, and conference functions by allowing two calls to occur on one line simultaneously. In dual-line mode, all Cisco Unified IP phones on the Cisco Unified SRST router support two channels per virtual voice port.

The **octo-line** keyword facilitates call waiting, call transfer, and conference functions by allowing eight calls to occur on one line simultaneously. In octo-line mode, all Cisco Unified IP phones on the Cisco Unified SRST router support eight channels per virtual voice port.



**Note** After you specify the maximum number of available directory numbers, you cannot reduce that number of directory numbers or virtual voice ports without rebooting the router.

During Cisco Unified SRST registration, a dial peer is created and that dial peer includes a default preference. The **preference** keyword allows you to change the default value, if desired.

Setting the preference enables the desired dial peer to be selected when multiple dial peers within a hunt group are matched for a dial string.

The **alias** command also has a **preference** keyword that sets **alias** command preference values. Setting the **alias** command **preference** keyword allows the default preference set with the **max-dn** command to be overridden. When configuring call rerouting with the **alias** command, set the **preference** keyword of the **max-dn** command to a higher numeric preference value than the preference set with the **alias** command.

### Examples

The following example sets the maximum number of directory numbers or virtual voice ports to 12, activates dual-line mode, activates octo-line mode, and sets the maximum number of dns for octo-mode to 6:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-dn 12 dual-line preference 1 octo-line 6
```

### Related Commands

Command	Description
<b>alias (call-manager- fallback)</b>	Provides a mechanism for rerouting calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback.



Command	Description
<b>call-forward busy (call-manager-fallback)</b>	Configures call forwarding to another number when a Cisco Unified IP phone is busy.
<b>call-forward noan (call-manager-fallback)</b>	Configures call forwarding to another number when no answer is received from a Cisco Unified IP phone.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.
<b>huntstop (call-manager-fallback)</b>	Sets the huntstop attribute for the dial peers associated with a Cisco Unified IP phone during Cisco Unified Communications Manager fallback.
<b>huntstop chan num (call-manager-fallback)</b>	Sets the huntstop attribute for the dial peers, for dual-line mode or octo-line mode (or both), associated with a Cisco Unified IP phone during Cisco Unified Communications Manager fallback.
<b>max-conferences (call-manager-fallback)</b>	Sets the maximum number of simultaneous three-party conferences supported by the router.
<b>preference (dial-peer)</b>	Indicates the preferred order of a dial peer within a hunt group.
<b>transfer-pattern</b>	Allows Cisco Unified IP phones to transfer telephone calls from callers outside the local IP network to another Cisco Unified IP phone.
<b>transfer-system (call-manager-fallback)</b>	Specifies the call transfer method for all Cisco Unified IP phones on a Cisco Unified SRST router using the ITU-T H.450.2 standard.

## max-dn (voice register global)

To set the maximum number of SIP phone directory numbers (extensions) that are supported by a Cisco router, use the **max-dn** command in voice register global configuration mode. To reset to the default, use the **no** form of this command.

**max-dn** *max-directory-numbers*  
**no** **max-dn**

### Syntax Description

<i>maxdirectorynumbers</i>	<p>Maximum number of extensions (ephone-dns) supported by the Cisco router. The maximum number is version and platform dependent; type ? to display range.</p> <ul style="list-style-type: none"> <li>• In Cisco CME 3.4 to Cisco Unified CME 7.0 and in Cisco SIP SRST 3.4 to Cisco Unified SIP SRST 7.0: Default is maximum number supported by platform.</li> <li>• In Cisco Unified CME 7.1 and Cisco Unified SIP SRST 7.1 and later versions: Default is 0.</li> </ul>
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### Command Default

Before Cisco Unified CME 7.1 and Cisco Unified SIP SRST 7.1, default is maximum number supported by platform.

In Cisco Unified CME 7.1 and Cisco Unified SIP SRST 7.1 and later versions, default is 0.

### Command Modes

Voice register global configuration (config-register-global)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.
12.4(22)YB	Cisco Unified CME 7.1 Cisco Unified SIP SRST 7.1	The default value was changed to 0.
12.4(24)T	Cisco Unified CME 7.1 Cisco Unified SIP SRST 7.1	This command was integrated into Cisco IOS release 12.4(24)T.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

### Usage Guidelines

This command limits the number of SIP phone directory numbers (extensions) available in a Cisco Unified CME system. The **max-dn** command is platform specific. It defines the limit for the **voice register dn** command. The **max-pool** command similarly limits the number of SIP phones in a Cisco CME system.

You can increase the number of allowable extensions to the maximum; but after the maximum allowable number is configured, you cannot reduce the limit without rebooting the router. You cannot reduce the number of allowable extensions without removing the already-configured directory numbers with dn-tags that have a higher number than the maximum number to be configured.



**Note** This command can also be used for Cisco Unified SIP SRST.

### Examples

The following example shows how to set the maximum number of directory numbers to 48:

```
Router(config)# voice register global  
Router(config-register-global)# max-dn 48
```

### Related Commands

Command	Description
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>max-pool (voice register global)</b>	Sets the maximum number of SIP voice register pools that are supported in a Cisco SIP SRST or Cisco CME environment.

## max-pool (voice register global)

To set the maximum number of Session Initiation Protocol (SIP) voice register pools that are supported in Cisco Unified SIP SRST, use the **max-pool** command in voice register global configuration mode (**voice register global**). To reset the maximum number to the default, use the **no** form of this command.

**max-pool** *max-voice-register-pools*  
**no** **max-pool**

### Syntax Description

<i>max-voice-register-pools</i>	Maximum number of SIP voice register pools supported by the Cisco router. The upper limit of voice register pools is platform-dependent; type ? for range.
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### Command Modes

Voice register global configuration (config-register-global)

### Command History

Cisco IOS Release	Modification
Cisco IOS XE Release 17.2.1v	Command qualified for use in Cisco vManage CLI templates.
Cisco IOS XE Amsterdam 17.2.1r	Introduced support for YANG models.

### Usage Guidelines

This command limits the number of SIP phones that are supported by Cisco Unified SIP SRST. The **max-pool** command is platform-specific and defines the limit for the **voice register pool** command.

The **max-dn** command similarly limits the number of directory numbers (extensions) in Cisco Unified SIP SRST.

### Examples

```
voice register global
  max-dn 200
  max-pool 100
  system message "SRST mode"
```

### Related Commands

Command	Description
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>max-dn (voice register global)</b>	Sets the maximum number of SIP voice register pools that are supported in a Cisco SIP SRST or Cisco CME environment.

# max-ephones (call-manager-fallback)

To configure the maximum number of Cisco IP phones that can be supported by a router, use the **max-ephones** command in call-manager-fallback configuration mode. To return to the default number of Cisco IP phones, use the **no** form of this command.

**max-ephones** *max-no-of-phones*  
**no max-ephones**

<b>Syntax Description</b>	<i>max-no-of-phones</i>	Maximum number of Cisco IP phones supported by the router. The maximum possible number is platform-dependent; refer to Cisco IOS command-line interface (CLI) help. The default is 0.
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**Command Default** 0 Cisco IP phones

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Usage Guidelines** The **max-ephones** command limits the number of Cisco IP phones supported on the router.



**Note** Once you have specified the maximum number of Cisco IP phones, you cannot reduce that number without rebooting the router.

## Examples

The following example sets the maximum number of Cisco IP phones for a Cisco router to 24:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-ephones 24
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters call-manager-fallback configuration mode.

## maximum bit-rate (cm-fallback-video)

To set the maximum IP phone video bandwidth, use the **maximum bit-rate** command in call-manager-fallback video configuration mode. To restore the default maximum bit-rate, use the **no** form of this command.

**maximum bit-rate** *value*  
**no maximum bit-rate**

### Syntax Description

<i>value</i>	Sets the maximum IP phone video bandwidth, in kbps. The range is 0 to 10000000. The default value is 10000000.
--------------	--

### Command Default

Maximum bit-rate is 1000000.

### Command Modes

Call-manager-fallback video configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified SRST 4.0	This command was introduced.

### Usage Guidelines

Use this command to set the maximum bit-rate for all video-capable phones in a Cisco Unified SRST system.

### Examples

The following example sets a maximum bit-rate of 256 kbps.

```
Router(config)#
call-manager-fallback

Router(config-call-manager-fallback)# video
Router(conf-cm-fallback-video)# maximum bit-rate 256
```

### Related Commands

Command	Description
<b>maximum bit-rate (telephony-service)</b>	Sets the maximum bit-rate for all video-capable phones associated with a Cisco Unified CME router.

# max-presentation

To set the number of call presentation lines supported by a phone type, use the **max-presentation** command in ephone-type configuration mode. To reset to the default, use the **no** form of this command.

**max-presentation** *number*

**no max-presentation**

## Syntax Description

<i>number</i>	Number of presentation lines. Range: 1 to 100. Default: 0. See <a href="#">Table 4: Supported Values for Ephone-Type Commands, on page 134</a> for the number of presentation lines supported by each phone type.
---------------	---

## Command Default

No display lines are supported by the phone type.

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command defines the number of presentation lines that are supported for the type of phone being added with an ephone-type template.

**Table 4: Supported Values for Ephone-Type Commands**

Supported Device	device-id	num-buttons	max-presentation
Cisco Unified IP Conference Station 7937G	431	1	6
Nokia E61	376	1	1

## Examples

The following example shows that 1 presentation line is specified for the Nokia E61 when creating the ephone-type template.

```
Router(config)# ephone-type E61
Router(config-ephone-type)# max-presentation 1
```

## Related Commands

Command	Description
<b>device-id</b>	Specifies the device ID for a phone type in an ephone-type template.
<b>num-buttons</b>	Sets the number of line buttons supported by a phone type.
<b>type</b>	Assigns the phone type to an SCCP phone.



# mode esrst

To enable Enhanced SRST mode with additional feature support for SCCP phones, use the **mode esrst** command. To disable the ESRST mode, use the **no** form of this command.

**mode esrst**  
**no mode esrst**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Default</b>	By default, ESRST mode is disabled.
------------------------	-------------------------------------

<b>Command Modes</b>	Telephony-service configuration (config-telephony)
----------------------	--

Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

<b>Usage Guidelines</b>	This command enables the enhanced SRST mode for SCCP phones.
-------------------------	--

## Example

The following example shows that esrst mode is enabled:

```
Router(config)# telephony-service
Router(config-telephony)# mode esrst
```

Related Commands	Command	Description
	telephony-service	Enters telephony-service configuration mode.
	voice register global	Enters voice register global configuration mode.

## moh (call-manager-fallback)

To enable music on hold (MOH), use the **moh** command in call-manager-fallback configuration mode. To disable music on hold, use the **no** form of this command.

**moh** *filename*  
**no moh** *filename*

<b>Syntax Description</b>	<i>filename</i> Filename of the music file. The music file must be in the system flash.
---------------------------	---

**Command Default** MOH is enabled.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, Cisco IAD2420 series IADs.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
	Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

**Usage Guidelines** The **moh** command allows you to specify the .au and .wav format music files that are played to callers who have been put on hold. MOH works only for G.711 calls and on-net VoIP and PSTN calls. For all other calls, callers hear a periodic tone. For example, internal calls between Cisco IP phones do not get MOH; instead callers hear a tone.



**Note** Music-on-hold files can be .wav or .au file format; however, the file format must contain 8-bit 8-kHz data; for example, CCITT a-law or u-law data format.

MOH can be used as a fallback MOH source when using MOH live feed. See the **moh-live (call-manager-fallback)** command for more information.

**Examples** The following example enables MOH and specifies the music files:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# moh minuet.wav
Router(config-cm-fallback)# moh minuet.au
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.
<b>moh-live (call- manager-fallback)</b>	Specifies that a particular telephone number is to be used for an outgoing call that is to be the source for an MOH stream for SRST.

# moh (voice moh-group)

To enable music on hold (MOH) for a MOH group, use the **moh** command in voice moh-group configuration mode. To disable music on hold, use the no form of this command.

**moh** *filename*  
**no moh** *filename*

## Syntax Description

<i>filename</i>	Name of the music file. The music file must be in the system flash.
-----------------	---

## Command Default

No MOH is enabled

## Command Modes

Voice moh-group configuration (config-voice-moh-group)

## Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified CME/SRST/SIP SRST 8.0	This command was introduced.
15.1(1)T	Cisco Unified CME/SRST/SIP SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

## Usage Guidelines

The **moh** command allows you to specify the .au and .wav format music files that are played to callers who have been put on hold. MOH works only for G.711 calls and on-net VoIP and PSTN calls. For all other calls, callers hear a periodic tone. You must provide the directory and filename of the MOH file in URL format. For example: moh flash:/minuet.au



**Note** Music-on-hold files can be in .wav or .au file format; however, the file format must contain 8-bit 8-kHz data; for example, CCITT a-law or u-law data format.

## Examples

The following example enables MOH for voice moh group 1 and specifies the music files:

```
Router(config)#
Router(config)#voice moh-group 1
Router(config-voice-moh-group)# moh flash:/minuet.wav
```

## Related Commands

<b>voice moh-group</b>	Enters voice moh-group configuration mode.
<b>extension-range</b>	Defines extension range for a clients calling a voice-moh-group.
<b>moh</b>	Enables music on hold from a flash audio file.
<b>multicast moh</b>	Enables multicast of the music-on-hold audio stream.

## moh-file-buffer (cm-fallback)

To specify a MOH file buffer size, use the **moh-file-buffer** command in call-manager-fallback configuration mode. To delete the moh-file-buffer size, use the **no** form of this command.

**moh-file-buffer** *file\_size*  
**no moh-file-buffer**

### Syntax Description

<i>file_size</i>	Specifies a numeric value for the buffer MOH file size between 64 KB and 10000 KB.
------------------	--

### Command Default

No moh-file buffer is configured.

### Command Modes

Call-manager-fallback configuration (config-cm-fallback)

### Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified SRST 8.0	This command was introduced.
15.1(1)T	Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

### Usage Guidelines

This command allows to set a buffer MOH file size limit for new MOH files. You can allocate a MOH file buffer size between 64 KB (8 seconds ) and 10000 KB (20 minutes, approximately). A large buffer size is desirable to cache the largest MOH file and better MOH performance. During memory allocation the buffer size is aligned to 16KB. For more information on MOH file caching, see show ephone moh command.

The default maximum file buffer size is 64 KB. If the MOH file size is too large, it cannot be cached and the buffer size falls back to 64 KB.



**Note** When live-feed is enabled there is no file caching for MOH-group 0.

### Examples

The following example shows a moh-file-buffer size of 2000 KB assigned for future moh files under the call-manager-fallback configuration mode.

```
!  
!  
!  
!  
call-manager-fallback  
  max-conferences 8 gain -6  
  transfer-system full-consult  
  moh-file-buffer 2000  
!  
!  
line con 0  
  exec-timeout 0 0  
line aux 0  
--More--
```

**Related Commands**

Command	Description
<b>moh-group</b>	Allows to configure a MOH group.
<b>moh</b>	Enables music on hold from a flash audio feed
<b>multicast moh</b>	Enables multicast of the music-on-hold audio stream.
<b>extension-range</b>	Specifies the extension range for a clients calling a voice-moh-group.

## moh-live (call-manager-fallback)

To specify that a particular telephone number is to be used for an outgoing call that is to be the source for a music on hold (MOH) stream for SRST, use the **moh-live** command in call-manager-fallback configuration mode. To disable the source for the MOH stream, use the **no** form of this command.

**moh-live** *dn-number* *calling-number* **out-call** *outcall-number*  
**no moh-live** *dn-number* *calling-number* **out-call** *outcall-number*

<b>Syntax Description</b>	<b>dn-number</b> <i>calling-number</i>	Sets the MOH telephone number. The <i>calling-number</i> is a sequence of digits that represent a telephone number.
	<b>out-call</b> <i>outcall-number</i>	Indicates that the router is calling out for a live feed that is to be used for MOH and specifies the number to be called. The <i>outcall-number</i> is a sequence of digits that represent a telephone number, typically of an E&M port.

**Command Default** No default behavior or values.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.3(11)T	Cisco SRST 3.3	This command was introduced.

**Usage Guidelines** The **moh-live** command in SRST mode provides live-feed MOH streams from an audio device connected to an E&M or FXO port to Cisco IP phones.

During SRST, do not change an existing **moh-live** command. Instead, first remove the existing command, and then add in the new command.

To configure MOH from a live feed, you first establish a voice port and dial peer for the call and then create a “dummy” phone or directory number. The dummy number allows for making and receiving calls, but the number is not assigned to a physical phone. It is that number that the MOH system automatically dials to establish the MOH feed.

The **moh-live** command allocates one of the virtual voice ports from the pool of virtual voice ports created by the **max-dn** command. The virtual voice port places an outgoing call to the dummy number; that is, the directory number specified in the **moh-live** command. The audio stream obtained from the MOH call provides the music-on-hold audio stream.

To activate MOH live feed, set up and connect the physical voice port. After setting up the voice port, create a dial peer and give the voice port a directory number with the **destination-pattern** command. The directory number is the number that the system uses to access the MOH. To establish the MOH feed, connect the music source, such as a CD player to autodial the directory number.

MOH can be used as a fallback MOH source when using MOH live feed. See the **moh (call-manager-fallback)** command for more information.

## Examples

The following example configures MOH from a live feed. Note that the dial peer references the E&M port that was set with the **voice-port** command and that the dial-peer number (7777) matches the out-call value of the **moh-live** command.

```
.
.
.
voice-port 1/0/0
 input gain 3
 auto-cut-through
 operation 4-wire
 signal immediate
!
dial-peer voice 7777 pots
 destination-pattern 7777
 port 2/0/0
!
!
call-manager-fallback
 max-conferences 8
 max-dn 1
 moh-live dn-number 3333 out-call 7777
!
.
.
.
```

## Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.
<b>destination-pattern</b>	Specifies either the prefix or the full E.164 telephone number to be used for a dial peer.
<b>moh (call-manager-fallback)</b>	Enables MOH.



## multicast moh (call-manager-fallback)

To enable continuous IP multicast output of music on hold (MOH) from a flash MOH file in a branch Cisco Unified SRST router, use the **multicast moh** command in call-manager-fallback configuration mode. To disable continuous IP multicast output of MOH from a flash MOH file in a branch Cisco Unified SRST router, use the no form of this command.

**multicast moh** *multicast-address* **port** *port* [**route** *ip-address-list*]  
**no multicast moh** *multicast-address* **port** *port* [**route** *ip-address-list*]

### Syntax Description

<i>multicast-address</i>	Declares the multicast-address header value of the MOH packets that are to be multicast.
<b>port</b>	Declares the port header value of the MOH packets that are to be multicast.
<i>port</i>	The desired port number.
<b>route</b>	(Optional) Sets the explicit IP address or addresses from which the multicast packets will be transmitted.
<i>ip-address-list</i>	(Optional) Declares the IP address or addresses. The ip-address-list argument accepts a maximum of four IP address entries separated by a space.

### Command Default

If the **route** keyword is not in the **multicast moh** command, the **ip source-address** command value configured for Cisco Unified SRST will be used.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

MOH multicast operates during Cisco Unified Communications Manager fallback and normal Cisco Unified Communications Manager service.

Because all branch IP phones are instructed by the central Cisco Unified Communications Manager to select and multicast a specific MOH feed, you must configure the IP address and port header values to match the MOH multicast IP address and port used by the central Cisco Unified Communications Manager's MOH. This makes the MOH from Cisco Unified SRST router appear as if it were coming from the central Cisco Unified Communications Manager.

MOH multicast operates with both MOH and MOH live input sources.

### Examples

The following example provides multicast MOH output to the IP phones local to SRST. The MOH packets are broadcast to the 239.10.20.30 multicast address using port 2000. The MOH packets use the **ip source-address** command value configured for Cisco Unified SRST. MOH packets are output only through the router interface that matches the SRST router's IP source-address:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# moh music-on-hold-file.au
Router(config-cm-fallback)# multicast moh 239.10.20.30 port 2000
```

The following example provides multicast MOH output to the IP phones local to SRST. The MOH packets are broadcast to the 239.10.20.30 multicast address using port 2000. The MOH packets use the **ip source-address** command value configured for Cisco Unified SRST. MoH packets are output only through the router interfaces that match the IP addresses listed using the **route** keyword option:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# moh music-on-hold-file.au
Router(config-cm-fallback)# multicast moh 239.10.20.30 port 2000 route 10.10.20.1 10.10.21.1
10.10.22.1 10.10.23.1
```

#### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST and enters <b>call-manager-fallback</b> configuration mode.
<b>ip source-address (call-manager-fallback)</b>	Enables a router to receive messages from Cisco IP phones through the specified IP addresses and ports.
<b>moh (call-manager-fallback)</b>	Enables MOH.
<b>moh-live (call-manager-fallback)</b>	Specifies that a particular telephone number is to be used for an outgoing call that is to be the source for an MOH stream for SRST.

## mwi expires (call-manager-fallback)

Effective with Cisco IOS Releases 12.3(11)T7 and 12.4, the **mwi expires** command was replaced with the **mwi-server** command in SIP user-agent configuration mode.

To set the expiration timer for registration for the message-waiting indication (MWI) client or server, use the **mwi expires** command in call-manager-fallback configuration mode. To disable the timer, use the **no** form of this command.

**mwi expires** *seconds*

**no mwi expires** *seconds*

### Syntax Description

<i>seconds</i>	Expiration time, in seconds. Range is from 600 to 99999. Default is 86400 (24 hours).
----------------	---

### Command Default

86400 seconds (24 hours)

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.3(11)T7 12.4	Cisco SRST 3.3	This command was replaced by the <b>mwi-server</b> command in SIP user-agent configuration mode.

### Examples

The following example sets the expiration timer to 1000 seconds:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# mwi expires 1000
```

### Related Commands

Command	Description
<b>mwi relay (call-manager-fallback)</b>	Enables a Cisco Unified SRST router to relay MWI notification to remote Cisco IP phones.

## mwi reg-e164 (call-manager-fallback)

To register E.164 numbers rather than extension numbers with a Session Interface Protocol (SIP) proxy or registrar, use the **mwi reg-e164** command in call-manager-fallback configuration mode. To return to the default, use the **no** form of this command.

**mwi reg-e164**

**no mwi reg-e164**

**Syntax Description** This command has no keywords or arguments.

**Command Default** Registering extension numbers with the SIP proxy or registrar.

**Command Modes** Call-manager-fallback configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.3(11)T7 12.4	Cisco SRST 3.3	This command was introduced.

**Usage Guidelines** This command is used when setting up extensions to use an external SIP-based message-waiting indication (MWI) server. The **mwi-server** command in SIP user-agent configuration mode specifies other settings for MWI service.

**Examples** The following example specifies that E.164 numbers should be used for registration with the SIP proxy or registrar:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# mwi reg-e164
```

Related Commands	Command	Description
	<b>mwi-server (SIP user-agent)</b>	Specifies voice-mail server settings on a voice gateway or user agent (UA).

## mwi relay (call-manager-fallback)

To enable a Cisco Unified SRST router to relay message-waiting indication (MWI) notification to remote Cisco IP phones, use the **mwi relay** command in call-manager-fallback configuration mode. To disable MWI relay, use the **no** form of this command.

**mwi relay**  
**no mwi relay**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Default</b>	MWI is not enabled.
------------------------	---------------------

<b>Command Modes</b>	Call-manager-fallback configuration
----------------------	-------------------------------------

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

<b>Usage Guidelines</b>	Use this command to enable the Cisco Unified SRST router to relay MWI notification to remote Cisco IP phones. The router at the central site acts as a notifier after this command is used.
-------------------------	---

<b>Examples</b>	The following example enables MWI relay:
-----------------	--

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# mwi relay
```

Related Commands	Command	Description
	<b>mwi expires (call-manager- fallback)</b>	Sets the expiration timer for registration for the client or the server.

## mwi sip-server (call-manager-fallback)

Effective with Cisco IOS Releases 12.3(11)T7 and 12.4, the **mwi sip-server** command was replaced with the **mwi-server** command in SIP user-agent configuration mode and the **mwi reg-e164** command in call-manager-fallback configuration mode.

To configure the IP address and port number for an external SIP-based message-waiting indication (MWI) server, use the **mwi sip-server** command in call-manager-fallback configuration mode. To disable the MWI server functionality, use the **no** form of this command.

**mwi sip-server** *ip-address* [{**transport tcp** | **transport udp**}] [**port** *port-number*] [**reg-e164**]  
[**unsolicited**]  
**no mwi sip-server** *ip-address*

### Syntax Description

<i>ip-address</i>	IP address of the MWI server.
<b>transport tcp</b>	(Optional) Selects TCP as the transport layer protocol. This is the default transport protocol.
<b>transport udp</b>	(Optional) Selects UDP as the transport layer protocol.
<b>port</b> <i>port-number</i>	(Optional) Specifies port number for the MWI server. Range is from 2000 to 9999. Default is 5060.
<b>reg-e164</b>	(Optional) Registers an E.164 number with a Session Interface Protocol (SIP) proxy or registrar rather than an extension number. Registering with an extension number is the default.
<b>unsolicited</b>	(Optional) Sends SIP NOTIFY for MWI without any need to send a SUBSCRIBE from the Cisco Unified SRST router.

### Command Default

Transport layer protocol: TCP Port number: 5060 (SIP standard port) Registration: with an extension number

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.3(11)T7 12.4	Cisco SRST 3.3	This command was replaced by the <b>mwi-server</b> command in SIP user-agent configuration mode and the <b>mwi reg-e164</b> command in call-manager-fallback configuration mode.

### Usage Guidelines

Use this command to configure the IP address of an external SIP MWI server.

The **transport tcp** keyword is the default setting. The **transport udp** keyword allows you to integrate with a SIP MWI client. The optional **port** keyword is used to specify a port number other than 5060, the default. The default registration is with an extension number, so the **reg-e164** keyword allows you to register with an E.164 ten-digit number.

## Examples

The following example sets MWI for the SIP server and sets individual ephone-dn extension numbers to the MWI SIP server's notification list:

```
Router(config) call-manager-fallback
Router(config-cm-fallback) mwi sip-server 192.168.0.5 transport udp
```

## Related Commands

Command	Description
<b>mwi relay (call-manager-fallback)</b>	Enables a Cisco Unified SRST router to relay MWI notification to remote Cisco IP phones.

**mwi sip-server (call-manager-fallback)**





## Command Reference: N through Z

This chapter contains commands to configure and maintain Cisco Unified Survivable Remote Site Telephony (SRST) and Cisco Unified SIP SRST. The commands are presented in alphabetical order. Some commands required for configuring Cisco Unified SRST and Cisco Unified SIP SRST may be found in other Cisco IOS command references. Use the command reference primary index or search online to find these commands.

- [name \(voice emergency response location\), on page 154](#)
- [name \(voice hunt-group\), on page 155](#)
- [number \(voice register pool\), on page 157](#)
- [outbound-proxy system, on page 159](#)
- [overlap-signal, on page 161](#)
- [pattern direct \(vm-integration\), on page 164](#)
- [pattern ext-to-ext busy \(vm-integration\), on page 166](#)
- [pattern ext-to-ext no-answer \(vm-integration\), on page 168](#)
- [pattern trunk-to-ext busy \(vm-integration\), on page 170](#)
- [pattern trunk-to-ext no-answer \(vm-integration\), on page 172](#)
- [phoneload, on page 174](#)
- [phone-display, on page 175](#)
- [phone-mode only, on page 176](#)
- [pickup \(call-manager-fallback\), on page 177](#)
- [preference \(voice register pool\), on page 179](#)
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## name (voice emergency response location)

To describe or identify an emergency response location, use the **name** command in voice emergency response location mode. To remove this definition, use the **no** form of this command.

**name** *string*

**no** **name**

### Syntax Description

<i>string</i>	String (30 characters) used to describe or identify an ERL's location.
---------------	--

### Command Default

The location is not described.

### Command Modes

Voice emergency response location configuration (cfg-emrgncy-resp-location)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

### Usage Guidelines

Use this command to enable a word or description of the ERL for administrative purposes. Most commonly, use this command to identify the location for the network administrator.

### Examples

In this example, the location description is Widget Incorporated.

```
voice emergency response location 60
subnet 1 209.165.200.224 255.255.0.0
elin 1 4085550101
name Widget Incorporated,
```

### Related Commands

Command	Description
<b>address</b>	Specifies a comma separated text entry (up to 247 characters) of an ERL's civic address.
<b>elin</b>	Specifies a PSTN number that will replace the caller's extension.
<b>subnet</b>	Defines which IP phones are part of this ERL.
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for E911 services.

# name (voice hunt-group)

To associate a name with a called voice hunt group, use the **name** command in voice hunt-group configuration mode. To dissociate the name of the called voice hunt group, use the **no** form of this command.

**name** *"primary pilot name"* [**secondary** *"secondary pilot name"* ]  
**no name** *"primary pilot name "* [**secondary** *"secondary pilot name"* ]

<b>Syntax Description</b>	<i>"primary pilot name"</i>	Name of primary pilot number.
	<b>secondary</b> <i>"secondary pilot name"</i>	(Optional) Name of secondary pilot number.

**Command Default** No name is associated with the called voice hunt group.

**Command Modes** Voice hunt-group configuration (config-voice-hunt-group)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	15.3(2)T	This command was introduced.

**Usage Guidelines** In Cisco Unified SRST 9.5, when the secondary pilot name is not explicitly configured, the primary pilot name is applicable to both pilot numbers.



**Note** Use quotes (") when input strings have spaces in between.

## Examples

The following example configures the primary pilot name for both the primary and the secondary pilot numbers:

```
name SALES
```

The following example configures different names for the primary and secondary pilot numbers:

```
name SALES secondary SALES-SECONDARY
```

The following example associates a two-word name for the primary pilot number and a one-word name for the secondary pilot number:

```
name "CUSTOMER SERVICE" secondary CS
```

The following example associates a one-word name for the primary pilot number and a two-word name for the secondary pilot number:

```
name FINANCE secondary "INTERNAL ACCOUNTING"
```

The following example associates two-word names for the primary and secondary pilot numbers:

**name (voice hunt-group)**

```
name "INTERNAL CALLER" secondary "EXTERNAL CALLER"
```

When incoming call A reaches voice hunt group B and lands on final C, extension C does not show the name of the forwarder because the voice hunt group is not configured to display the name. To display the name of the forwarder and the final number, two separate names are required for the primary and secondary pilots.

The following example shows how the primary and secondary pilot names are configured in voice hunt-group configuration mode:

```
voice hunt-group 24 parallel
  final 097
  list 885,886,124,154
  timeout 20
  pilot 021 secondary 621
  name SALES secondary SALES-SECONDARY
```

The following is a sample output of the **show voice hunt-group** command when the primary and secondary pilot names are configured in voice hunt-group configuration mode:

```
show voice hunt-group 1
Group 1
  type: parallel
  pilot number: 1000, peer-tag 2147483647
  secondary number: 2000, peer-tag 2147483646
  pilot name: SALES
  secondary name: SALES-SECONDARY
  list of numbers: 2004,2005
```

**Related Commands**

Command	Description
<b>voice hunt-group</b>	Enters voice hunt-group configuration mode and creates a hunt group for phones in a Cisco Unified CME system.
<b>show voice hunt-group</b>	Displays configuration information associated with one or all voice hunt groups in a Cisco Unified CME system.

## number (voice register pool)

To indicate the E.164 phone numbers that the registrar permits to handle the Register message from a Cisco Unified SIP IP phone, use the **number** command in voice register pool configuration mode. To disable number registration, use the **no** form of this command.

**number** *tag* {*number-pattern* [**preference** *value*] [**huntstop**] | **dn** *dn-tag*}

**no** **number** *tag*

### Syntax Description

<i>tag</i>	Telephone number when there are multiple <b>number</b> commands. Range is 1 to 114.
<i>number-pattern</i>	Phone numbers (including wild cards and patterns) that are permitted by the registrar to handle the Register message from the Cisco Unified SIP IP phone.
<b>preference</b> <i>value</i>	(Optional) Defines the number list preference order. Range is 0 to 10. The highest preference is 0. There is no default.
<b>huntstop</b>	(Optional) Stops hunting when the dial peer is busy.
<b>dn</b> <i>dn-tag</i>	Identifies the directory number tag for this phone number as defined by the <b>voice register dn</b> command. Range is 1 to 288.

### Command Default

Cisco Unified SIP IP phones cannot register in Cisco Unified CME.

### Command Modes

Voice register pool configuration (config-register-pool)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME and the <b>dn</b> keyword was added.
12.4(11)XJ	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	This command was modified. The <i>number-pattern</i> argument and <b>preference</b> and <b>huntstop</b> keywords were removed from Cisco Unified CME.
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	The modifications to this command were integrated into Cisco IOS Release 12.4(15)T.
15.2(4)M	Cisco Unified CME 9.1 Cisco Unified SIP SRST 9.1	This command was modified to increase the valid value of the <i>tag</i> argument to 114.

### Usage Guidelines

The **number** command indicates the phone numbers that are permitted by the registrar to handle the Register message from the Cisco Unified SIP IP phone.

In Cisco Unified SRST, the keywords and arguments of this command allow for more explicit setting of user preferences regarding what number patterns should match the voice register pool.



**Note** Configure the **id (voice register pool)** command before any other voice register pool commands, including the **number** command. The **id** command identifies a locally available, individual Cisco Unified SIP IP phone or a set of Cisco Unified SIP IP phones.

## Examples

The following example shows three directory numbers assigned to Cisco Unified SIP IP phone 1 in Cisco Unified CME:

```
!
voice register pool 1
  id mac 0017.E033.0284
  type 7961
  number 1 dn 10
  number 2 dn 12
  number 3 dn 13
  codec g711ulaw
!
```

The following example shows directory numbers 10, 12, and 13 assigned to phone numbers 1, 2, and 55 of Cisco Unified SIP IP phone 2:

```
voice register pool 2
  id mac 0017.E033.0284
  type 7961
  number 1 dn 10
  number 2 dn 12
  number 55 dn 13
  codec g711ulaw
```

The following example shows a telephone number pattern set to 95... in Cisco Unified SRST. This means all five-digit numbers beginning with 95 are permitted by the registrar to handle the Register message.

```
voice register pool 3
  id network 10.2.161.0 mask 255.255.255.0
  number 1 95... preference 1
  cor incoming call95 1 95011
```

## Related Commands

Command	Description
<b>id (voice register pool)</b>	Explicitly identifies a locally available, individual Cisco Unified SIP IP phone or, when running Cisco Unified SIP SRST, a set of Cisco Unified SIP IP phones.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a phone line, intercom line, voice-mail port, or a message-waiting indicator.



# outbound-proxy system

To specify that all Cisco Unified Communications Manager Express (Cisco Unified CME) line-side phones connected to a Cisco IOS voice gateway use the global settings for forwarding Session Initiation Protocol (SIP) messages to an outbound proxy, use the **outbound-proxy system** command in voice register global configuration mode. To disable the SIP outbound proxy function for Cisco Unified CME line-side SIP phones, use the **no** form of this command.

**outbound-proxy system**  
**no outbound-proxy system**

**Syntax Description** This command has no arguments or keywords.

**Command Default** The SIP outbound proxy function for all SIP line-side phones in Cisco Unified CME is enabled and behavior is determined by the global setting on the Cisco IOS gateway.

**Command Modes** Voice register global configuration (config-register-global)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SIP SRST 4.3	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** If global configuration for outbound proxy is enabled on the Cisco IOS voice gateway and Cisco Unified CME receives a call, Cisco Unified CME forwards all SIP messages to the outbound proxy causing incoming calls to line-side SIP phones to fail. This is the default behavior.

To avoid these failed calls, use the **no** form of this command in voice register global configuration mode to override global outbound proxy settings for the gateway and disable the outbound proxy function for all line-side SIP phones connected to Cisco Unified CME.

To configure outbound proxy settings for an individual dial peer on the gateway, use the **voice-class sip outbound-proxy** command in dial peer voice configuration mode .

## Examples

The following example shows how to disable the global outbound proxy feature for all line-side SIP phones on a Cisco Unified CME:

```
Router> enable
Router# configure
terminal
Router(config)# voice register global
Router(config-register-global)# no outbound-proxy
```

**Related Commands**

Command	Description
<b>voice-class sip outbound-proxy</b>	Configures SIP outbound proxy settings for an individual dial peer that override global settings for the Cisco IOS voice gateway.

# overlap-signal

To configure overlap dialing in SCCP or SIP IP phones, use the overlap-signal command in ephone, ephone-template, telephony-service, voice register pool, voice register global, or voice register template configuration mode.

## overlap-signal

### Syntax Description

This command has no arguments or keywords.

### Command Default

Overlap-signal is disabled.

### Command Modes

Call-manager-fallback  
 Ephone configuration (config-ephone)  
 Ephone-template configuration (config-ephone-template)  
 Telephony-service configuration (config-telephony)  
 Voice register pool (config-register-pool)  
 Voice register global configuration (config-register-global)  
 Voice register template (config-register-template)

### Command History

Cisco IOS Release	Cisco Product	Modification
15.1(3)T	Cisco Unified CME 8.5 Cisco Unified SRST 8.5	This command was introduced.

### Usage Guidelines

SCCP IP phones

In SCCP IP phones, overlap dialing is enabled when the overlap signal command is configured in ephone, ephone-template, and telephony-service configurations modes.

SIP IP phones

In SIP IP Phones, overlap dialing is enabled when the overlap signal command is configured in voice register pool, voice register global, and voice register template configuration modes.

Cisco Unified SRST

In Cisco Unified SRST, overlap dialing is enabled on SCCP IP phones when overlap signal command is configured in call-manager-fallback configuration mode.

### Examples

The following example shows overlap-signal enabled on SCCP phones:

```
Router# show running config
!
!
telephony-service
max-ephones 25
max-dn 15
load 7906 SCCP11.8-5-3S.loads
load 7911 SCCP11.8-5-3S.loads
load 7921 CP7921G-1.3.3.LOADS
load 7941 SCCP41.8-5-3S.loads
load 7942 SCCP42.8-5-3S.loads
```

```

load 7961 SCCP41.8-5-3S.loads
load 7962 SCCP42.8-5-3S.loads
max-conferences 12 gain -6
web admin system name cisco password cisco
transfer-system full-consult
create cnf-files version-stamp Jan 01 2002 00:00:00
overlap-signal
!
ephone-template 1
  button-layout 1 line
  button-layout 3-6 blf-speed-dial
!
ephone-template 9
  feature-button 1 Endcall
  feature-button 3 Mobility
!
!
ephone-template 10
  feature-button 1 Park
  feature-button 2 MeetMe
  feature-button 3 CallBack
  button-layout 1 line
  button-layout 2-4 speed-dial
  button-layout 5-6 blf-speed-dial
  overlap-signal
!
ephone 10
  device-security-mode none
  mac-address 02EA.EAEA.0010
  overlap-signal
!

```

The following example shows overlap-signal configured in voice register global and voice register pool 10:

```

Router#show running config
!
!
!
voice service voip
  ip address trusted list
    ipv4 20.20.20.1
  media flow-around
  allow-connections sip to sip
!
voice class media 10
  media flow-around
!
!
voice register global
  max-pool 10
  overlap-signal
!
voice register pool 5
  overlap-signal
!
!
!

```

The following example shows overlap-signal configured in call-manager-fallback mode:

```

Router# show run | sec call-manager

```

```
call-manager-fallback  
max-conferences 12 gain -6  
transfer-system full-consult  
overlap-signal
```

## pattern direct (vm-integration)

To configure the dual-tone multifrequency (DTMF) digit pattern forwarding necessary to activate the voice-mail system when the user presses the messages button on the phone, use the **pattern direct** command in voice-mail integration configuration mode. To disable DTMF digit pattern forwarding when the user presses the messages button on the phone, use the **no** form of this command.

**pattern direct** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

**no pattern direct** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

### Syntax Description

<i>tag1</i>	Alphanumeric string fewer than four DTMF digits in length. The alphanumeric string consists of a combination of four letters (A,B,C, and D), two symbols (* and #), and ten digits (0 to 9). The tag numbers match the numbers defined in the voice-mail system's integration file, immediately preceding either the number of the calling party, the number of the called party, or a forwarding number.
<i>tag2</i> and <i>tag3</i>	(Optional) See <i>tag1</i> .
<i>last-tag</i>	(Optional) See <i>tag1</i> . This tag indicates the end of the pattern.
<b>CGN</b>	Calling number (CGN) information is sent to the voice-mail system.
<b>CDN</b>	Called number (CDN) information is sent to the voice-mail system.
<b>FDN</b>	Forwarding number (FDN) information is sent to the voice-mail system.

### Command Default

This feature is disabled.

### Command Modes

Voice-mail integration configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(13)T	Cisco SRST 2.02	This command was introduced for Cisco SRST Version 2.02.

**Usage Guidelines**

The **pattern direct** command is used to configure the sequence of DTMF digits passed to a voice-mail system attached to the router through one or more voice ports. When a call is placed directly from a Cisco IP phone attached to the router, the voice-mail system expects to receive a sequence of DTMF digits at the beginning of the call that identify the mailbox of the user calling the voice-mail system accompanied by a string of digits indicating that the caller is attempting to access the designated mailbox in order to retrieve messages.



**Note** Although it is unlikely that you will use multiple instances of the **CGN**, **CDN**, or **FDN** keyword in a single command line, it is permissible to do so.

**Examples**

The following example sets the DTMF pattern for a calling number (CGN) for a direct call to the voice-mail system:

```
Router(config)# vm-integration
Router(config-vm-integration)# pattern direct 2 CGN
```

**Related Commands**

Command	Description
<b>pattern ext-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension attempts to connect to a busy extension and the call is forwarded to voice mail
<b>pattern ext-to-ext no-answer (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext no-answer (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail.
<b>vm-integration</b>	Enters voice-mail integration configuration mode and enables voice-mail integration with DTMF and analog voice-mail systems.

## pattern ext-to-ext busy (vm-integration)

To configure the dual-tone multifrequency (DTMF) digit pattern forwarding necessary to activate the voice-mail system once an internal extension attempts to connect to a busy extension and the call is forwarded to voice mail, use the **pattern ext-to-ext busy** command in voice-mail integration configuration mode. To disable DTMF digit pattern forwarding when an internal extension calls a busy extension and the call is forwarded to a voice-mail system, use the **no** form of this command.

**pattern ext-to-ext busy** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

**no pattern ext-to-ext busy** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

### Syntax Description

<i>tag1</i>	Alphanumeric string fewer than four DTMF digits in length. The alphanumeric string consists of a combination of four letters (A,B,C, and D), two symbols (* and #), and ten digits (0 to 9). The tag numbers match the numbers defined in the voice-mail system's integration file, immediately preceding either the number of the calling party, the number of the called party, or a forwarding number.
<i>tag2</i> and <i>tag3</i>	(Optional) See <i>tag1</i> .
<i>last-tag</i>	(Optional) See <i>tag1</i> . This tag indicates the end of the pattern.
<b>CGN</b>	Calling number (CGN) information is sent to the voice-mail system.
<b>CDN</b>	Called number (CDN) information is sent to the voice-mail system.
<b>FDN</b>	Forwarding number (FDN) information is sent to the voice-mail system.

### Command Default

This feature is disabled.

### Command Modes

Voice-mail integration configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(13)T	Cisco SRST 2.02	This command was introduced for Cisco SRST Version 2.02.



**Usage Guidelines**

The **pattern ext-to-ext busy** command is used to configure the sequence of DTMF digits passed to a voice-mail system attached to the router through one or more voice ports. When a call is routed to the voice-mail system by call forward on busy from a Cisco IP phone attached to the router, the voice-mail system expects to receive a sequence of digits identifying the mailbox associated with the forwarding phone together with digits that identify the extension number of the calling IP phone.



**Note** Although it is unlikely that you will use multiple instances of the **CGN**, **CDN**, or **FDN** keyword in a single command line, it is permissible to do so.

**Examples**

The following example sets the DTMF pattern for a local call forwarded on busy to the voice-mail system:

```
Router(config)# vm-integration
Router(config-vm-integration)# pattern ext-to-ext busy 7 FDN * CGN *
```

**Related Commands**

Command	Description
<b>pattern direct (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when the user presses the messages button on the phone.
<b>pattern ext-to-ext no-answer (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext no-answer (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail.
<b>vm-integration</b>	Enters voice-mail integration configuration mode and enables voice-mail integration with DTMF and analog voice-mail systems.

## pattern ext-to-ext no-answer (vm-integration)

To configure the dual-tone multifrequency (DTMF) digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail, use the **pattern ext-to-ext no-answer** command in voice-mail integration configuration mode. To disable DTMF digit pattern forwarding when an internal extension fails to connect to an extension and the call is forwarded to a voice-mail system, use the **no** form of this command.

**pattern ext-to-ext no-answer** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

**no pattern ext-to-ext no-answer** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

### Syntax Description

<i>tag1</i>	Alphanumeric string fewer than four DTMF digits in length. The alphanumeric string consists of a combination of four letters (A,B,C, and D), two symbols (* and #), and ten digits (0 to 9). The tag numbers match the numbers defined in the voice-mail system's integration file, immediately preceding either the number of the calling party, the number of the called party, or a forwarding number.
<i>tag2</i> and <i>tag3</i>	(Optional) See <i>tag1</i> .
<i>last-tag</i>	(Optional) See <i>tag1</i> . This tag indicates the end of the pattern.
<b>CGN</b>	Calling number (CGN) information is sent to the voice-mail system.
<b>CDN</b>	Called number (CDN) information is sent to the voice-mail system.
<b>FDN</b>	Forwarding number (FDN) information is sent to the voice-mail system.

### Command Default

This feature is disabled.

### Command Modes

Voice-mail integration configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(13)T	2.02	This command was introduced for Cisco SRST Version 2.02.

**Usage Guidelines**

The **pattern ext-to-ext no-answer** command is used to configure the sequence of DTMF digits passed to a voice-mail system attached to the router through one or more voice ports. When a call is routed to the voice-mail system by call forward on no-answer from an IP phone attached to the router, the voice-mail system expects to receive a sequence of digits identifying the mailbox associated with the forwarding phone together with digits that identify the extension number of the calling IP phone.



**Note** Although it is unlikely that you will use multiple instances of the **CGN**, **CDN**, or **FDN** keyword in a single command line, it is permissible to do so.

**Examples**

The following example sets the DTMF pattern for a local call forwarded on no-answer to the voice-mail system:

```
Router(config)# vm-integration
Router(config-vm-integration)# pattern ext-to-ext no-answer 5 FDN * CGN *
```

**Related Commands**

Command	Description
<b>pattern direct (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when the user presses the messages button on the phone.
<b>pattern ext-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext no-answer (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail.
<b>vm-integration</b>	Enters voice-mail integration configuration mode and enables voice-mail integration with DTMF and analog voice-mail systems.

## pattern trunk-to-ext busy (vm-integration)

To configure the dual-tone multifrequency (DTMF) digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail, use the **pattern trunk-to-ext busy** command in voice-mail integration configuration mode. To disable DTMF digit pattern forwarding when an external trunk call reaches a busy extension and the call is forwarded to a voice-mail system, use the **no** form of this command.

**pattern trunk-to-ext busy** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]  
**no pattern trunk-to-ext busy** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

### Syntax Description

<i>tag1</i>	Alphanumeric string fewer than four DTMF digits in length. The alphanumeric string consists of a combination of four letters (A,B,C, and D), two symbols (* and #), and ten digits (0 to 9). The tag numbers match the numbers defined in the voice-mail system's integration file, immediately preceding either the number of the calling party, the number of the called party, or a forwarding number.
<i>tag2</i> and <i>tag3</i>	(Optional) See <i>tag1</i> .
<i>last-tag</i>	(Optional) See <i>tag1</i> . This tag indicates the end of the pattern.
<b>CGN</b>	Calling number (CGN) information is sent to the voice-mail system.
<b>CDN</b>	Called number (CDN) information is sent to the voice-mail system.
<b>FDN</b>	Forwarding number (FDN) information is sent to the voice-mail system.

### Command Default

This feature is disabled.

### Command Modes

Voice-mail integration configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(13)T	Cisco SRST 2.02	This command was introduced for Cisco SRST Version 2.02.

**Usage Guidelines**

The **pattern trunk-to-ext busy** command is used to configure the sequence of DTMF digits passed to a voice-mail system attached to the router through one or more voice ports. When a call is routed to the voice-mail system by call forward on busy from an IP phone attached to the router, the voice-mail system expects to receive a sequence of digits identifying the mailbox associated with the forwarding phone together with digits indicating that the call originated from a PSTN or VoIP caller.



**Note** Although it is unlikely that you will use multiple instances of the **CGN**, **CDN**, or **FDN** keyword in a single command line, it is permissible to do so.

**Examples**

The following example sets the DTMF pattern for call forwarding when an external trunk call reaches a busy extension and the call is forwarded to the voice-mail system:

```
Router(config)# vm-integration
Router(config-vm-integration)# pattern trunk-to-ext busy 6 FDN * CGN *
```

**Related Commands**

Command	Description
<b>pattern direct (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when the user presses the messages button on the phone.
<b>pattern ext-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension attempts to connect to a busy extension and the call is forwarded to voice mail.
<b>pattern ext-to-ext no-answer (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext no-answer (vm- integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail.
<b>vm-integration</b>	Enters voice-mail integration configuration mode and enables voice-mail integration with DTMF and analog voice-mail systems.

## pattern trunk-to-ext no-answer (vm-integration)

To configure the dual-tone multifrequency (DTMF) digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail, use the **pattern trunk-to-ext no-answer** command in voice-mail integration configuration mode. To disable DTMF digit pattern forwarding when an external trunk call reaches another extension where the called party does not answer and the call is forwarded to a voice-mail system, use the **no** form of this command.

**pattern trunk-to-ext no-answer** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

**no pattern trunk-to-ext no-answer** *tag1* {CGN | CDN | FDN} [*tag2* {CGN | CDN | FDN}] [*tag3* {CGN | CDN | FDN}] [*last-tag*]

### Syntax Description

<i>tag1</i>	Alphanumeric string fewer than four DTMF digits in length. The alphanumeric string consists of a combination of four letters (A,B,C, and D), two symbols (* and #), and ten digits (0 to 9). The tag numbers match the numbers defined in the voice-mail system's integration file, immediately preceding either the number of the calling party, the number of the called party, or a forwarding number.
<i>tag2</i> and <i>tag3</i>	(Optional) See <i>tag1</i> .
<i>last-tag</i>	(Optional) See <i>tag1</i> . This tag indicates the end of the pattern.
<b>CGN</b>	Calling number (CGN) information is sent to the voice-mail system.
<b>CDN</b>	Called number (CDN) information is sent to the voice-mail system.
<b>FDN</b>	Forwarding number (FDN) information is sent to the voice-mail system.

### Command Default

This feature is disabled.

### Command Modes

Voice-mail integration configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.2(13)T	Cisco SRST 2.02	This command was introduced for Cisco SRST Version 2.02.

**Usage Guidelines**

The **pattern trunk-to-ext no-answer** command is used to configure the sequence of DTMF digits passed to a voice-mail system attached to the router through one or more voice ports. When a call is routed to the voice-mail system by call forward on no-answer from an IP phone attached to the router, the voice-mail system expects to receive a sequence of digits identifying the mailbox associated with the forwarding phone together with digits indicating that the call originated from a PSTN or VoIP caller.



**Note** Although it is unlikely that you will use multiple instances of the **CGN**, **CDN**, or **FDN** keyword in a single command line, it is permissible to do so.

**Examples**

The following example sets the DTMF pattern for call forwarding when an external trunk call reaches an unanswered extension and the call is forwarded (FDN) to a voice-mail system:

```
Router(config)# vm-integration
Router(config-vm-integration)# pattern trunk-to-ext no-answer 4 FDN * CGN *
```

**Related Commands**

Command	Description
<b>pattern direct (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when the user presses the messages button on the phone.
<b>pattern ext-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension attempts to connect to a busy extension and the call is forwarded to voice mail.
<b>pattern ext-to-ext no-answer (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail.
<b>vm-integration</b>	Enters voice-mail integration configuration mode and enables voice-mail integration with DTMF and analog voice-mail systems.

# phoneload

To define the phone firmware support for a phone type, use the **phoneload** command in ephone-type configuration mode. To remove firmware support, use the **no** form of this command.

**phoneload**  
**no phoneload**

## Syntax Description

This command has no arguments or keywords.

## Command Default

Phone type supports firmware configuration.

## Command Modes

Ephone-type configuration (config-ephone-type)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command specifies whether the phone type defined in the phone-type template supports firmware configuration using the **load** command.

## Examples

The following example shows that support for phone firmware is disabled for the Nokia E61 phone type:

```
Router(config)# ephone-type E61
Router(config-ephone-type)# no phoneload
```

## Related Commands

Command	Description
<b>device-name</b>	Assigns a name to a phone type in an ephone-type template.
<b>load</b>	Associates a type of Cisco Unified IP phone with a phone firmware file.



# phone-display

To enable a SIP/SCCP phone user to display hunt group related information using the Services button on the phone, use the **phone-display** command in voice hunt-group configuration mode. To reset to the default value, use the **no** form of this command.

**phone-display**  
**no phone-display**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Default</b>	By default, this command is enabled.
------------------------	--------------------------------------

<b>Command Modes</b>	Voice register template configuration (config-hunt-group)
----------------------	---

Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

<b>Usage Guidelines</b>	This command enables the user to display hunt group information on the phone.
-------------------------	---

## Example

The following example shows that voice hunt group display option is disabled for phone 7:

```
Router(config)# ephone 7
Router(config-ephone-type)# no phone-ui voice-hunt-groups
```

# phone-mode only

To enable Jabber phone-only client support, use the **phone-mode only** command. To exit the configuration, use the **no** form of the command.

**phone-mode** *phone-only*

**Syntax Description** This command has no arguments or keywords.

**Command Default** Privileged EXEC mode

**Command Modes**

- Voice register global
- Voice register pool
- Voice register template

Command History	Cisco IOS Release	Cisco Product	Modification
	15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

**Usage Guidelines** This command enables Jabber client support for MAC, iPhone, iPad and android for SCCP and SIP phones.

## Example

The following example shows that phone-mode is enabled:

```
Router(config)# voice register pool
Router(config-telephony)# phone-mode phone-only
```

Related Commands	Command	Description
	<b>Voice register global</b>	Enters voice register global configuration mode.
	<b>Voice register pool</b>	Enters voice register pool configuration mode.
	<b>Voice register template</b>	Enters voice register template configuration mode.

# pickup (call-manager-fallback)

To enable the PickUp soft key on all Cisco IP phones, allowing an external Direct Inward Dialing (DID) call coming into one extension to be picked up from another extension during SRST, use the **pickup** command in call-manager-fallback configuration mode. To disable the PickUp soft key on all Cisco IP phones during SRST, use the **no** form of this command.

**pickup** *telephone-number*  
**no pickup** *telephone-number*

## Syntax Description

<i>telephone-number</i>	The telephone number to match an incoming called number.
-------------------------	--

## Command Default

The PickUp soft key is disabled.

## Command Modes

Call-manager-fallback configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.3(7)XL	Cisco SRST 3.1.1	This command was introduced.
12.3(11)T	Cisco SRST 3.2	This command was integrated into Cisco IOS Release 12.3(11)T.

## Usage Guidelines

Configuring the **pickup** command enables the PickUp soft key on all SRST phones. You can then press the PickUp key and answer any currently ringing IP phone that has a DID called number that matches the configured *telephone-number*. This command does not enable the Group PickUp (GPickUp) soft key.

When a user presses the PickUp soft key, SRST searches through all the SRST phones to find a ringing call that has a called number that matches the configured *> telephone-number*. When a match is found, the call is automatically forwarded to the extension number of the phone that requested the call pickup.

The SRST **pickup** command is designed to operate in a manner compatible with Cisco Unified Communications Manager.



### Note

The default phone load on Cisco Unified Communications Manager, Release 4.0(1), for the Cisco 7905 and Cisco 7912 IP phones does not enable the PickUp soft key during fallback. To enable the PickUp soft key on Cisco 7905 and Cisco 7912 IP phones, upgrade your default phone load to Cisco Unified Communications Manager, Release 4.0(1) Sr2. Alternatively, you can upgrade the phone load to [cmterm-7905g-sccp.3-3-8.exe](#) or [cmterm-7912g-sccp.3-3-8.exe](#), respectively.

## Examples

In SRST, the **pickup** command is best used with the **alias** command. The following output from the **show running-config** command shows the **pickup** command and the **alias** command configured to provide call routing for a pilot number of a hunt group:

```
call-manager-fallback
no huntstop
alias 1 8005550100 to 5001
```

**pickup (call-manager-fallback)**

```
alias 2 8005550100 to 5002
alias 3 8005550100 to 5003
alias 4 8005550100 to 5004
pickup 8005550100
```

When a DID incoming call to 800 555-0100 is received, the **alias** command routes the call at random to one of the four extensions (5001 to 5004). Because the **pickup** command is configured, if the DID call rings on extension 5002, the call can be answered from any of the other extensions (5001, 5003, 5004) by pressing the PickUp soft key.

The **pickup** command works by finding a match based on the incoming DID called number. In this example, a call from extension 5004 to extension 5001 (internal call) does not activate the **pickup** command because the called number (5001) does not match the configured pickup number (800 555-0100). Thus, the **pickup** command distinguishes between internal and external calls if multiple calls are ringing simultaneously.

**Related Commands**

Command	Description
<b>alias (call-manager- fallback)</b>	Provides a mechanism for rerouting calls to telephone numbers that are unavailable during Cisco Unified Communications Manager fallback.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

## preference (voice register pool)

To set the preference order for creating the VoIP dial peers created for a number associated with a voice pool, use the **preference** command in voice register pool configuration mode. To put the number in default preference order, use the **no** form of this command.

**preference** *preference-order*  
**no** **preference**

<b>Syntax Description</b>	<i>preference-order</i>	Preference order for the extension or telephone number associated with a pool. Range is 0 to 10. Default is 0, which is the highest preference.
---------------------------	-------------------------	---

**Command Default** 0 (highest preference order)

**Command Modes** Voice register pool configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
	12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco Communications Manager Express (Cisco CME).

**Usage Guidelines** When you create a voice register pool for a SIP phone or a group of SIP phones in a Cisco Unified CME or Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) environment, you automatically create a virtual voice port and one to four virtual dial peers to be used by the number associated with that pool. The preference value is passed transparently to dial peers created for the number. The preference value allows you to control the selection of a desired dial peer when multiple dial peers are matched on the same destination pattern (extension or phone number) associated with the pool. In this way, the **preference** command can be used to establish a hunt strategy for incoming calls.



**Note** Configure the **id** (voice register pool) command before any other voice register pool commands, including the preference command. The id command identifies a locally available individual SIP phone or set of Cisco SIP phones.

### Examples

The following example shows how to set a preference of 2 for extension number 3000:

```
voice register pool 1
  number 3000
  preference 2
```

In the following example, extension number 1222 under voice register dn 4 has a higher preference than number 1222 under voice register pool 5.

```
voice register pool 4
  number 1222
  preference 0
!
!
voice register dn 5
  number 1222
  preference 1
```

#### Related Commands

Command	Description
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

## proxy (voice register pool)

To autogenerate additional VoIP dial peers to reach the main proxy whenever a Cisco Session Initiation Protocol (SIP) IP phone registers with a SIP Survivable Remote Site Telephony (SRST) gateway, use the **proxy** command in voice register pool configuration mode. To disable a dial peer as a SIP proxy, use the **no** form of this command.

**proxy** *ip-address* [**preference** *value*] [**monitor probe** {**icmp-ping** | **rtr**} [*alternate-ip-address*]]  
**no proxy**

### Syntax Description

<i>ip-address</i>	IP address of the SIP proxy.
<b>preference</b> <i>value</i>	(Optional) Defines the preference of the proxy dial peers that are created. Range is from 0 to 10. The highest preference is 0. There is no default.
<b>monitor probe</b>	(Optional) Enables monitoring of proxy dial peers. <ul style="list-style-type: none"> <li>• <b>icmp-ping</b>—Enables monitoring of proxy dial peers using ICMP ping.</li> <li>• <b>rtr</b>—Enables monitoring of proxy dial peers using RTR probes.</li> <li>• <i>alternate-ip-address</i>—(Optional) Enables monitoring of alternate IP addresses other than the proxy address. For example, to monitor a gateway front end to a SIP proxy.</li> </ul>

### Command Default

Proxy dial peer is disabled.

### Command Modes

Voice register pool configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

The **proxy** command autogenerates additional VoIP dial peers to reach the main proxy whenever a Cisco SIP IP phone registers with a Cisco Unified SIP SRST gateway. This autogeneration process enables all PSTN calls to be routed first to the main proxy before the backup dial peers for local Cisco SIP IP phones are tried.

Proxy dial peers can be monitored using ICMP ping or RTR probes, in case of WAN failure. If the Cisco Unified SIP SRST gateway loses probes to the main proxy, the proxy dial peers are temporarily set to an operational down state. Then the backup dial peers can be selected faster to lower the call setup time. In addition, the proxy dial peers can be monitored using an alternate location other than the main proxy to monitor the status of the WAN link.

Only one proxy address can be set per voice register pool.

For proxy monitoring to work, the **call fallback active** command must be configured.



**Note** The **id** (voice register pool) command must be configured before any other voice register pool commands, including the **proxy** command. The **id** command identifies a locally available individual Cisco SIP IP phone or sets of Cisco SIP IP phones.

## Examples

The following partial sample output from the **show running-config** command shows that voice register pool 1 has defined 10.2.161.187 as the SIP proxy and that it is monitored by ICMP ping:

```
voice register pool 1
  id mac 0030.94C2.A22A
  preference 5
  cor incoming call91 1 91011
  translate-outgoing called 1
  proxy 10.2.161.187 preference 1 monitor probe icmp-ping
  alias 1 94... to 91011 preference 8
  voice-class codec 1
```

## Related Commands

Command	Description
<b>call fallback active</b>	Enables a call request to fall back to alternate dial peers in case of network congestion.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.
<b>voice register pool</b>	Enables SIP SRST voice register pool configuration commands.



# registrar server (SIP)

To enable SIP registrar functionality, use the **registrar server** command in SIP configuration mode. To disable SIP registrar functionality, use the **no** form of the command.

**registrar server** [**expires** [**max sec**] [**min sec**]]  
**no registrar server**

## Syntax Description

<b>expires</b>	(Optional) Sets the active time for an incoming registration.
<b>max sec</b>	(Optional) Maximum expires time for a registration, in seconds. The range is from 600 to 86400. The default is 3600.
<b>min sec</b>	(Optional) Minimum expires time for a registration, in seconds. The range is from 60 to 3600. The default is 60.

## Command Default

Disabled

## Command Modes

SIP configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 and Cisco SIP SRST 3.4	This command was added to Cisco CME.

## Usage Guidelines

When this command is entered, the router accepts incoming SIP Register messages. If SIP Register message requests are for a shorter expiration time than what is set with this command, the SIP Register message expiration time is used.

This command is mandatory for Cisco Unified SIP SRST or Cisco Unified CME and must be entered before any **voice register pool** or **voice register global** commands are configured.

If the WAN is down and you reboot your Cisco Unified CME or Cisco Unified SIP SRST router, when the router reloads it will have no database of SIP phone registrations. The SIP phones will have to register again, which could take several minutes, because SIP phones do not use a keepalive functionality. To shorten the time before the phones re-register, the registration expiry can be adjusted with this command. The default expiry is 3600 seconds; an expiry of 600 seconds is recommended.

## Examples

The following partial sample output from the **show running-config** command shows that SIP registrar functionality is set:

```
voice service voip
allow-connections sip-to-sip
```

sip

registrar server expires max 1200 min 300

**Related Commands**

Command	Description
<b>sip</b>	Enters SIP configuration mode from voice service VoIP configuration mode.
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# reset (call-manager-fallback)

To reset Cisco IP phones, use the **reset** command in call-manager-fallback configuration mode.

**reset** {**all** *seconds* | **mac-address** *mac-address*}

## Syntax Description

<b>all</b>	All Cisco IP phones.
<i>seconds</i>	Time interval, in seconds, that passes between each Cisco IP phone resetting. The range is from 0 to 60.
<b>mac-address</b> <i>mac-address</i>	MAC address of a particular Cisco IP phone.

## Command Default

No default behavior or values.

## Command Modes

Call-manager-fallback configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

## Usage Guidelines

This command does not have a **no** form.

## Examples

The following example resets all Cisco IP phones in 8-second intervals:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# reset all 8
```

The following example resets the Cisco IP phone with MAC address CFBA.321B.96FA:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# reset mac-address CFBA.321B.96FA
```

 **reset (call-manager-fallback)****Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

## secondary-dialtone (call-manager-fallback)

To enable a secondary dial tone when a Cisco Unified IP phone user dials a defined PSTN access prefix, use the **secondary-dialtone** command in call-manager-fallback configuration mode. To disable the secondary dial tone, use the **no** form of this command.

**secondary-dialtone** *digit-string*  
**no secondary-dialtone** *digit-string*

<b>Syntax Description</b>	<i>digit-string</i> The number of the access prefix.
---------------------------	--

<b>Command Default</b>	Secondary dial tone is disabled.
------------------------	----------------------------------

<b>Command Modes</b>	Call-manager-fallback configuration
----------------------	-------------------------------------

<b>Command History</b>	Cisco IOS Release	Cisco Unified Product	Modification
	12.2(15)ZJ	Cisco Unified SRST 3.0	This command was introduced.
	12.3(4)T	Cisco Unified SRST 3.0	This command was integrated into Cisco Unified IOS Release 12.3(4)T.

<b>Usage Guidelines</b>	The secondary dial tone is turned off when the next number after the <i>digit-string</i> is pressed. For example, if 8 were the <i>digit-string</i> and a person were dialing 8 555-0100, the secondary dial tone would be turned off when the number 5 is pressed.
-------------------------	---

The tone value for the secondary dial is the skinny DtOutsideDialtone.

<b>Examples</b>	The following enables a secondary dial tone when a Cisco Unified IP phone users enters the number nine to get an outside line:
-----------------	--

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# secondary-dialtone 9
```

<b>Related Commands</b>	Command	Description
	<b>call-manager-fallback</b>	Enables Cisco Unified Unified SRST support and enters call-manager-fallback configuration mode.

# security

To define whether a phone type supports security features, use the **security** command in ephone-type configuration mode. To disable security support, use the **no** form of this command.

**security**  
**no security**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Enabled (phone type supports security features).

**Command Modes**  
Ephone-type configuration (config-ephone-type)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command specifies whether security features are supported by the type of phone being added with a phone-type template.

**Examples** The following example shows that support for security is disabled for the Nokia E61 when creating the ephone-type template:

```
Router(config)# ephone-type E61  
Router(config-ephone-type)# no security
```

Related Commands	Command	Description
	<b>device-id</b>	Specifies the device ID for a phone type.
	<b>type</b>	Assigns a phone type to an SCCP phone.

# security-policy (voice register global)

To define the security level of SIP phones allowed to register, use the security-policy command in voice register global configuration mode. To return to the default, use the no form of this command.



**Note** The security-policy command only works with SRST. While it is possible to configure this command when in CME mode, TLS-based connections from Cisco Unified IP Phones will fail. This failure will occur even if using the "CME-as-SRST" failover model.

## Cisco IOS Release 15.0(1)XA and later releases

**security-policy secure**

**no security-policy secure**

### Syntax Description

<b>secure</b>	Requires SIP phones to use TLS for signaling transport. Non-secure SIP phones are blocked from registering. Valid for Cisco Unified SRST.
---------------	---

### Command Default

All levels of phone security are permitted to register, also known as device-default mode.

### Command Modes

Voice register global configuration (config-register-global)

### Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified SRST 8.0	This command was introduced.
Cisco IOS XE Dublin 17.10.1a	Unified Cisco SRST 14.3	Introduced support for YANG models.

### Usage Guidelines

The secure keyword configures the SIP registration security policy so that only encrypted phones may register to the Cisco Unified SRST device in the event of a failover from the primary call control. When this keyword is configured, non-secure phones using TCP or UDP for signaling transport, as well as authenticated phones using TLS/TCP for signaling transport, will be blocked from registering.

### Examples

The following example shows that only registration requests from encrypted SIP phones in a Cisco Unified SRST system are permitted:

```
Router(config)# voice register global
Router(config-register-global)# security-policy secure
```

### Related Commands

Command	Description
<b>crypto signaling</b>	Identifies the trustpoint and encryption restrictions used during the TLS handshake.

# show call-manager-fallback all

To display the detailed configuration of all Cisco IP phones, directory numbers, voice ports, and dial peers in your network during Cisco Unified CallManager fallback, use the **show call-manager-fallback all** command in privileged EXEC mode.

**show call-manager-fallback all**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.3(4)T	Cisco SRST 3.0	The Version was added to output.

## Examples

The following is sample output from the **show call-manager-fallback all** command:

```
Router #show call-manager-fallback

CONFIG (Version=4.1(0))
=====
Version 4.1(0)
For on-line documentation please see:
www.cisco.com/univercd/cc/td/doc/product/access/ip_ph/ip_ks/index.htm
ip source-address 0.0.0.0 port 2000
max-ephones 0
max-dn 0
max-conferences 8 gain -6
dspfarm units 0
dspfarm transcode sessions 0
huntstop
cnf-file location: system:
cnf-file option: PER-PHONE-TYPE
network-locale[0] US (This is the default network locale for this box)
```



```

network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US (This is the default user locale for this box)
user-locale[1] US
user-locale[2] US
user-locale[3] US
user-locale[4] US
srst mode auto-provision is OFF
srst ephone template is 0
srst dn template is 0
srst dn line mode is single
time-format 12
date-format mm-dd-yy
timezone 0 Greenwich Standard Time
no transfer-pattern is configured, transfer is restricted to local SCCP phones only.
keepalive 30 auxiliary 30
timeout interdigit 10
timeout busy 10
timeout ringing 180
timeout ringin-callerid 8
caller-id name-only: enable
Limit number of DNS per phone:
7910: 36
7935: 36
7936: 36
7940: 36
7960: 36
7970: 36
Log (table parameters):
max-size: 150
retain-timer: 15
transfer-system full-consult
local directory service: enabled.
Extension-assigner tag-type ephone-tag.
=====

```

[Table 5: show call-manager-fallback all Field Descriptions, on page 191](#) describes the significant fields shown in the display.

**Table 5: show call-manager-fallback all Field Descriptions**

Field	Description
destination-pattern	Destination pattern (telephone number) configured for this dial peer.
dial-peer voice	Voice dial peer.
ephone-dn	Cisco IP phone directory number.
(no) huntstop	Whether or not huntstop is set.
ip source-address	IP address used by the Cisco IP phones to register with the router for service.
keepalive	Cisco IP phone keepalive period in seconds.
max-dn	Maximum directory numbers or virtual voice ports.
max-ephones	Maximum number of Cisco IP phones.

**show call-manager-fallback all**

Field	Description
port	TCP port number used by the Cisco IP phones to communicate with the router.
station-id number	Number used for caller-ID purposes when calls are made using the line.
voice-port	(Virtual) voice port designator.
Version	SRST version number designation.

**Related Commands**

Command	Description
<b>show call-manager- fallback dial-peer</b>	Displays detailed configuration output for the dial peers in your network during Cisco Unified CallManager fallback.
<b>show call-manager- fallback ephone-dn</b>	Displays output for the Cisco IP phone directory numbers or virtual voice ports during Cisco Unified CallManager fallback.
<b>show call-manager- fallback voice-port</b>	Displays output for the voice ports while Cisco Unified CallManager is active.

# show call-manager-fallback dial-peer

To display detailed configuration output for the dial peers in your network during Cisco Unified Communications Manager fallback, use the **show call-manager-fallback dial-peer** command in privileged EXEC mode.

**show call-manager-fallback dial-peer**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

## Examples

The following is sample output from the **show call-manager-fallback dial-peer** command:

```
Router# show call-manager-fallback dial-peer
dial-peer voice 20046 pots
 destination-pattern 4444
 call-forward busy 5001
 call-forward noan 5001
 port 50/0/1
dial-peer voice 20047 pots
 destination-pattern 3333
 call-forward busy 5001
 call-forward noan 5001
 port 50/0/2
dial-peer voice 20048 pots
 destination-pattern 5555
 call-forward busy 5001
 call-forward noan 5001
 port 50/0/3
dial-peer voice 20049 pots
 preference 9
 destination-pattern 3...
```

**show call-manager-fallback dial-peer**

```

call-forward busy 5001
call-forward noan 5001
port 50/0/3

```

Table 6: [show call-manager-fallback dial-peer Field Descriptions, on page 194](#) describes the significant fields shown in the display.

**Table 6: show call-manager-fallback dial-peer Field Descriptions**

Field	Description
call-forward busy	Indicates call forwarding when a Cisco IP phone is busy.
call-forward noan	Indicates call forwarding when no answer is received from a Cisco IP phone.
destination-pattern	Destination pattern (telephone number) configured for this dial peer.
dial-peer voice	Voice dial peer.
port	(Virtual) voice port designator.

**Related Commands**

Command	Description
<b>show call-manager- fallback all</b>	Displays the detailed configuration of all Cisco IP phones, directory numbers, voice ports, and dial peers in your network during Cisco Unified Communications Manager fallback.
<b>show call-manager- fallback ephone-dn</b>	Displays output for the Cisco IP phone directory numbers or virtual voice ports during Cisco Unified Communications Manager fallback.
<b>show call-manager- fallback voice-port</b>	Displays output for the voice ports while Cisco Unified Communications Manager is active.

# show call-manager-fallback ephone-dn

To display detailed configuration output for the Cisco IP phone directory numbers or virtual voice ports during Cisco Unified CallManager fallback, use the **show call-manager-fallback ephone-dn** command in privileged EXEC mode.

**show call-manager-fallback ephone-dn**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; Cisco IAD2420 series IADs.
12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.
12.3(4)T	Cisco SRST 3.0	The Version, ephone-dn,vand voice-port was added to output.

## Examples

The following is sample output from the **show call-manager-fallback ephone-dn** command:

```
Router#
Router #show call-manager-fallback

CONFIG (Version=4.1(0))
=====
Version 4.1(0)
For on-line documentation please see:
www.cisco.com/univercd/cc/td/doc/product/access/ip_ph/ip_ks/index.htm
ip source-address 0.0.0.0 port 2000
max-ephones 0
max-dn 0
max-conferences 8 gain -6
dspfarm units 0
dspfarm transcode sessions 0
huntstop
cnf-file location: system:
cnf-file option: PER-PHONE-TYPE
```

**show call-manager-fallback ephone-dn**

```

network-locale[0] US (This is the default network locale for this box)
network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US (This is the default user locale for this box)
user-locale[1] US
user-locale[2] US
user-locale[3] US
user-locale[4] US
srst mode auto-provision is OFF
srst ephone template is 0
srst dn template is 0
srst dn line mode is single
time-format 12
date-format mm-dd-yy
timezone 0 Greenwich Standard Time
no transfer-pattern is configured, transfer is restricted to local SCCP phones only.
keepalive 30 auxiliary 30
timeout interdigit 10
timeout busy 10
timeout ringing 180
timeout ringin-callerid 8
caller-id name-only: enable
Limit number of DNs per phone:
7910: 36
7935: 36
7936: 36
7940: 36
7960: 36
7970: 36
Log (table parameters):
max-size: 150
retain-timer: 15
transfer-system full-consult
local directory service: enabled.
Extension-assigner tag-type ephone-tag.
=====

```

[Table 7: show call-manager-fallback ephone-dn Field Descriptions, on page 196](#) describes the significant fields shown in the display.

**Table 7: show call-manager-fallback ephone-dn Field Descriptions**

Field	Description
ephone-dn	Cisco IP phone directory number.
(no) huntstop	Whether or not huntstop is set.
number	Cisco IP phone number.
translate called	The configured translation rule. Can be called or calling, plus the tag number by which the rule set is referenced.

**Related Commands**

Command	Description
<b>show call-manager- fallback all</b>	Displays the detailed configuration of all Cisco IP phones, directory numbers, voice ports, and dial peers in your network during Cisco Unified CallManager fallback.
<b>show call-manager- fallback dial-peer</b>	Displays detailed configuration output for the dial peers in your network during Cisco Unified CallManager fallback.
<b>show call-manager- fallback voice-port</b>	Displays output for the voice ports while Cisco Unified CallManager is active.

# show call-manager-fallback voice-port

To display detailed configuration output for the voice ports while Cisco Unified Communications Manager is active, use the **show call-manager-fallback voice-port** command in privileged EXEC mode.

**show call-manager-fallback voice-port**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

## Examples

The following is sample output from the **show call-manager-fallback voice-port** command:

```
Router# show call-manager-fallback voice-port
voice-port 50/0/1
  station-id number 4444
  timeout ringing 8
  translate called 1
!
voice-port 50/0/2
  station-id number 3333
  timeout ringing 8
  translate called 1
!
voice-port 50/0/3
  station-id number 5555
  timeout ringing 8
  translate called 1
!
voice-port 50/0/4
  timeout ringing 8
  translate called 1
!
```



Table 8: [show call-manager-fallback voice-port Field Descriptions, on page 199](#) describes the significant fields shown in the display.

**Table 8: show call-manager-fallback voice-port Field Descriptions**

Field	Description
voice-port	(Virtual) voice port.
station-id number	The phone number used for caller-ID purposes for calls made from this voice port.

#### Related Commands

Command	Description
<b>show call-manager- fallback all</b>	Displays the detailed configuration of all Cisco IP phones, directory numbers, voice ports, and dial peers in your network during Cisco Unified Communications Manager fallback.
<b>show call-manager- fallback dial-peer</b>	Displays detailed configuration output for the dial peers in your network during Cisco Unified Communications Manager fallback.
<b>show call-manager- fallback ephone-dn</b>	Displays output for the Cisco IP phone directory numbers or virtual voice ports during Cisco Unified Communications Manager fallback.

# show credentials

To display the credentials settings that have been configured for use during Cisco Unified CME phone authentication communications or secure Cisco Unified SRST fallback, use the **show credentials** command in privileged EXEC mode.

**show credentials**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.3(14)T	Cisco SRST 3.3	This command was introduced for Cisco Unified SRST.
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced for Cisco Unified CME.

## Usage Guidelines

### Cisco Unified CME

This command displays the credentials settings on a Cisco Unified CME router that has been configured with a CTL provider to be used with Cisco Unified CME phone authentication.

### Cisco Unified SRST

This command displays the credentials settings on the Cisco Unified SRST router that are supplied to Cisco Unified Communications Manager for use during secure SRST fallback.

## Examples

The following is sample output from the **show credentials** command:

```
Router# show credentials

Credentials IP: 10.1.1.22
Credentials PORT: 2445
Trustpoint: srstca
```

[Table 9: show credentials Field Descriptions, on page 200](#) describes the fields in the sample output.

**Table 9: show credentials Field Descriptions**

Field	Description
Credentials IP	Cisco Unified CME—IP address where the CTL provider is configured. Cisco Unified SRST—The specified IP address where certificates from Cisco Unified Communications Manager to the SRST router are received.
Credentials PORT	Cisco Unified CME—TCP port for credentials service communication. Default is 2444. Cisco Unified SRST—The port to which the SRST router connects to receive messages from the Cisco Unified IP phones. The port number is from 2000 to 9999. The default port number is 2445.

Field	Description
Trustpoint	<p>Cisco Unified CME—CTL provider trustpoint label that will be used for TLS sessions with the CTL client.</p> <p>Cisco Unified SRST—The name of the trustpoint that is associated with the credentials service between the Cisco Unified Communications Manager client and the SRST router.</p>

## Related Commands

Command	Description
<b>credentials</b>	Enters credentials configuration mode to configure a Cisco Unified CME CTL provider certificate or a Cisco Unified SRST router certificate.
<b>ctl-service admin</b>	Specifies a user name and password to authenticate the CTL client during the CTL protocol.
<b>debug credentials</b>	Sets debugging on the credentials service that runs between a Cisco Unified CME CTL provider and the CTL client or between a Cisco Unified SRST router and Cisco Unified Communications Manager.
<b>ip source-address (credentials)</b>	Enables the Cisco Unified CME or SRST router to receive messages through the specified IP address and port.
<b>trustpoint (credentials)</b>	Specifies the name of the trustpoint to be associated with a Cisco Unified CME CTL provider certificate or with a Cisco Unified SRST router certificate.

# show ephone

To display information about registered Cisco Unified IP phones, use the **show ephone** command in privileged EXEC mode.

**show ephone** [{*mac-address* *phone-type*}]

Syntax Description	
<i>mac-address</i>	(Optional) Displays information for the phone with the specified MAC address.
<i>phone-type</i>	<p>(Optional) Displays information for phones of the specified phone type. Valid types are as follows:</p> <ul style="list-style-type: none"> <li>• <b>7902</b>—Cisco Unified IP Phone 7902G.</li> <li>• <b>7905</b>—Cisco Unified IP Phone 7905G.</li> <li>• <b>7906</b>—Cisco Unified IP Phone 7905G.</li> <li>• <b>7910</b>—Cisco Unified IP Phone 7910 and 7910G.</li> <li>• <b>7911</b>—Cisco Unified IP Phone 7911G.</li> <li>• <b>7912</b>—Cisco Unified IP Phone 7912G.</li> <li>• <b>7914</b>—Cisco Unified IP Phone 7914 Expansion Module.</li> <li>• <b>7920</b>—Cisco Unified Wireless IP Phone 7920.</li> <li>• <b>7921</b>—Cisco Unified Wireless IP Phone 7921.</li> <li>• <b>7931</b>—Cisco Unified Wireless IP Phone 7931G.</li> <li>• <b>7935</b>—Cisco Unified IP Conference Station 7935.</li> <li>• <b>7936</b>—Cisco Unified IP Conference Station 7936.</li> <li>• <b>7940</b>—Cisco Unified IP Phones 7940 and 7940G.</li> <li>• <b>7941</b>—Cisco Unified IP Phone 7941G.</li> <li>• <b>7941GE</b>—Cisco Unified IP Phone 7941G-GE.</li> <li>• <b>7942</b>—Cisco Unified IP Phone 7942.</li> <li>• <b>7945</b>—Cisco Unified IP Phone 7945.</li> <li>• <b>7960</b>—Cisco Unified IP Phones 7960 and 7960G.</li> <li>• <b>7961</b>—Cisco Unified IP Phone 7961G.</li> <li>• <b>7961GE</b>—Cisco Unified IP Phone 7961G-GE.</li> <li>• <b>7962</b>—Cisco Unified IP Phone 7962.</li> <li>• <b>7965</b>—Cisco Unified IP Phone 7965.</li> <li>• <b>7970</b>—Cisco Unified IP Phone 7970G.</li> <li>• <b>7971</b>—Cisco Unified IP Phone 7971G-GE.</li> <li>• <b>7975</b>—Cisco Unified IP Phone 7975.</li> <li>• <b>7985</b>—Cisco Unified IP Phone 7985.</li> <li>• <b>ata</b>—Cisco ATA-186 or Cisco ATA-188.</li> </ul>

## Command Modes

Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.1(5)YD	Cisco ITS 1.0 Cisco SRST 1.0	This command was introduced on the Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
	12.2(2)XT	Cisco ITS 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 1750 and Cisco 1751.
	12.2(8)T	Cisco ITS 2.0 Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
	12.2(8)T1	Cisco ITS 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 2600XM and Cisco 2691.
	12.2(11)T	Cisco ITS 2.01 Cisco SRST 2.01	The <b>ata</b> keyword was added and this command was implemented on the Cisco 1760.
	12.2(11)YT	Cisco ITS 2.1 Cisco SRST 2.1	The <b>7914</b> keyword was added.
	12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	The <b>7902</b> , <b>7905</b> , and <b>7912</b> keywords were added.
	12.3(7)T	Cisco CME 3.1 Cisco SRST 3.1	The <b>7920</b> and <b>7936</b> keywords were added.
	12.3(11)XL	Cisco CME 3.2.1 Cisco SRST 3.2.1	The <b>7970</b> keyword was added.
	12.3(14)T	Cisco CME 3.3 Cisco SRST 3.3	The <b>7971</b> keyword was added, and this command was integrated into Cisco IOS Release 12.3(14)T.
	12.4(4)XC	Cisco Unified CME 4.0 Cisco Unified SRST 4.0	The <b>7911</b> , <b>7941</b> , <b>7941GE</b> , <b>7961</b> , and <b>7961GE</b> keywords were added.
	12.4(9)T	Cisco Unified CME 4.0 Cisco Unified SRST 4.0	The <b>7911</b> , <b>7941</b> , <b>7941GE</b> , <b>7961</b> , and <b>7961GE</b> keywords were integrated into Cisco IOS Release 12.4(9)T.
	12.4(6)XE	Cisco Unified CME 4.0(2)	The <b>7931</b> keyword was added for Cisco Unified CME.
	12.4(4)XC4	Cisco Unified CME 4.0(3)	The <b>7931</b> keyword was added for Cisco Unified CME.
	12.4(11)T	Cisco Unified CME 4.0(3)	The <b>7931</b> keyword for Cisco Unified CME was integrated in Cisco IOS Release 12.4(11)T.
	12.4(11)XJ2	Cisco Unified CME 4.1 Cisco Unified SRST 4.1	The <b>7921</b> and <b>7985</b> keywords were introduced.
	12.4(15)T1	Cisco Unified CME 4.1(1) Cisco Unified SRST 4.1(1)	The <b>7942</b> , <b>7945</b> , <b>7962</b> , <b>7965</b> , and <b>7975</b> keywords were introduced.
	12.4(11)XW3	Cisco Unified CME 4.2 Cisco Unified SRST 4.2	The <b>7942</b> , <b>7945</b> , <b>7962</b> , <b>7965</b> , and <b>7975</b> keywords were introduced.

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1)	Emergency response location (ERL) information displays in the output.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Examples

Significant fields in the output from this command are described in [Table 10: show ephone Field Descriptions, on page 205](#).

The following sample output shows general information for registered phones:

```
Router# show ephone
ephone-1 Mac:0003.E3E7.F627 TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.0.0.2 51671 Telecaster 7940 keepalive 28 max_line 2
button 1: dn 1 number 4444
ephone-2 Mac:0030.94C3.F43A TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.0.0.3 50094 Telecaster 7960 keepalive 28 max_line 6
button 1: dn 3 number 5555
ephone-3 Mac:0003.6B40.99DA TCP socket:[3] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.2.168.200 51879 Telecaster 7960 keepalive 28 max_line 6
button 1: dn 2 number 3333
```

The following sample output shows general information for the phone with the MAC address 0003.E3E7.F627:

```
Router# show ephone 0003.E3E7.F627
ephone-1 Mac:0003.E3E7.F627 TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.0.0.2 51671 Telecaster 7940 keepalive 28 max_line 2
button 1: dn 1 number 4444
Active Call on DN 1:3001 10.0.0.51 31808 to 10.2.159.100 22708
Tx Pkts 452 bytes 41584 Rx Pkts 452 bytes 41584 Lost 0
Jitter 0 Latency 0
```

The following sample output shows information for a phone that has two Cisco Unified IP Phone 7914 Expansion Modules attached. The output shows this module as a subsidiary type in addition to the main **7960** type for the phone itself. Subtype 3 means that one Cisco Unified IP Phone 7914 Expansion Module is attached to the main Cisco Unified IP Phone 7960 or 7960G, and subtype 4 means that two are attached.

```
Router# show ephone 7914
ephone-2 Mac:0007.0EA6.39F8 TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.2.205.206 49278 Telecaster 7960 sub=4 keepalive 2723 max_line 34
button 1: dn 21 number 60021 CH1 IDLE
button 2: dn 22 number 60022 CH1 IDLE
button 7: dn 11 number 60011 CH1 IDLE monitor-ring
button 8: dn 12 number 60012 CH1 IDLE monitor-ring
button 9: dn 13 number 60013 CH1 IDLE monitor-ring
button 10: dn 14 number 60014 CH1 IDLE monitor-ring
button 11: dn 15 number 60015 CH1 IDLE monitor-ring
button 12: dn 16 number 60016 CH1 IDLE monitor-ring
button 13: dn 17 number 60017 CH1 IDLE monitor-ring
```

```

button 14: dn 18 number 60018 CH1 IDLE      monitor-ring
button 15: dn 19 number 60019 CH1 IDLE      monitor-ring
button 16: dn 20 number 60020 CH1 IDLE      monitor-ring
button 17: dn 39 number 60039 CH1 IDLE      CH2 IDLE      monitor-ring
button 18: dn 40 number 60040 CH1 IDLE      CH2 IDLE      monitor-ring
button 19: dn 23 number 60023 CH1 IDLE      monitor-ring
button 20: dn 24 number 60024 CH1 IDLE      monitor-ring
button 21: dn 25 number 60025 CH1 IDLE      monitor-ring
button 22: dn 26 number 60026 CH1 IDLE      monitor-ring
button 23: dn 27 number 60027 CH1 IDLE      monitor-ring
button 24: dn 28 number 60028 CH1 IDLE      monitor-ring
button 25: dn 29 number 60029 CH1 IDLE      monitor-ring
button 26: dn 30 number 60030 CH1 IDLE      monitor-ring
button 27: dn 31 number 60031 CH1 IDLE      CH2 IDLE      monitor-ring
button 28: dn 32 number 60032 CH1 IDLE      CH2 IDLE      monitor-ring
button 29: dn 33 number 60033 CH1 IDLE      CH2 IDLE      monitor-ring
button 30: dn 34 number 60034 CH1 IDLE      CH2 IDLE      monitor-ring
button 31: dn 35 number 60035 CH1 IDLE      CH2 IDLE      monitor-ring
button 32: dn 36 number 60036 CH1 IDLE      CH2 IDLE      monitor-ring
button 33: dn 37 number 60037 CH1 IDLE      CH2 IDLE      monitor-ring
button 34: dn 38 number 60038 CH1 IDLE      CH2 IDLE      monitor-ring

```

The following sample output shows a phone that has a paging-dn and has received a page:

```

Router# show ephone 7910
ephone-2 Mac:0087.0E76.B93C TCP socket:[4] activeLine:0 REGISTERED
mediaActive:1 offhook:0 ringing:0 reset:0 reset_sent:0 paging 1 debug:0
IP:10.50.50.20 49231 Telecaster 7910 keepalive 112 max_line 2 dual-line
button 1:dn 3 number 95021 CH1 IDLE
paging-dn 25

```

Table 10: show ephone Field Descriptions, on page 205 describes significant fields in the output.

**Table 10: show ephone Field Descriptions**

Field	Description
Active Call	An active call is in progress.
activeLine	Line (button) on the phone that is in use. Zero indicates that no line is in use.
auto-dial <i>number</i>	Intercom extension that automatically dials <i>number</i> .
button <i>number</i> : dn <i>number</i>	Phone button number and the extension (ephone-dn) dn-tag number associated with that button.
bytes	Total number of voice data bytes sent or received by the phone.
Called Dn, Calling Dn	Ephone-dn tag numbers of the called and calling ephone-dn. Set to -1 if the call is not to or from an ephone-dn, or if there is no active call.
cfa <i>number</i>	Call-forward-all to <i>number</i> is enabled for this extension.
CH1 CH2	Status of channel 1 and, if this is a dual-line ephone-dn, the status of channel 2.
debug	1 indicates that debug for the phone is enabled. 0 indicates that debug is disabled.
DnD	Do Not Disturb is set on this phone.

Field	Description
DP tag	Not used.
<i>ephone-number</i>	Unique sequence number used to identify this phone during configuration (phone-tag).
IP	Assigned IP address of the Cisco Unified IP phone.
Jitter	Amount of variation (in milliseconds) of the time interval between voice packets received by the Cisco Unified IP phone.
keepalive	Number of keepalive messages received from the Cisco Unified IP phone by the router.
Latency	Estimated playout delay for voice packets received by the Cisco Unified IP phone.
<i>line number</i>	Button number on an IP phone. Line 1 is the button nearest the top of the phone.
Lost	Number of voice packets lost, as calculated by the Cisco Unified IP phone, on the basis of examining voice packet time-stamp and sequence numbers during playout.
Mac	MAC address.
Max Conferences	Maximum number of allowable conference calls and number of active conference calls.
<i>max_line number</i>	Maximum number of line buttons that can be configured on this phone.
mediaActive	1 indicates that an active conversation is in progress. 0 indicates that no conversation is ongoing.
monitor-ring	This button is set up as a monitor button.
number	Telephone or extension number associated with the Cisco Unified IP phone button and its dn-tag.
offhook	1 indicates that the phone is off-hook. 0 indicates that the phone is on-hook.
overlay	This button contains an overlay set. Use <b>show ephone overlay</b> to display the contents of overlay sets.
paging	1 indicates that the phone has received an audio page. 0 indicates that the phone has not received an audio page.
paging-dn	Ephone-dn that is dedicated for receiving audio pages on this phone. The paging-dn number is the number of the paging set to which this phone belongs.
Password	Authentication string that the phone user types when logging in to the web-based Cisco Unified CME GUI.
Port	Port used for TAPI transmissions.



Field	Description
REGISTERED	The Cisco Unified IP phone is active and registered. Alternative states are UNREGISTERED (indicating that the connection to the Cisco Unified IP phone was closed in a normal manner) and DECEASED (indicating that the connection to the Cisco Unified IP phone was closed because of a keepalive timeout).
reset	Pending reset.
reset_sent	Request for reset has been sent to the Cisco Unified IP phone.
ringing	1 indicates that the phone is ringing. 0 indicates that the phone is not ringing.
Rx Pkts	Number of received voice packets.
silent-ring	Silent ring has been set on this button and extension.
socket	TCP socket number used to connect to IP phone.
speed dial <i>speed-tag:digit-string label-text</i>	This button is a speed-dial button, assigned to the speed-dial sequence number <i>speed-tag</i> . It dials <i>digit-string</i> and displays the text <i>label-text</i> next to the button.
sub=3, sub=4	Subtype 3 means that one Cisco Unified IP Phone 7914 Expansion Module is attached to the main Cisco Unified IP Phones 7960 and 7960G, and subtype 4 means that two are attached.
Tag <i>number</i>	Dn-tag number, the unique sequence number that identifies an ephone-dn during configuration, followed by the type of ephone-dn it is.
TAPI Client IP Address	IP address of the PC running the TAPI client.
TCP socket	TCP socket number used to communicate with the Cisco Unified IP phone. This can be correlated with the output of other debug and show commands.
Telecaster <i>model-number</i>	Type and model of the Cisco Unified IP phone. This information is received from the phone during its registration with the router.
Tx Pkts	Number of transmitted voice packets.
Username	Username that the phone user types when logging in to the web-based Cisco Unified CME GUI.

## Related Commands

Command	Description
<b>show ephone-dn</b>	Displays information about Cisco Unified IP phone extensions (ephone-dns).
<b>show ephone login</b>	Displays the login states of all local ephones.
<b>show telephony-service all</b>	Displays systemwide status and information for a Cisco Unified CME system.

# show ephone cfa

To display status and information on the registered phones that have call-forward-all set on one or more of their extensions (ephone-dns), use the **show ephone cfa** command in privileged EXEC mode.

**show ephone cfa**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following is sample output from the **show ephone cfa** command:

```
Router# show ephone cfa
ephone-1 Mac:0007.0EA6.353A TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:1.2.205.205 52491 Telecaster 7960 keepalive 14 max_line 6
button 1: dn 11 number 60011 cfa 60022 CH1 IDLE
button 2: dn 17 number 60017 cfa 60021 CH1 IDLE
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone dn

To display phone information for specified dn-tag or for all dn-tags, use the **show ephone dn** command in privileged EXEC mode.

**show ephone dn** [*dn-tag*]

## Syntax Description

<i>dn-tag</i>	(Optional) Unique sequence number that is used during configuration to identify a particular extension (ephone-dn).
---------------	---

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

Use this command to identify the phone on which a particular dn-tag has been assigned.

## Examples

The following is sample output for the two appearances of DN 5:

```
Router# show ephone dn 5
Tag 5, Normal or Intercom dn
ephone 1, mac-address 0030.94C3.CAA2, line 2
ephone 2, mac-address 0030.94c2.9919, line 3
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone dnd

To display information on the registered phones that have “do not disturb” set on one or more of their extensions (ephone-dns), use the **show ephone dnd** command in privileged EXEC mode.

**show ephone dnd**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

This command does not apply to Cisco Unified SRST.

## Examples

The following is sample output from the **show ephone dnd** command:

```
Router# show ephone dnd
ephone-1 Mac:0007.0EA6.353A TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:1.2.205.205 52486 Telecaster 7960 keepalive 2729 max_line 6 DnD
button 1: dn 11 number 60011 CH1 IDLE
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone login

To display the login states of all local IP phones, use the **show ephone login** command in privileged EXEC mode.

**show ephone login**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

The **show ephone login** command displays whether an ephone has a personal identification number (PIN) and whether its owner has logged in.

## Examples

The following is sample output from the **show ephone login** command. It shows that a PIN is enabled for ephone 1 and that its owner has not logged in. The other phones do not have PINs associated with them.

```
Router# show ephone login
ephone 1      Pin enabled:TRUE      Logged-in:FALSE
ephone 2      Pin enabled:FALSE
ephone 3      Pin enabled:FALSE
ephone 4      Pin enabled:FALSE
ephone 5      Pin enabled:FALSE
ephone 6      Pin enabled:FALSE
ephone 7      Pin enabled:FALSE
ephone 8      Pin enabled:FALSE
ephone 9      Pin enabled:FALSE
```

[Table 11: show ephone login Field Descriptions, on page 211](#) describes significant fields in this output.

**Table 11: show ephone login Field Descriptions**

Field	Description
ephone <i>phone-tag</i>	Phone identified with its unique phone-tag sequence number.
Pin enabled	TRUE indicates that a PIN has been defined for this phone. FALSE indicates that no PIN has been defined for this phone.
Logged-in	TRUE indicates that a phone user is currently logged in on this phone. FALSE indicates that no phone user is currently logged in on this phone.

**Related Commands**

Command	Description
<b>login (telephony-service)</b>	Defines when users of IP phones in a Cisco Unified CME system are logged out automatically.
<b>pin</b>	Sets set a personal identification number (PIN) for an IP phone in a Cisco Unified CME system.
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone moh

To display information about moh files in use, use the **show ephone moh** command in global configuration mode.

## show ephone moh

### Syntax Description

This command has no arguments or keywords

### Command Modes

Global Configuration mode.

### Command History

Cisco IOS Release	Cisco Product	Modification
15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.
15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

### Usage Guidelines

Use the show ephone moh to display information about the different MOH group configured. The following examples displays different MOH group configured.

### Examples

```
Router #show ephone moh
Skinny Music On Hold Status (moh-group 1)
Active MOH clients 0 (max 830), Media Clients 0
File flash:/minuet.au (not cached) type AU Media_Payload_G711Ulaw64k 160 bytes
Moh multicast 239.10.16.6 port 2000
Skinny Music On Hold Status (moh-group 2)
Active MOH clients 0 (max 830), Media Clients 0
File flash:/audio/hello.au type AU Media_Payload_G711Ulaw64k 160 bytes
Moh multicast on 239.10.16.6 port 2000 via 0.0.0.0
Skinny Music On Hold Status (moh-group 3)
Active MOH clients 0 (max 830), Media Clients 0
File flash:/bells.au type AU Media_Payload_G711Ulaw64k 160 bytes
Moh multicast on 239.10.16.5 port 2000 via 0.0.0.0
Skinny Music On Hold Status (moh-group 4)
Active MOH clients 0 (max 830), Media Clients 0
File flash:/3003.au type AU Media_Payload_G711Ulaw64k 160 bytes
Moh multicast on 239.10.16.7 port 2000 via 0.0.0.0
Skinny Music On Hold Status (moh-group 5)
Active MOH clients 0 (max 830), Media Clients 0
File flash:/4004.au type AU Media_Payload_G711Ulaw64k 160 bytes
Moh multicast on 239.10.16.8 port 2000 via 0.0.0.0
```

### Related Commands

Command	Description
show ephone-dn	Displays MOH group information for a phone directory number.
show ephone summary	Displays the information about the MOH files in use
show voice moh-group statistics	Displays the MOH subsystem statistics information

# show ephone offhook

To display information and packet counts for the phones that are currently off hook, use the **show ephone offhook** command in privileged EXEC mode.

**show ephone offhook**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following sample output is displayed when no phone is off hook:

```
Router# show ephone offhook
No ephone in specified type/condition.
```

The following sample output displays information for a phone that is off hook:

```
Router# show ephone offhook
ephone-5 Mac:000A.8A2C.8C6E TCP socket:[20] activeLine:1 REGISTERED
mediaActive:0 offhook:1 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.22.84.71 51228 Telecaster 7960 keepalive 43218 max_line 6
button 1:dn 9 number 59943 CH1 SIEZE silent-ring
button 2:dn 10 number 59943 CH1 IDLE
button 3:dn 42 number A4400 auto dial A4500 CH1 IDLE
button 4:dn 96 number 69943 auto dial 95259943 CH1 IDLE
button 5:dn 75 number 49943 auto dial 49943 CH1 IDLE
speed dial 1:57514 marketing
Active Call on DN 9 chan 1 :59943 0.0.0.0 0 to 0.0.0.0 2000 via 172.30.151.1
G711Ulaw64k 160 bytes vad
Tx Pkts 0 bytes 0 Rx Pkts 0 bytes 0 Lost 0
Jitter 0 Latency 0 callingDn -1 calledDn -1
Username:user1 Password:newuser
```

The following sample output displays information for a phone that has just completed a call:

```
Router# show ephone offhook
ephone-5 Mac:000A.8A2C.8C6E TCP socket:[20] activeLine:1 REGISTERED
mediaActive:1 offhook:1 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.22.84.71 51228 Telecaster 7960 keepalive 43224 max_line 6
button 1:dn 9 number 59943 CH1 CONNECTED silent-ring
button 2:dn 10 number 59943 CH1 IDLE
button 3:dn 42 number A4400 auto dial A4500 CH1 IDLE
button 4:dn 96 number 69943 auto dial 95259943 CH1 IDLE
button 5:dn 75 number 49943 auto dial 49943 CH1 IDLE
speed dial 1:57514 marketing
```



```
Active Call on DN 9 chan 1 :59943 10.23.84.71 22926 to 172.30.131.129 2000 via 172.30.151.1
G711Ulaw64k 160 bytes no vad
Tx Pkts 0 bytes 0 Rx Pkts 0 bytes 0 Lost 0
Jitter 0 Latency 0 callingDn -1 calledDn -1 (media path callID 19288 srcCallID 1
9289)
Username:user1 Password:newuser
```

The **show ephone** command describes significant fields in this output.

**Related Commands**

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone overlay

To display information for the registered phones that have overlay ephone-dns associated with them, use the **show ephone overlay** in privileged EXEC mode.

**show ephone overlay**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

**Usage Guidelines** This command does not apply to Cisco Unified SRST.

**Examples** The following is sample output from the show ephone overlay command:

```
Router# show ephone overlay
ephone-1 Mac:0007.0EA6.353A TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.2.225.205 52486 Telecaster 7960 keepalive 2771 max_line 6
button 1: dn 11 number 60011 CH1 IDLE overlay
button 2: dn 17 number 60017 CH1 IDLE overlay
button 3: dn 24 number 60024 CH1 IDLE overlay
button 4: dn 30 number 60030 CH1 IDLE overlay
button 5: dn 36 number 60036 CH1 IDLE CH2 IDLE overlay
button 6: dn 39 number 60039 CH1 IDLE CH2 IDLE overlay
overlay 1: 11(60011) 12(60012) 13(60013) 14(60014) 15(60015) 16(60016)
overlay 2: 17(60017) 18(60018) 19(60019) 20(60020) 21(60021) 22(60022)
overlay 3: 23(60023) 24(60024) 25(60025) 26(60026) 27(60027) 28(60028)
overlay 4: 29(60029) 30(60030) 31(60031) 32(60032) 33(60033) 34(60034)
overlay 5: 35(60035) 36(60036) 37(60037)
overlay 6: 38(60038) 39(60039) 40(60040)
```

The **show ephone** command describes significant fields in this output. [Table 12: show ephone overlay Field Descriptions, on page 216](#) describes a field that is not in that table.

**Table 12: show ephone overlay Field Descriptions**

Field	Description
overlay <i>number</i>	Displays the contents of an overlay set, including each dn-tag and its associated extension number.

**Related Commands**

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone phone-load

To display information about the phone firmware that is loaded on registered phones, use the **show ephone phone-load** command in privileged EXEC mode.

**show ephone phone-load**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following is sample output that displays the phone firmware versions for all phones in the system:

```
Router# show ephone phone-load
DeviceName          CurrentPhoneLoad      PreviousPhoneLoad      LastReset
=====
SEP0002B9AFC49F     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP003094C2D0B0     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP000C30F03707     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP003094C2999F     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP000A8A2C8C6E     3.2 (2.14)            3.2 (2.14)            Initialized
SEP0002B9AFBB4D     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP00075078627F     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP0002FD659E59     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP00024BCCD626     3.2 (2.14)            3.2 (2.14)            CM-closed-TCP
SEP0008215F88C1     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP000C30F0390C     3.2 (2.14)            3.2 (2.14)            TCP-timeout
SEP003094C30143     3.2 (2.14)            3.2 (2.14)            TCP-timeout
```

[Table 13: show ephone phone-load Field Descriptions, on page 218](#) describes significant fields in this output.

**Table 13: show ephone phone-load Field Descriptions**

Field	Description
DeviceName	Device name.
CurrentPhoneLoad	Current phone firmware version.
PreviousPhoneLoad	Phone firmware version before last phone load.
LastReset	Reason for last reset of phone.

**Related Commands**

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone registered

To display the status of registered phones, use the **show ephone registered** command in privileged EXEC mode.

**show ephone registered**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following is sample output from the show ephone registered command:

```
Router# show ephone registered
ephone-2 Mac:000A.8A5C.5961 TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:192.168.0.50 50349 Telecaster 7940 keepalive 23738 max_line 2
button 1: dn 2 number 91450 CH1 IDLE CH2 IDLE
button 2: dn 0 --
button 3: dn 0 --
button 4: dn 0 --
button 5: dn 0 --
button 6: dn 0 --
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone remote

To display nonlocal phones (phones with no Address Resolution Protocol [ARP] entry), use the **show ephone remote** command in privileged EXEC mode.

**show ephone remote**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

Phones without ARP entries are suspected not to be on the LAN. Use the **show ephone remote** command to identify phones without ARP entries that might have operational issues.

## Examples

The following is sample output that identifies ephone 2 as not having an ARP entry:

```
Router# show ephone remote
ephone-2 Mac:0185.047C.993E TCP socket:[4] activeLine:0 REGISTERED
mediaActive:1 offhook:0 ringing:0 reset:0 reset_sent:0 paging 1 debug:0
IP:10.50.50.20 49231 Telecaster 7910 keepalive 112 max_line 2 dual-line
button 1:dn 3 number 95021 CH1 IDLE
paging-dn 25
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone ringing

To display information on phones that are ringing, use the **show ephone ringing** command in privileged EXEC mode.

**show ephone ringing**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following is sample output from the **show ephone ringing** command:

```
Router# show ephone ringing
ephone-1 Mac:0005.5E37.8090 TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:1 reset:0 reset_sent:0 paging 0 debug:0
IP:10.50.50.10 49329 Telecaster 7960 keepalive 17602 max_line 6
button 1:dn 1 number 95011 CH1 RINGING CH2 IDLE
button 2:dn 2 number 95012 CH1 IDLE
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.



# show ephone summary

To display brief information about Cisco IP phones, use the **show ephone summary** command in privileged EXEC mode.

**show ephone summary**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC (#)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco CME 1.0 Cisco SRST 1.0	This command was introduced.
12.2(8)T	Cisco CME 2.0 Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T .
15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was modified. The output was enhanced to show IPv6 or IPv4 addresses configured on ephones.
15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was modified. The output was enhanced to show voice-class stun-usage information.

## Examples

The following is sample output from the **show ephone summary** command:

```
Router# show ephone summary
hairpin_block:
ephone-1[0] Mac:FCAC.3BAE.0000 TCP socket:[17] activeLine:0 whisperLine:0 REGISTERED
mediaActive:0 whisper_mediaActive:0 startMedia:0 offhook:0 ringing:0 reset:0 reset_sent:0
debug:0 primary_dn: 1*
IP:10.2.1.0 * SCCP Gateway (AN) keepalive 2966 music 0 1:1
port 0/0/0
voice-class stun is enabled
ephone-2[1] Mac:FCAC.3BAE.0001 TCP socket:[18] activeLine:0 whisperLine:0 REGISTERED
mediaActive:0 whisper_mediaActive:0 startMedia:0 offhook:0 ringing:0 reset:0 reset_sent:0
debug:0 primary_dn: 2*
IP:10.2.1.5 * SCCP Gateway (AN) keepalive 2966 music 0 1:2
port 0/0/1
voice-class stun is enabled
ephone-4 Mac:0030.94C3.F43A TCP socket:[-1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.2.1.1 Telecaster 7960 keepalive 59
Max 48, Registered 1, Unregistered 0, Deceased 0, Sockets 1
Max Conferences 4 with 0 active (4 allowed)
Skinny Music On Hold Status
```

```
Active MOH clients 0 (max 72), Media Clients 0  
No MOH file loaded
```

The **show ephone** command describes significant fields in this output.

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone tapiclients

To display status of ephone Telephony Application Programming Interface (TAPI) clients, use the **show ephone tapiclients** command in privileged EXEC mode.

**show ephone tapiclients**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following is sample output from the **show ephone tapiclients** command:

```
Router# show ephone tapiclients
ephone-4 Mac:0007.0EA6.39F8 TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:192.168.1.18 50291 Telecaster 7960 sub=3 keepalive 728 max_line 20
button 1:dn 6 number 1004 CH1 IDLE CH2 IDLE
button 2:dn 1 number 1000 CH1 IDLE shared
button 3:dn 2 number 1000 CH1 IDLE shared
button 7:dn 3 number 1001 CH1 IDLE CH2 IDLE monitor-ring shared
button 8:dn 4 number 1002 CH1 IDLE CH2 IDLE monitor-ring shared
button 9:dn 5 number 1003 CH1 IDLE CH2 IDLE monitor-ring
button 10:dn 91 number A00 auto dial A01 CH1 IDLE
speed dial 1:2000 PAGE-STAFF
speed dial 2:2001 HUNT-STAFF
paging-dn 90
Username:userB Password:ge30qe
Tapi client information
Username:userB status:REGISTERED Socket :[5]
Tapi Client IP address: 192.168.1.5 Port:2295
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone telephone-number

To display information for the phone associated with a specified number, use the **show ephone telephone-number** command in privileged EXEC mode.

**show ephone telephone-number** *number*

## Syntax Description

<i>number</i>	Telephone number that is associated with an ephone.
---------------	---

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

Use this command to find the phone on which a particular telephone number appears.

## Examples

The following is sample output from the **show ephone telephone-number** command:

```
Router# show ephone telephone-number 91400
DP tag: 0, primary
Tag 1, Normal or Intercom dn
    ephone 1, mac-address 000A.0E51.19F0, line 1
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone unregistered

To display information about unregistered phones, use the **show ephone unregistered** command in privileged EXEC mode.

**show ephone unregistered**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Usage Guidelines

There are two ways that an ephone can become unregistered. The first way is when an ephone is listed in the running configuration but no physical device has been registered for that ephone. The second way is when an unknown device was registered at some time after the last router reboot but has since unregistered.

## Examples

The following is sample output from the **show ephone unregistered** command:

```
Router# show ephone unregistered
ephone-1 Mac:0007.0E81.10F0 TCP socket:[-1] activeLine:0 UNREGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:0.0.0.0 0 Unknown 0 keepalive 0 max_line 0
```

The **show ephone** command describes significant fields in this output.

## Related Commands

Command	Description
<b>show ephone</b>	Displays statistical information about registered Cisco IP phones.

# show ephone-dn

To display status and information for a Cisco IP phone destination number or for extensions (ephone-dns) in a Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified Survivable Remote Site Telephony (SRST) environment, use the **show ephone-dn** command in privileged EXEC mode.

**show ephone-dn** [*dn-tag*]

## Syntax Description

<i>dn-tag</i>	(Optional) For Cisco Unified CME, a unique sequence number that is used during configuration to identify a particular extension (ephone-dn).  (Optional) For Cisco Unified SRST, a destination number tag. The destination number can be from 1 to 288.
---------------	---

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco CME 1.0 Cisco SRST 1.0	This command was introduced on the Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
12.2(2)XT	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 1750 and Cisco 1751.
12.2(8)T	Cisco CME 2.0 Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
12.2(8)T1	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 2600XM and Cisco 2691.
12.2(11)T	Cisco CME 2.01 Cisco SRST 2.01	This command was implemented on the Cisco 1760.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

### Cisco Unified CME

The following Cisco Unified CME sample output displays status and information for all ephone-dns:

```
Router# show ephone-dn
50/0/1 CH1 DOWN
EFXS 50/0/1 Slot is 50, Sub-unit is 0, Port is 1
Type of VoicePort is EFXS
Operation State is UP
Administrative State is UP
No Interface Down Failure
Description is not set
Noise Regeneration is enabled
```

```
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to adaptive
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US
Station name None, Station number 91400
Caller ID Info Follows:
Standard BELLCORE
Translation profile (Incoming):
Translation profile (Outgoing):
Digit Duration Timing is set to 100 ms
50/0/2 CH1 IDLE      CH2 IDLE
EFXS 50/0/2 Slot is 50, Sub-unit is 0, Port is 2
Type of VoicePort is EFXS
Operation State is DORMANT
Administrative State is UP
No Interface Down Failure
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to adaptive
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US
Station name None, Station number 91450
Caller ID Info Follows:
```

```

Standard BELLCORE
Translation profile (Incoming):
Translation profile (Outgoing):
Digit Duration Timing is set to 100 ms

```

## Cisco Unified SRST

The following SRST sample output displays status and information for all ephone-dns:

```

Router# show ephone-dn 7
50/0/7 INVALID
EFXS 50/0/7 Slot is 50, Sub-unit is 0, Port is 7
Type of VoicePort is EFXS
Operation State is UP
Administrative State is UP
No Interface Down Failure
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to default
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 4 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 8 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US
Station name None, Station number None
Caller ID Info Follows:
Standard BELLCORE
Voice card specific Info Follows:
Digit Duration Timing is set to 100 ms

```

[Table 14: show ephone-dn Field Descriptions, on page 230](#) describes significant fields in the output from this command.

**Table 14: show ephone-dn Field Descriptions**

Field	Description
Administrative State	Administrative (configured) state of the voice port.



Field	Description
alert	The number of calls that were disconnected by the far-end device when the local IP phone was in the call alerting state (for example, because the far-end phone rang but was not answered and the far-end system decided to drop the call rather than let the phone ring for too long).
answered (incoming)	The number of incoming calls that were actually answered (the phone goes off hook when ringing).
answered (outgoing)	The number of outgoing call attempts that were answered by the far end.
busy	The number of outgoing call attempts that got a busy response.
Call Disconnect Time Out	Not applicable to the Cisco IP phone.
called, calling	Extension numbers of called and calling parties.
Caller ID Info Follows	Information about the caller ID.
Call Ref	A unique per-call identifier used by the SCCP protocol. The Call Ref values are assigned sequentially within the Cisco CME–SCCP interface, so this value also indicates the total number of SCCP calls since the router was last rebooted.
chan	Channel number of an ephone-dn.
CODEC	Codec type.
Companding Type	Not applicable to the Cisco IP phone.
connect	The number of calls that were disconnected by the far-end device when the local IP phone was in the call connected state.
Connection Mode	Not applicable to the Cisco IP phone.
Connection Number	Not applicable to the Cisco IP phone.
Description	Not applicable to the Cisco IP phone.
Digit Duration Timing	Not applicable to the Cisco IP phone.
DN STATE	Ephone-dn tag number and state of the phone line associated with an extension.
Echo Cancellation...	Not applicable to the Cisco IP phone.
Echo Cancel Coverage	Not applicable to the Cisco IP phone.
EFXS	Voice port type.
Far-end disconnect at...	See connect, alert, hold, and ring.
Final Jitter	The final voice packet receive jitter reported by the IP phone at the end of the call.

Field	Description
hold	The number of calls that were disconnected by the far-end device when the local IP phone was in the call hold state (for example, if the caller was left on hold for too long and got tired of waiting).
incoming	The number of incoming calls presented (the phone rings).
In Gain	Not applicable to the Cisco IP phone.
Initial Time Out	Amount of time the system waits for an initial input digit from the caller.
Interdigit Time Out	Amount of time the system waits for a subsequent input digit from the caller.
Last 64 far-end disconnect cause codes	See the Mappings of PSTN Cause Codes to SIP Event table for a list of public switch telephone network (PSTN) cause codes that can be sent as an ISDN cause information element (IE) and the corresponding Session Interface Protocol (SIP) event.
Latency	The final voice packet receive latency reported by the IP phone at the end of the call.
Lost	Number of lost packets.
Music On Hold Threshold	Not applicable to the Cisco IP phone.
No Interface Down Failure	State of the interface.
Noise Regeneration	Not applicable to the Cisco IP phone.
Non Linear...	Not applicable to the Cisco IP phone.
Operation State	Operational state of the voice port.
Out Attenuation	Not applicable to the Cisco IP phone.
outgoing	The number of outgoing call attempts.
Playout-delay Maximum	Not applicable to the Cisco IP phone.
Playout-delay...	Not applicable to the Cisco IP phone.
Port	Port number for the interface associated with the voice interface card.
Region Tone	Not applicable to the Cisco IP phone.
ring	The number of calls that were disconnected by the far-end device when the local IP phone was in the ringing state (for example, if the call was not answered and the caller hung up).
Ringing Time Out	Duration, in seconds, for which ringing is to continue if a call is not answered. Set with the <b>timeouts ringing</b> command.
Rx Pkts, bytes	Number of packets and bytes received during the current or last call.

Field	Description
Signal Level to phone, peak	For G.711 calls only, this parameter indicates the most recent voice signal level in the voice IP packets sent from the router to the IP phone. This parameter is valid only for VoIP or PSTN G.711 calls to the IP phones. This parameter is not valid for calls between local IP phones, or calls that use codecs other than G.711. The peak field indicates the peak signal level seen during the entire call.
Slot	Slot used in the voice interface card for this port.
Station name	Station name.
Station number	Station number.
Sub-unit	Subunit used in the voice interface card for this port.
Tx Pkts, bytes	Number of packets and bytes transmitted during the current call or last call.
Type of VoicePort	Voice port type.
VAD	Voice activity detection.
Voice card specific info	Information specific to the voice card.
VPM STATE	State indication for the VPM software component.
VTSP STATE	State indication for the VTSP software component.
Wait Release Time Out	Time that a voice port stays in the call-failure state while the router sends a busy tone, reorder tone, or out-of-service tone to the port.

The following table lists the PSTN cause codes that can be sent as an ISDN cause information element (IE) and the corresponding SIP event for each. These are the far-end disconnect cause codes listed in the output for the **show ephone-dn statistics** command.

**Table 15: Mappings of PSTN Cause Codes to SIP Events**

PSTN Cause Code	Description	SIP Event
1	Unallocated number	410 Gone
3	No route to destination	404 Not found
16	Normal call clearing	BYE
17	User busy	486 Busy here
18	No user responding	480 Temporarily unavailable
19	No answer from the user	
21	Call rejected	603 Decline

PSTN Cause Code	Description	SIP Event
22	Number changed	302 Moved temporarily
27	Destination out of order	404 Not found
28	Address incomplete	484 Address incomplete
29	Facility rejected	501 Not implemented
31	Normal unspecified	404 Not found
34	No circuit available	503 Service unavailable
38	Network out of order	
41	Temporary failure	
42	Switching equipment congestion	
44	Requested channel not available	
47	Resource unavailable	
55	Incoming class barred within CUG	603 Decline
57	Bearer capability not authorized	501 Not implemented
58	Bearer capability not presently available	
63	Service or option unavailable	503 Service unavailable
65	Bearer cap not implemented	501 Not implemented
79	Service or option not implemented	
87	User not member of CUG	603 Decline
88	Incompatible destination	400 Bad Request
95	Invalid message	
102	Recover on timer expiry	408 Request timeout
111	Protocol error	400 Bad request
127	Interworking unspecified	500 Internal server error
Any code other than those listed above	500 Internal server error	

## Related Commands

Command	Description
<b>show ephone-dn callback</b>	Displays information about pending callbacks in a Cisco Unified CME or a Cisco Unified SRST environment.

Command	Description
<b>show ephone-dn loopback</b>	Displays information about loopback ephone-dns that have been created in a Cisco Unified CME or a Cisco Unified SRST environment.
<b>show ephone-dn statistics</b>	Displays display call statistics for a Cisco IP destination or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.
<b>show ephone-dn summary</b>	Displays brief information about Cisco IP phone destination numbers or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.

# show ephone-dn callback

To display information about pending callbacks in a Cisco Unified Communications Manager Express (Cisco Unified CME) or a Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST) environment, use the **show ephone-dn callback** command in privileged EXEC mode.

**show ephone-dn callback**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following sample output shows a callback placed by ephone-dn 1 against ephone-dn 3. Ephone-dn 3 has its channel 1 on hold and has just seized dial tone on its channel 2.

```
Router# show ephone-dn callback
DN 3 (95021) CallBack pending to DN 1 (95021) for ephone-1 age 7 seconds
State for DN 3 is CH1 HOLD      CH2 SIEZE
```

The following sample output shows a callback placed by ephone-dn 1 against ephone-dn 3. Ephone-dn 3 has a call in progress on channel 1.

```
Router# show ephone-dn callback
DN 3 (95021) CallBack pending to DN 1 (95021) for ephone-1 age 8 seconds
State for DN 3 is CH1 CONNECTED
```

Significant fields in the output from this command are described in [Table 16: show ephone-dn callback Field Descriptions, on page 236](#).

**Table 16: show ephone-dn callback Field Descriptions**

Field	Description
DN 3 (95021) CallBack pending to DN 1 (95021)	Callback originator is the extension with the dn-tag 1 (in this example), and the callback has been placed on the extension with the dn-tag 3 and the number 95021.
age	Number of seconds since the callback was placed.
State for DN 3 is CH1... CH2...	Call states for channel 1 and channel 2, if any, of the extension that the callback is for.

**Related Commands**

Command	Description
<b>show ephone-dn</b>	Displays status and information for a Cisco IP phone destination number or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.

# show ephone-dn loopback

To display information about loopback ephone-dns that have been created in a Cisco Unified Communications Manager Express (Cisco Unified CME) or a Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST) environment, use the **show ephone-dn loopback** command in privileged EXEC mode.

**show ephone-dn loopback**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco CME 1.0 Cisco SRST 1.0	This command was introduced on the Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
12.2(2)XT	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 1750 and Cisco 1751.
12.2(8)T	Cisco CME 2.0 Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
12.2(8)T1	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 2600XM and Cisco 2691.
12.2(11)T	Cisco CME 2.01 Cisco SRST 2.01	This command was implemented on the Cisco 1760.

## Examples

The following example displays information for a loopback using ephone-dn 21 and ephone-dn 22:

```
Router# show ephone-dn loopback
LOOPBACK DN status (min 21, max 22):
DN 21 51... Loopback to DN 22 CH1 IDLE
CallingDn -1 CalledDn -1 Called Calling G711Ulaw64k
Strip NONE, Forward 2, prefix 10 retry 10 Media 0.0.0.0 0
callID 0 srcCallID 0 ssrc 0 vector 0
DN 22 11... Loopback to DN 21 CH1 IDLE
CallingDn -1 CalledDn -1 Called Calling G711Ulaw64k
Strip NONE, Forward 2, prefix 50 retry 10 Media 0.0.0.0 0
callID 0 srcCallID 0 ssrc 0 vector 0
```

Significant fields in the output from this command are described in [Table 17: show ephone-dn loopback Field Descriptions, on page 238](#), in alphabetical order.

**Table 17: show ephone-dn loopback Field Descriptions**

Field	Description
Called, Calling	Called number and calling number when there is a call present.



Field	Description
CalledDn, CallingDn	Ephone-dn tag numbers of the called and calling ephone-dn. Set to -1 if the call is not to or from an ephone-dn, or if there is no active call.
callID	Internal call reference. This usage is the same as in other Cisco IOS voice gateway commands.
DN	Ephone-dn tag (sequence number).
Forward	Number of digits in the original called number to forward to the other ephone-dn in the loopback-dn pair.
G711...	G711Ulaw64k indicates G.711 codec, mu-law, 64000-bit stream. G711alaw64k indicates G.711 codec, A-law, 64000-bit stream.
Loopback to ...	Indicates the opposite ephone-dn in the loopback pair and the status of that ephone-dn.
Media	IP destination address, if any, for any voice packets that are passing through the loopback DN.
min, max	Lowest and highest dn-tag numbers of ephone-dns that are configured as loopback-dns.
prefix	Digit string to add to the beginning of forwarded called numbers.
retry	Number of seconds to wait before retrying the loopback target when is it busy.
srcCallID	Internal call reference for the destination.
ssrc	Real-time transport protocol (RTP) synchronization source (SSRC) of the most recent RTP packet.
Strip	Number of leading digits to strip before forwarding to the other extension in the loopback-dn pair.
vector	<p>The following values describe the media path for voice packets that pass through the loopback-dn:</p> <ul style="list-style-type: none"> <li>• 0—No media path or not a loopback-dn path (inactive).</li> <li>• 1—Normal path. Loopback-dn has identified the final media destination as a local IP phone. The media IP address field shows a valid, non-zero value.</li> <li>• 2—Hairpin. Media packets are routed back through paired loopback-dns. The final destination is not known. For example, this can be a VoIP-to-VoIP call path by a loopback-dn.</li> <li>• 3—Hairpin. The final destination is an ephone-dn in a special mode such as paging.</li> <li>• 4—Loopback-dn chain has been detected, in which two loopback-dn pairs have been connected together.</li> <li>• 5—Loopback-dn chain has been detected in which more than two loopback-dn pairs are connected in series.</li> </ul>

**Related Commands**

Command	Description
<b>loopback-dn</b>	Creates a virtual loopback voice port (loopback-dn) to establish a demarcation point for VoIP voice calls and supplementary services.
<b>show ephone-dn</b>	Displays status and information for a Cisco IP phone destination number or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.

# show ephone-dn statistics

To display call statistics for a Cisco IP destination or for extensions (ephone-dns) in a Cisco Unified Communications Manager Express (Cisco Unified CME) or a Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST) environment, use the **show ephone-dn** command in privileged EXEC mode.

**show ephone-dn** [*dn-tag*] **statistics**

<b>Syntax Description</b>	<i>dn-tag</i>	(Optional) Unique sequence number that is used during configuration to identify a particular extension (ephone-dn).
	<b>statistics</b>	Displays voice quality statistics on calls for a specified extension or for all extensions.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ1	Cisco CME 3.0 Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0 Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

## Examples

The following sample output displays statistics for all extensions (ephone-dns) in a Cisco Unified CME system. There are two ephone-dns (DN1 and DN3) in this example.

```
Router# show ephone-dn statistics
Total Calls 103
Stats may appear to be inconsistent for conference or shared line cases
DN 1 chan 1 incoming 36 answered 21 outgoing 60 answered 30 busy 6
Far-end disconnect at:connect 29 alert 18 hold 7 ring 15
Last 64 far-end disconnect cause codes
17 17 17 17 17 17 16 16 16 16 16 16 16 16 16 16
16 16 16 16 65 16 65 65 65 65 16 65 65 65 16 16
16 16 16 16 16 16 16 16 16 16 16 16 16 16 65 47 65
47 47 16 16 16 16 16 16 16 16 16 16 16 16 16 16
local phone on-hook
DN 1 chan 1 (95011) voice quality statistics for last call
Call Ref 103 called 91500 calling 95011
Total Tx Pkts 0 bytes 0 Rx Pkts 0 bytes 0 Lost 0
Final Jitter 30 Latency 0 Lost 0
Signal Level to phone 0 (-78 dB) peak 0 (-78 dB)
Packets counted by router 0
DN 1 chan 2 incoming 0 answered 0 outgoing 1 answered 0 busy 0
Far-end disconnect at:connect 0 alert 0 hold 0 ring 0
Last 64 far-end disconnect cause codes
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
local phone on-hook
DN 1 chan 2 (95011) voice quality statistics for last call
Call Ref 86 called  calling
```

**show ephone-dn statistics**

```

Total Tx Pkts 0 bytes 0 Rx Pkts 0 bytes 0 Lost 0
Final Jitter 0 Latency 0 Lost 0
Signal Level to phone 0 (-78 dB) peak 0 (-78 dB)
Packets counted by router 0
DN 3 chan 1 incoming 0 answered 0 outgoing 1 answered 1 busy 0
Far-end disconnect at:connect 0 alert 0 hold 0 ring 0
Last 64 far-end disconnect cause codes
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
DN 3 chan 1 (95021) voice quality statistics for current call
Call Ref 102 called 94011 calling 95021
Current Tx Pkts 241 bytes 3133 Rx Pkts 3304 bytes 515023 Lost 0
Jitter 30 Latency 0
Worst Jitter 30 Worst Latency 0
Signal Level to phone 201 (-39 dB) peak 5628 (-12 dB)
Packets counted by router 3305

```

The following sample output displays voice quality statistics for the ephone-dn with dn-tag 2:

```

Router# show ephone-dn 2 statistics
DN 2 chan 1 incoming 0 answered 0 outgoing 2 answered 0 busy 0
Far-end disconnect at: connect 0 alert 0 hold 0 ring 0
Last 64 far-end disconnect cause codes
28 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
local phone on-hook
DN 2 chan 1 (91450) voice quality statistics for last call
Call Ref 2 called calling
Total Tx Pkts 0 bytes 0 Rx Pkts 0 bytes 0 Lost 0
Final Jitter 0 Latency 0 Lost 0
Signal Level to phone 0 (-78 dB) peak 0 (-78 dB)
Packets counted by router 0

```

The **show ephone-dn** command describes significant fields in the output from this command.

**Related Commands**

Command	Description
<b>show ephone-dn</b>	Displays status and information for a Cisco IP phone destination number or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.

# show ephone-dn summary

To display brief information about Cisco IP phone destination numbers or for extensions (ephone-dns) in a Cisco Unified Communications Manager Express (Cisco Unified CME) or a Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST) environment, use the **show ephone-dn summary** command in privileged EXEC mode.

**show ephone-dn summary**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco CME 1.0 Cisco SRST 1.0	This command was introduced on the Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
12.2(2)XT	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 1750 and Cisco 1751.
12.2(8)T	Cisco CME 2.0 Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
12.2(8)T1	Cisco CME 2.0 Cisco SRST 2.0	This command was implemented on the Cisco 2600XM and Cisco 2691.
12.2(11)T	Cisco CME 2.01 Cisco SRST 2.01	This command was implemented on the Cisco 1760.

## Examples

The following is example output from the **show ephone-dn summary** command:

```
Router# show ephone-dn summary
PORT      DN STATE    CODEC    VAD VTSP STATE          VPM STATE
=====
50/0/1    DOWN       -        -  -             EFXS_ONHOOK
50/0/2    DOWN       -        -  -             EFXS_ONHOOK
50/0/3    DOWN       -        -  -             EFXS_ONHOOK
50/0/4    INVALID    -        -  -             EFXS_INIT
50/0/5    INVALID    -        -  -             EFXS_INIT
50/0/6    INVALID    -        -  -             EFXS_INIT
```

[Table 18: show ephone-dn summary Field Descriptions, on page 244](#) describes significant fields in the output from this command.

Table 18: show ephone-dn summary Field Descriptions

Field	Description
CODEC	Type of codec.
DN STATE	Status of the ephone-dn.
EFXS	Voice port type.
PORT	Port number (virtual) for this interface. The number that follows the last slash in the port number is the ephone-dn tag. For example, if the port number is 50/0/1, the dn-tag is 1.
VAD	Voice activity detection status.
VPM STATE	State indication for the voice port module (VPM) software component.
VTSP STATE	State indication for the voice telephony service provider (VTSP) software component.

## Related Commands

Command	Description
<b>show ephone-dn</b>	Displays status and information for a Cisco IP phone destination number or for extensions (ephone-dns) in a Cisco Unified CME or a Cisco Unified SRST environment.

# show sip-ua status registrar

To display all the SIP endpoints that are currently registered with the contact address, use the **show sip-ua status registrar** command in privileged EXEC mode.

**show sip-ua status registrar**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
15.0(1)XA	Cisco SIP SRST 8.0	This command was updated to display the signaling transport protocol.

## Examples

The following is a sample output from this command:

```
Router# show sip-ua status registrar
Line      destination      expires(sec)  contact
transport call-id
peer
=====
3029991   10.2.30.108      388          10.2.30.108
TLS      00120014-4ae40064-f1a3e9fe-8d301072@10.2.30.1
40004
3029993   10.2.30.103      382          10.2.30.103
TCP      001bd433-1c840052-655cd596-4e992eed@10.2.30.1
40011
3029982   10.2.30.106      406          10.2.30.106
UDP      001d452c-dbbba0056-0481d321-1f3f848d@10.2.30.1
40001
```

[Table 19: show sip-ua status registrar Field Descriptions, on page 245](#) describes the significant fields shown in this output.

**Table 19: show sip-ua status registrar Field Descriptions**

Field	Description
call-id	A unique ID assigned for each call.
contact	The contact IP address provided by the Cisco SIP IP phone.
destination	The destination IP address.
expires (sec)	The amount of time, in seconds, until registration expires.
Line	The phone number that maintains registration of SIP devices.

 **show sip-ua status registrar**

Field	Description
peer	When an SIP IP phone registers, an associated VoIP dial peer is automatically generated. This dial peer contains general information on how to contact the phone. The information includes the directory number or numbers associated with the phone and the IP address and protocol of the phone.

---

**Related Commands**

Command	Description
<b>registrar server</b>	Enables SIP registrar functionality.



# show sip-ua connections tcp tls detail

To display the status, port details, and negotiated ciphers for SIP OAuth.



**Note** The Conn-Id that is suffixed with \* is the client connections using SIP OAuth port.

## show sip-ua connections tcp tls detail

This command has no arguments or keywords.

### Command Modes

Privileged EXEC (#)

### Command History

Release	Modification
Cisco IOS XE Cupertino 17.8.1a	The command output is updated to display the status, port details, and negotiated ciphers for SIP OAuth.
Cisco IOS XE 16.10.1	The command output for <b>show sip-ua connections tcp tls detail</b> was updated to display the Cipher and the Curve-Size.

```

Router#show sip-ua connections tcp tls detail
Total active connections      : 4
No. of send failures         : 0
No. of remote closures       : 8
No. of conn. failures        : 0
No. of inactive conn. ageouts : 0
TLS client handshake failures : 0
TLS server handshake failures : 0

-----Printing Detailed Connection Report-----
Note:
** Tuples with no matching socket entry
  - Do 'clear sip <tcp[tls]/udp> conn t ipv4:<addr>:<port>'
    to overcome this error condition
++ Tuples with mismatched address/port entry
  - Do 'clear sip <tcp[tls]/udp> conn t ipv4:<addr>:<port> id <connid>'
    to overcome this error condition
* Connections with SIP OAuth ports

Remote-Agent:10.5.10.200, Connections-Count:0

Remote-Agent:10.5.10.201, Connections-Count:0

Remote-Agent:10.5.10.202, Connections-Count:0

Remote-Agent:10.5.10.212, Connections-Count:1
  Remote-Port Conn-Id Conn-State  WriteQ-Size Local-Address TLS-Version Cipher
      Curve
=====
52248      27 Established           0          -      TLSv1.2
ECDHE-RSA-AES256-GCM-SHA384 P-256

Remote-Agent:10.5.10.213, Connections-Count:1

```

## show sip-ua connections tcp tls detail

```

Remote-Port Conn-Id Conn-State WriteQ-Size Local-Address TLS-Version Cipher
Curve
=====

```

```

=====
50901      28* Established      0      -      TLSv1.2
ECDHE-RSA-AES256-GCM-SHA384 P-256

```

Remote-Agent:10.5.10.209, Connections-Count:1

```

Remote-Port Conn-Id Conn-State WriteQ-Size Local-Address TLS-Version Cipher
Curve
=====

```

```

=====
51402      29* Established      0      -      TLSv1.2
ECDHE-RSA-AES256-GCM-SHA384 P-256

```

Remote-Agent:10.5.10.204, Connections-Count:1

```

Remote-Port Conn-Id Conn-State WriteQ-Size Local-Address TLS-Version Cipher
Curve
=====

```

```

=====
50757      30* Established      0      -      TLSv1.2
ECDHE-RSA-AES256-GCM-SHA384 P-256

```

Remote-Agent:10.5.10.218, Connections-Count:0

----- SIP Transport Layer Listen Sockets -----

```

Conn-Id      Local-Address
=====
0      [0.0.0.0]:5061:
2      [0.0.0.0]:5090:

```

# show voice emergency

To display the IP address, subnet mask, and ELIN for each emergency response location, use the **show voice emergency** command in user EXEC or privileged EXEC mode.

**show voice emergency**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values

**Command Modes**  
User EXEC (>)  
Privileged EXEC (#)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command displays the IP address, subnet mask, and ELIN for each emergency response location.

**Examples** The following example shows a sample output which includes IP mask and ELIN information for each ERL:

```

EEMERGENCY RESPONSE LOCATIONS
ERL
1 | ELIN 1 | ELIN2 | SUBNET 1 | SUBNET 2
  | 6045550101 | | 10.0.0.0 | 255.0.0.0
2 | 6045550102 | 6045550106 | 192.168.0.0 | 255.255.0.0
3 | | 6045550107 | 172.16.0.0 | 255.255.0.0
4 | 6045550103 | | 192.168.0.0 | 255.255.0.0
5 | 6045550105 | | 209.165.200.224 | 255.0.0.0
6 6045550198 | | 6045550109 | 209.165.201.0 | 255.255.255.224

```

Related Commands	Command	Description
	<b>voice emergency response location</b>	Creates a tag for identifying an ERL for E911 services.

# show voice emergency addresses

To display address information for each emergency response location, use the **show emergency addresses** command in user EXEC or privileged EXEC mode.

**show voice emergency addresses**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values

**Command Modes**  
User EXEC (>)  
Privileged EXEC (#)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command displays the physical address of each emergency response location.

**Examples** The following example shows a sample output which includes physical address information for the ERL:

```
Router# show voice emergency addresses
3850 Zanker Rd, San Jose,604,5550101
225 W Tasman Dr, San Jose,604,5550102
275 W Tasman Dr, San Jose,604,5550103
518 Bellew Dr,Milpitas,604,5550104
400 Tasman Dr,San Jose,604,5550105
3675 Cisco Way,San Jose,604,5550106
```

Related Commands	Command	Description
	<b>address</b>	Specifies a comma separated text entry (up to 250 characters) of an ERL's civic address.
	<b>show voice emergency all</b>	Displays all emergency response location information.
	<b>voice emergency response location</b>	Creates a tag for identifying an ERL for E911 services.

# show voice emergency all

To display all emergency response location information, use the **show voice emergency all** command in user EXEC or privileged EXEC mode.

**show voice emergency all**

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Default</b>	No default behavior or values
------------------------	-------------------------------

<b>Command Modes</b>	User EXEC (>) Privileged EXEC (#)
----------------------	--------------------------------------

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

<b>Usage Guidelines</b>	This command displays all information configured for each emergency response location.
-------------------------	--

<b>Examples</b>	The following example shows a sample output, displaying all ERL-related information for ERL 1 and 3.
-----------------	--

```
VOICE EMERGENCY RESPONSE SETTINGS
  Callback Number: 6045550103
  Emergency Line ID Number: 6045550155
  Expiry: 2 minutes
  Logging Enabled
EMERGENCY RESPONSE LOCATION 1
  Name: Cisco Systems 1
  Address: 3850 Zanker Rd, San Jose,elin.1.3,elin.4.10
  IP Address 1: 209.165.200.226 IP mask 1: 255.255.255.254
  IP Address 2: 209.165.202.129 IP mask 2: 255.255.0.0
  Emergency Line ID 1: 6045550180
  Emergency Line ID 2:
  Last Caller: 6045550188 [Jan 30 2007 16:05.52 PM]
  Next ELIN For Emergency Call: 6045550166
EMERGENCY RESPONSE LOCATION 3
  Name: Cisco Systems 3
  Address: 225 W Tasman Dr, San Jose,elin.1.3,elin.4.10
  IP Address 1: 209.165.202.133 IP mask 1: 255.255.0.0
  IP Address 2: 209.165.202.130 IP mask 2: 255.0.0.0
  Emergency Line ID 1:
  Emergency Line ID 2: 6045550150
  Last Caller:
  Next ELIN For Emergency Call: 6045550151
```

**Related Commands**

Command	Description
<b>address</b>	Specifies a comma separated text entry (up to 250 characters) of an ERL's civic address.
<b>elin</b>	Specifies a PSTN number that will replace the caller's extension.
<b>name</b>	Specifies a string (up to 32-characters) used internally to identify or describe the emergency response location.
<b>subnet</b>	Defines which IP phones are part of this ERL.
<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the E911 services.

# show voice emergency callers

To display a list of 911 calls made over the last three hours, use the **show emergency callers** command in privileged EXEC mode.

**show voice emergency callers**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No list of 911 calls is displayed.

**Command Modes** Privileged EXEC (#)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was added to Cisco Unified CME.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command displays a list of all 911 calls made in the past three hours. The list shows the originating number, the ELIN used, and the time the call was placed.

## Examples

The following example shows a sample output, which includes the originating number, the ELIN used, and the time the call was placed:

```
router# show voice emergency callers
EMERGENCY CALLS CALL BACK TABLE
ELIN                | CALLER                | TIME
6045550181          | 8155550151            | Oct 12 2006 04:05:21
6045550182          | 8155550152            | Oct 12 2006 04:05:21
```

Related Commands	Command	Description
	<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the enhanced 911 service.

# show voice emergency zone

To display each emergency response zone's list of locations in the order of priority, use the **show voice emergency zone** command in user EXEC or privileged EXEC mode.

**show voice emergency zone**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values

**Command Modes**  
User EXEC (>)  
Privileged EXEC (#)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command displays a list of the locations, in priority order, of all configured emergency response zones.

**Examples** The following example shows a sample output which displays the ERL locations for emergency response zones 90 and 100.

```
EMERGENCY RESPONSE ZONES
zone 90
  location 4
  location 5
  location 6
  location 7
  location 2147483647
zone 100
  location 1 priority 1
  location 2 priority 2
  location 3 priority 3
```

Related Commands	Command	Description
	<b>location</b>	Identifies locations within an emergency response zone.
	<b>voice emergency response location</b>	Creates a tag for identifying an ERL for the enhanced 911 service.
	<b>voice emergency response zone</b>	Creates an emergency response zone within which ERLs can be grouped.



# show voice moh-group

To display information about voice moh-groups, use the **show voice moh-group** command in in privileged EXEC mode.

**show voice moh-group**

<b>Syntax Description</b>	This command has no arguments or keywords
---------------------------	---

<b>Command Modes</b>	Privileged EXEC (#)
----------------------	---------------------

Command History	Cisco IOS Release	Cisco Product	Modification
	15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.
	15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

## Examples

The following sample output shows general information about voice moh-groups in Cisco Unified CME or Cisco Unified SRST.

```
Router# show voice moh-group
voice moh-group 1
  description this moh group is for sales
  moh hello.au
  multicast moh 239.1.1.1 port 16386 route 239.1.1.3 239.1.1.3
  extension-range 1000 to 1999
  extension-range 2000 to 2999
  extension-range 3000 to 3999
  extension-range 20000 to 22000
  extension-range A1000 to A1999
voice moh-group 2
  description (not configured)
  moh minuet.au
  multicast moh 239.23.4.10 port 2000
  extension-range 7000 to 7999
  extension-range 8000 to 8999
voice moh-group 3
  description This is for marketing
  moh happy.au
  multicast moh 239.15.10.1 port 3000
  extension-range 9000 to 9999
voice moh-group 4
  description (not configured)
  moh sun.au
  multicast moh 239.16.12.1 port 4000
  extension-range 10000 to 19999
voice moh-group 5
  description (not configured)
  moh flower.wav
  multicast moh 239.12.1.2 port 5000
  extension-range ABCD to DECF
  extension-range 0012 to 0024
```

**show voice moh-group**

```

extension-range 0934 to 0964
=== Total of 5 voice moh-groups ===
e

```

**Examples**

Command	Description
<b>showcall-manager-fallback all</b>	<b>Displays the detailed configuration of all Cisco IP phones, directory numbers, voice ports, and dial peers in your network during Cisco Unified Communications Manager fallback.</b>
show ephone summary	Displays the information about the MOH files in use
show voice moh-group statistics	Displays the MOH subsystem statistics information

# show voice moh-group statistics

To display the MOH subsystem statistics information, use the **show voice moh-group** command in privileged EXEC mode.

**show voice moh-group statistics**

**Syntax Description** This command has no arguments or keywords

**Command Modes** Privileged EXEC (#)

Command History	Cisco IOS Release	Cisco Product	Modification
	15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.
	15.1(1)T	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

## Examples

In the following example, the MOH Group Streaming Interval Timing Statistics shows the media packet counts during streaming intervals.

Each packet counter is of 32 bit size and holds a count limit of 4294967296 intervals. This means that with 20 milliseconds packet interval (for G.711), the counters restart from 0 any time after 2.72 years (2 years 8 months). You must use the `clear voice moh-group statistics` once in every two years to reset the packet counters.

MOH Group Packet Transmission Timing Statistics shows the maximum and minimum amount of time (in microseconds) taken by the MOH groups to send out media packets.

The MOH Group Loopback Interval Timing Statistics is available when loopback interface is configured as part of the multicast MOH routes in Cisco Unified SRST. These counts are loopback packet counts within certain streaming timing intervals.

```

router# show voice moh-group statistics
MOH Group Streaming Interval Timing Statistics:
Grp#  ~19 msec    20~39    40~59    60~99    100~199    200+ msec
=====
0:      25835    17559966    45148         0         0         1
1:      19766    17572103    39079         0         0         1
2:      32374    17546886    51687         0         0         1
3:      27976    17555681    47289         0         0         1
4:      34346    17542940    53659         0         0         1
5:      14971    17581689    34284         0         0         1
MOH Group Packet Transmission Timing Statistics:
Grp#  max(usec)  min(usec)
=====
0:         97         7.
1:         95         7.
2:         97         7.
3:         96         7.
4:         94         7.
5:         67         7.

```

show voice moh-group statistics

```
MOH Group Loopback Interval Timing Statistics:
loopback event array: svc_index=1542, free_index=1549, max_q_depth=31
Grp#  ~19 msec    20~39    40~59    60~99    100~199    200+ msec
=====
0:    8918821    8721527    10023      0         1         1
1:    9007373    8635813     7184      0         1         1
2:    8864760    8772851    12758      0         1         1
3:    8924447    8715457    10464      0         1         1
4:    8858393    8778957    13017      0         1         1
5:    9005511    8639936     4919      0         1         1
Statistics collect time: 4 days 2 hours 5 minutes 39 seconds.
```

Related Commands

Command	Description
show ephone-dn	Displays MOH group information for a phone directory number.
show ephone summary	Displays the information about the MOH files in use
show voice moh-group	Displays the MOH groups configured

# show voice register all

To display all Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) or Cisco Unified Communications Manager Express (Cisco Unified CME) configurations and register information, use the **show voice register all** command in privileged EXEC mode.

**show voice register all**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 and Cisco SIP SRST 3.4	This command was added to Cisco CME.
15.0(1)XA	Cisco SIP SRST 8.0	This command was updated to display the signaling transport protocol.
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SIP SRST 8.1	This command was modified. The output display was modified.

## Examples

### Cisco Unified SIP SRST

The following is an example of show voice register all command:

```
Router# show voice register all
VOICE REGISTER GLOBAL
=====
CONFIG [Version=8.1]
=====
Version 8.1
Mode is srst
Max-pool is 10
Max-dn is 10
Outbound-proxy is enabled and will use global configured value
Security Policy: DEVICE-DEFAULT
timeout interdigit 10
network-locale[0] US      (This is the default network locale for this box)
network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US        (This is the default user locale for this box)
user-locale[1] US
```

## show voice register all

```

user-locale[2] US
user-locale[3] US
user-locale[4] US   Active registrations   : 0
Total SIP phones registered: 0
Total Registration Statistics
  Registration requests   : 0
  Registration success    : 0
  Registration failed     : 0
  unRegister requests     : 0
  unRegister success      : 0
  unRegister failed       : 0
  Attempts to register
    after last unregister : 0
  Last register request time :
  Last unregister request time :
  Register success time      :
  Unregister success time    :
VOICE REGISTER DN
=====
Dn Tag 1
Config:
  Number is 45111
  Preference is 0
  Huntstop is disabled
  Pool 1   has this DN configured for line 1
Dn Tag 2
Config:
  Number is 45112
  Preference is 0
  Huntstop is disabled
  Pool 2   has this DN configured for line 1
Dn Tag 3
Config:
  Number is 45113
  Preference is 0
  Huntstop is disabled
  Pool 3   has this DN configured for line 1, 2
Dn Tag 4
Config:
Dn Tag 7
Config:
  Number is 45110
  Preference is 0
  Huntstop is disabled
  Pool 1   has this DN configured for line 4
Dn Tag 8
Config:
  Pool 1   has this DN configured for line 3
VOICE REGISTER POOL
=====
Pool Tag 1
Config:
  Mac address is 001B.535C.D410
  Number list 1 : DN 1
  Number list 3 : DN 8
  Number list 4 : DN 7
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  kpml signal is disabled
  Lpcor Type is none
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:

```

```

Active registrations : 0
Total SIP phones registered: 0
Total Registration Statistics
  Registration requests : 0
  Registration success : 0
  Registration failed : 0
  unRegister requests : 0
  unRegister success : 0
  unRegister failed : 0
  Attempts to register
    after last unregister : 0
  Last register request time :
  Last unregister request time :
  Register success time :
  Unregister success time :
Pool Tag 2
Config:
  Mac address is 0015.C68E.6D13
  Number list 1 : DN 2
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  kpml signal is disabled
  Lpcor Type is none
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
  Active registrations : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests : 0
    Registration success : 0
    Registration failed : 0
    unRegister requests : 0
    unRegister success : 0
    unRegister failed : 0
    Attempts to register
      after last unregister : 0
    Last register request time :
    Last unregister request time :
    Register success time :
    Unregister success time :
Pool Tag 3
Config:
  Mac address is 0021.5553.8998
  Number list 1 : DN 3
  Number list 2 : DN 3
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  kpml signal is enabled
  Lpcor Type is none
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
  Active registrations : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests : 0
    Registration success : 0
    Registration failed : 0
    unRegister requests : 0
    unRegister success : 0
    unRegister failed : 0

```

```

Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time :
Unregister success time :

```

## Cisco Unified CME

The following is an example of show voice register all command :

```

Router# show voice register all
1) show voice register all
VOICE REGISTER GLOBAL
=====
CONFIG [Version=8.1]
=====
Version 8.1
Mode is cme
Max-pool is 10
Max-dn is 10
Outbound-proxy is enabled and will use global configured value
Security Policy: DEVICE-DEFAULT
Source-address is 8.3.3.5 port 5060
Time-format is 12
Date-format is M/D/Y
Time-zone is 5
Hold-alert is disabled
Mwi stutter is disabled
Mwi registration for full E.164 is disabled
Forwarding local is enabled
Privacy is enabled
Privacy-on-hold is disabled
Dst auto adjust is enabled
    start at Apr week 1 day Sun time 02:00
    stop  at Oct week 8 day Sun time 02:00
Max redirect number is 5
IP QoS DSCP:
    ef (the MS 6 bits, 46, in ToS, 0xB8) for media
    cs3 (the MS 6 bits, 24, in ToS, 0x60) for signal
    af41 (the MS 6 bits, 34, in ToS, 0x88) for video
    default (the MS 6 bits, 0, in ToS, 0x0) for service
Telnet Level: 0
Tftp path is flash:
Generate text file is disabled
Tftp files are created, current syncinfo 0001140473454008
OS79XX.TXT is not created
timeout interdigit 10
network-locale[0] US      (This is the default network locale for this box)
network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US      (This is the default user locale for this box)
user-locale[1] US
user-locale[2] US
user-locale[3] US
user-locale[4] US      Active registrations : 0
Total SIP phones registered: 0
Total Registration Statistics
    Registration requests : 0

```



```

Registration success      : 0
Registration failed       : 0
unRegister requests      : 0
unRegister success       : 0
unRegister failed        : 0
Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time      :
Unregister success time    :
VOICE REGISTER DN
=====
Dn Tag 1
Config:
    Number is 45111
    Preference is 0
    Huntstop is disabled
    Auto answer is disabled
    Pool 1    has this DN configured for line 1
Dn Tag 2
Config:
    Number is 45112
    Preference is 0
    Huntstop is disabled
    Auto answer is disabled
    call-forward b2bua noan 999 timeout 8
    after-hour exempt
    Pool 2    has this DN configured for line 1
    Pool 7    has this DN configured for line 1
Dn Tag 3
Config:
    Number is 45113
    Preference is 0
    Huntstop is disabled
    Auto answer is disabled
    call-forward b2bua all 87687
    Pool 3    has this DN configured for line 1, 2
Dn Tag 4
Config:
    Auto answer is disabled
Dn Tag 7
Config:
    Number is 451110
    Preference is 0
    Huntstop is disabled
    Auto answer is disabled
    after-hour exempt
    Pool 1    has this DN configured for line 4
Dn Tag 8
Config:
    Auto answer is disabled
    call-forward b2bua all 678
    after-hour exempt
    Pool 1    has this DN configured for line 3
VOICE REGISTER TEMPLATE
=====
Temp Tag 1
Config:
    Attended Transfer is enabled
    Blind Transfer is enabled
    Semi-attended Transfer is enabled
    Conference is enabled
    Caller-ID block is disabled

```

## show voice register all

```

DnD control is enabled
Anonymous call block is disabled
Dialplan Tag is 1
softkey connected  Confrn
Lpcor type none
Pool 4 has this template configured
VOICE REGISTER DIALPLAN
=====
Dialplan Tag 1
Config:
  Type is 7905-7912
  Template 1 has this dialplan configured
  Pool 4 has this dialplan configured
VOICE REGISTER POOL
=====
  Pool Tag 1
Config:
  Mac address is 001B.535C.D410
  Type is 7960
  Number list 1 : DN 1
  Number list 3 : DN 8
  Number list 4 : DN 7
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  call-forward phone all is 4566
  call-forward b2bua all 4555
  keep-conference is enabled
  Lpcor Type is none
  Transport type is udp
  service-control mechanism is not supported
  Privacy feature is not configured.
  Privacy button is disabled
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
  Active registrations : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests : 0
    Registration success : 0
    Registration failed : 0
    unRegister requests : 0
    unRegister success : 0
    unRegister failed : 0
    Attempts to register
      after last unregister : 0
    Last register request time :
    Last unregister request time :
    Register success time :
    Unregister success time :
  Pool Tag 2
Config:
  Mac address is 0015.C68E.6D13
  Type is 7960
  Number list 1 : DN 2
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0

```

```

call-forward phone noan is 9886, timeout 98
keep-conference is enabled
username pool2 password lab
Lpcor Type is none
Transport type is udp
service-control mechanism is not supported
Privacy feature is not configured.
Privacy button is disabled
Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
    Active registrations : 0

Total SIP phones registered: 0
Total Registration Statistics
    Registration requests : 0
    Registration success : 0
    Registration failed : 0
    unRegister requests : 0
    unRegister success : 0
    unRegister failed : 0
    Attempts to register
        after last unregister : 0
    Last register request time :
    Last unregister request time :
    Register success time :
    Unregister success time :

Pool Tag 3
Config:
    Mac address is 0021.5553.8998
    Type is 7975
    Number list 1 : DN 3
    Number list 2 : DN 3
    Proxy Ip address is 0.0.0.0
    DTMF Relay is disabled
    Call Waiting is enabled
    DnD is enabled
    Busy trigger per button value is 0
    call-forward phone all is 45112
    call-forward b2bua all 45111
    after-hour exempt
    keep-conference is enabled
    kpml signal is enabled
    Lpcor Type is none
    Transport type is udp
    service-control mechanism is not supported
    Privacy feature is not configured.
    Privacy button is disabled
    Reason for unregistered state:
        No registration request since last reboot/unregister
Dialpeers created:
Statistics:
    Active registrations : 0
    Total SIP phones registered: 0
    Total Registration Statistics
        Registration requests : 0
        Registration success : 0
        Registration failed : 0
        unRegister requests : 0
        unRegister success : 0
        unRegister failed : 0
        Attempts to register
            after last unregister : 0

```

**show voice register all**

```

        Last register request time      :
        Last unregister request time    :
        Register success time           :
        Unregister success time          :
Pool Tag 4
Config:
  Mac address is 8989.9867.8769
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  keep-conference is enabled
  template is 1
  Lpcor Type is none
  Transport type is udp
  service-control mechanism is not supported
  Privacy feature is not configured.
  Privacy button is disabled
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
  Active registrations      : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests   : 0
    Registration success    : 0
    Registration failed     : 0
    unRegister requests     : 0
    unRegister success      : 0
    unRegister failed       : 0
    Attempts to register
      after last unregister : 0
    Last register request time :
    Last unregister request time :
    Register success time      :
    Unregister success time    :
Pool Tag 7
Config:
  Mac address is 0018.BAC8.D2B1
  Number list 1 : DN 2
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  keep-conference is enabled
  Lpcor Type is none
  Transport type is udp
  service-control mechanism is not supported
  Privacy feature is not configured.
  Privacy button is disabled
  Reason for unregistered state:
    No registration request since last reboot/unregister
Dialpeers created:
Statistics:
  Active registrations      : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests   : 0
    Registration success    : 0
    Registration failed     : 0
    unRegister requests     : 0

```

```

unRegister success      : 0
unRegister failed       : 0
Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time      :
Unregister success time    :

```

Table 20: `show voice register all` Field Descriptions, on page 267 describes the significant fields shown in this output.

**Table 20: `show voice register all` Field Descriptions**

Field	Description
Pool Tag	Used with the <b>all</b> and <b>pool</b> keywords. Shows the assigned tag number of the current pool.
Config	Used with the <b>all</b> and <b>pool</b> keywords. Shows the voice register pool.
Network address and Mask	Used with the <b>all</b> and <b>pool</b> keywords. Shows network address and mask information if the <b>id</b> command is configured.
Number list, Pattern, and Preference	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>number</b> command configuration.
Proxy IP address	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>proxy</b> command configuration.
Default preference	Used with the <b>all</b> and <b>pool</b> keywords. Shows the default preference value of this pool.
Incoming called number	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>incoming called-number</b> command configuration.
Translate outgoing called tag	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>translate-outgoing</b> command configuration.
Class of Restriction List Tag	Used with the <b>all</b> and <b>pool</b> keywords. Shows the COR tag.
Incoming corlist name	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>cor</b> command configuration.
Application	Used with the <b>all</b> and <b>pool</b> keywords. Shows the <b>application</b> command configuration for this pool.
Dialpeers created:	Used with the <b>all</b> and <b>pool</b> keywords. What follows is a list of all dial peers created and their contents. Dial-peer contents differ per application and are not described here.
Statistics	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the registration statistics for this pool.
Active registrations	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the current active registrations.

## show voice register all

Field	Description
Total Registration Statistics	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the total registration statistics for this pool.
Registration requests	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the incoming registration requests.
Registration success	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the successful registrations.
Registration failed	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the failed registrations.
unRegister requests	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the incoming unregister/registration expire requests.
unRegister success	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Reports the number of successful unregisters.
unRegister failed	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Reports the number of failed unregisters.

### Related Commands

Command	Description
<b>show sip-ua status registrar</b>	Displays all the SIP endpoints currently registered with the contact address.
<b>show voice register dial-peers</b>	Displays details of all dynamically created VoIP dial peers associated with the Cisco Unified SIP SRST or Cisco Unified CME register event
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.

# show voice register dial-peers

To display details of all dynamically created VoIP dial peers associated with the Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) or Cisco Unified CallManager Express (Cisco Unified CME) register event, use the **show voice register dial-peers** command in privileged EXEC mode.

**show voice register dial-peers** [*pool tag*]

## Syntax Description

<i>pool tag</i>	Number of entries in attempted registrations table. Size range from 0 to 50.
-----------------	--

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SIP SRST 8.1	This command was modified. Pool tag keyword-argument was added. Command output display was also modified to display dial-peers specific to a pool.

## Usage Guidelines

Use this command to display the dial-peers associated with a pool. To display the dynamic dial-peers associated with a specific pool, use the pool keyword followed by the pool tag. When using the pool keyword, you must specify the pool tag.

## Examples

### Cisco Unified CME and Cisco Unified SIP SRST

The following is a sample output from this command displaying all dial-peers:

```
Router#show voice register dial-peers
Dial-peers for Pool 1
dial-peer voice 40001 voip
 destination-pattern 45111
 session target ipv4:8.3.3.111:5060
 session protocol sipv2
 call-fwd-all 4555
 after-hours-exempt FALSE
dial-peer voice 40002 voip
 destination-pattern 45113
 session target ipv4:8.33.33.111:5060
 session protocol sipv2
 after-hours-exempt FALSE
```

**show voice register dial-peers**

```

Dial-peers for Pool 2
dial-peer voice 40003 voip
destination-pattern 45112
session target ipv4:8.33.33.112:5060
session protocol sipv2
call-fwd-noan-timeout 8
call-fwd-noan          999
after-hours-exempt    TRUE

```

**Cisco Unified CME and Cisco Unified SRST**

The following is a sample output from this command displaying all statistical information related to pool 1:

```

Router# show voice register dial-peers pool 1
Dial-peers for Pool 1:
dial-peer voice 40004 voip
destination-pattern 1000
redirect ip2ip
session target ipv4:9.13.18.40:19633
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160
after-hours-exempt FALSE
dial-peer voice 40001 voip
destination-pattern 2000
redirect ip2ip
session target ipv4:9.13.18.40:19634
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160

```

**after-hours-exempt FALSE****Related Commands**

Command	Description
<b>show sip-ua status registrar</b>	Displays all the SIP endpoints currently registered with the contact address.
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.



# show voice register dn

To display all configuration information associated with a specific voice register dn, use the **show voice register dn** command in privileged EXEC mode.

**show voice register dn** {*tag* | **all**}

## Syntax Description

<i>tag</i>	Tag number of the voice register dn for which to display information. Range is 1 to 750.
<b>all</b>	(Optional) Displays configuration information associated with all voice register dns defined in a system.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Version	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.
15.1(2)T	Cisco CME 8.1 Cisco SIP SRST 8.1	This command was modified. The display output now shows pools that have DN's configured under them. All keyword was added to show configuration information for all voice register dns defined in system.

## Usage Guidelines

In Cisco Unified CME 8.1 and Cisco Unified SIP SRST 8.1, the show voice register dn command displays the pools that have the DN's configured under them. When used with all keyword, the show voice register dn command displays configuration information for all the DN's defined in a system.

## Examples

### Cisco Unified SIP CME

The following is a sample output from this command:

```
Router# show voice register dn 1
Dn Tag 1
Config:
  Number is 11
  Preference is 10
  Huntstop is enabled
  Translation-profile incoming saaa
  Allow watch is enabled
  Pool 1      has this DN configured for line 1
```

### Cisco Unified SIP SRST

The following is a sample output from this command:

```
Router# show voice register dn 2
Dn Tag 1
Config:
```

```

Number is 11
Preference is 10
Huntstop is enabled
Translation-profile incoming saaa
Allow watch is enabled
Pool 1      has this DN configured for line 1

```

### Cisco Unified SIP SRST

The following is a sample output from this command displaying information for all the dns:

```

Dn Tag 1
Config:
  Number is 11
  Preference is 10
  Huntstop is enabled
  Translation-profile incoming saaa
  Allow watch is enabled
  Pool 1      has this DN configured for line 1
Dn Tag 2
Config:
  Number is 12
  Preference is 1
  Huntstop is enabled
  Allow watch is enabled
  Pool 2      has this DN configured for line 1, 2

```

### Cisco Unified SIP CME

The following is a sample output from this command displaying information for all the dns:

```

Router# show voice register dn all
Dn Tag 1
Config:
  Number is 45111
  Preference is 0
  Huntstop is disabled
  Auto answer is disabled
Dn Tag 2
Config:
  Number is 45112
  Preference is 0
  Huntstop is disabled
  Auto answer is disabled
  call-forward b2bua noan 999 timeout 8
  after-hour exempt
  Pool 2      has this DN configured for line 1
  Pool 7      has this DN configured for line 1
Dn Tag 3
Config:
  Number is 45113
  Preference is 0
  Huntstop is disabled
  Auto answer is disabled
  call-forward b2bua all 87687
  Preference is 0
  Huntstop is disabled
  Auto answer is disabled
  call-forward b2bua all 87687

```

```

Pool 1      has this DN configured for line 1
Pool 3      has this DN configured for line 1, 2
Dn Tag 4
Config:
  Auto answer is disabled
Dn Tag 7
Config:
  Number is 451110
  Preference is 0
  Huntstop is disabled
  Auto answer is disabled
  after-hour exempt
  Pool 1      has this DN configured for line 4
Dn Tag 8
Config:
  Auto answer is disabled
  call-forward b2bua all 678
  after-hour exempt
  Pool 1      has this DN configured for line 3

```

contains descriptions of significant fields shown in this output, listed in alphabetical order.

**Table 21: show voice register dn Field Descriptions**

Field	Description
Auto answer	Status of auto-answer feature defined with the <b>auto-answer</b> command.
Config	List of configuration options defined for this voice register dn.
Dn Tag	Tag number of the requested voice register dn.
Huntstop	Status of huntstop behavior defined with the <b>huntstop</b> command.
Number	Telephone or extension number set with the <b>number</b> command in voice register dn configuration mode.
Preference	Preference order set with the <b>preference</b> command in voice register dn configuration mode.

#### Related Commands

Command	Description
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
<b>show voice register dn all</b>	Displays information associated with all the dns configured in a system.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.

# show voice register global

To display all global configuration parameters associated with SIP phones, use the **show voice register global** command in privileged EXEC mode.

**show voice register global**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Privileged EXEC

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.
	15.0(1)XA	Cisco SIP SRST 8.0	This command was updated to display the signaling transport protocol.
	15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SIP SRST 8.1	This command was modified. The output display now includes global statistics.
	Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	This command was modified to display VRF information for Cisco 4000 Series Integrated Services Routers.

## Cisco Unified CME

The following is sample output from this command:

```
Router# show voice register global
CONFIG [Version=8.1]
=====
  Version 8.1
  Mode is cme
  Max-pool is 10
  Max-dn is 10
  Outbound-proxy is enabled and will use global configured value
  Security Policy: DEVICE-DEFAULT
  Source-address is 8.3.3.5 port 5060
  Time-format is 12
  Date-format is M/D/Y
  Time-zone is 5
  Hold-alert is disabled
  Mwi stutter is disabled
  Mwi registration for full E.164 is disabled
  Forwarding local is enabled
  Privacy is enabled
  Privacy-on-hold is disabled
  Dst auto adjust is enabled
    start at Apr week 1 day Sun time 02:00
    stop  at Oct week 8 day Sun time 02:00
  Max redirect number is 5
  IP QoS DSCP:
```

```

ef (the MS 6 bits, 46, in ToS, 0xB8) for media
cs3 (the MS 6 bits, 24, in ToS, 0x60) for signal
af41 (the MS 6 bits, 34, in ToS, 0x88) for video
default (the MS 6 bits, 0, in ToS, 0x0) for service
Telnet Level: 0
Tftp path is flash:
Generate text file is disabled
Tftp files are created, current syncinfo 0001140473454008
OS79XX.TXT is not created
timeout interdigit 10
network-locale[0] US      (This is the default network locale for this box)
network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US      (This is the default user locale for this box)
user-locale[1] US
user-locale[2] US
user-locale[3] US
user-locale[4] US      Active registrations   : 0
Total SIP phones registered: 0
Total Registration Statistics
  Registration requests   : 0
  Registration success    : 0
  Registration failed     : 0
  unRegister requests     : 0
  unRegister success      : 0
  unRegister failed       : 0
  Attempts to register
    after last unregister : 0
  Last register request time :
  Last unregister request time :
  Register success time      :
  Unregister success time    :

```

## VRF for Unified SRST 12.8

```

Router# show voice register global
CONFIG [Version=12.8]
=====
  Version 12.8
  Mode is srst
  Max-pool is 50
  Max-dn is 50
  VRF vrf1
  Outbound-proxy is enabled and will use global configured value
  Security Policy: DEVICE-DEFAULT
  Allow-hash-in-dn is disabled
  Forced Authorization Code Refer is enabled
  timeout interdigit 10
  timeout transfer recall 0
  network-locale[0] US      (This is the default network locale for this box)
  network-locale[1] US
  network-locale[2] US
  network-locale[3] US
  network-locale[4] US
  user-locale[0] US      (This is the default user locale for this box)
  user-locale[1] US
  user-locale[2] US
  user-locale[3] US
  user-locale[4] US

```

**show voice register global**

```
MWI unsolicited notify is disabled
Active registrations : 0
```

```
Total SIP phones registered: 0
Total Registration Statistics
Registration requests : 0
Registration success  : 0
Registration failed   : 0
unRegister requests  : 0
unRegister success    : 0
unRegister failed     : 0
Auto-Register requests : 0
Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time      :
Unregister success time    :
```

**Cisco Unified SIP SRST**

```
Router# show voice register global
```

```
CONFIG [Version=8.1]
```

```
=====
```

```
Version 8.1
Mode is srst
Max-pool is 10
Max-dn is 10
Outbound-proxy is enabled and will use global configured value
Security Policy: DEVICE-DEFAULT
timeout interdigit 10
network-locale[0] US      (This is the default network locale for this box)
network-locale[1] US
network-locale[2] US
network-locale[3] US
network-locale[4] US
user-locale[0] US        (This is the default user locale for this box)
user-locale[1] US
user-locale[2] US
user-locale[3] US
user-locale[4] US   Active registrations : 0
Total SIP phones registered: 0
Total Registration Statistics
Registration requests : 0
Registration success  : 0
Registration failed   : 0
unRegister requests  : 0
unRegister success    : 0
unRegister failed     : 0
Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time      :
Unregister success time    :
```

[Table 22: show voice register global Field Descriptions, on page 277](#) contains descriptions of significant fields shown in this output, listed in alphabetical order.

Table 22: show voice register global Field Descriptions

Field	Description
Date-format	Value of <b>date-format</b> command.
DST auto adjust	Setting of <b>dst auto-adjust</b> command.
Forwarding local	Setting of <b>forwarding local</b> command.
Generate text file	Setting of <b>text file</b> command.
Hold-alert	Setting of <b>hold-alert</b> command.
Load	Value of <b>load</b> command.
Max-dn	Reports the maximum number of SIP voice register directory numbers (dns) supported by the Cisco Unified SIP CME or Cisco Unified SIP SRST router as configured with the <b>max-dn</b> command. The maximum possible number is platform-dependent.
Max-pool	Reports the maximum number of SIP voice register pools supported by the Cisco Unified SIP SRST or Cisco Unified CME router as configured with the <b>max-pool</b> command. The maximum possible number is platform-dependent.
Max redirect number	Maximum number of redirects set with the <b>max-redirect</b> command.
Mode	Reports the mode as configured with the <b>mode</b> command. Value can be either Cisco Unified CME or Cisco Unified SIP SRST.
MWI registration	Setting of <b>mw</b> i command.
MWI stutter	Setting of <b>mw</b> i <b>stutter</b> command.
Time-format	Value of <b>time-format</b> command.
Time-zone	Number of the timezone selected with the <b>timezone</b> command.
TFTP path	Directory location of provisioning files for SIP phones that is specified with the <b>tftp-path</b> command.
Version	Reports the Cisco Unified SIP SRST or Cisco Unified CME version number.
VRF	Displays information on the associated VRF ID.

## Related Commands

Command	Description
<b>show sip-ua status registrar</b>	Displays all the SIP endpoints currently registered with the contact address.
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register dial-peers</b>	Displays details of all dynamically created VoIP dial peers associated with the Cisco Unified SIP SRST or Cisco Unified CME register event.

Command	Description
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.



# show voice register pool

To display all configuration information associated with a specific voice register pool, use the **show voice register pool** command in privileged EXEC mode.

**show voice register pool** {*pool-tag* | **all**} [**brief**]

## Syntax Description

<i>pool-tag</i>	Tag number of the voice register pool for which information is displayed. Range is 1 to 262. <b>Note</b> The maximum number of pools is version and platform dependent.
<b>all</b>	Displays the information of all the voice register pools.
<b>brief</b>	(Optional) Displays brief information of all voice register pools.

## Command Modes

Privileged EXEC (#)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST	This command was introduced.
12.3(4)T	Cisco SIP SRST	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was modified to include emergency response location information in the output display.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.
15.0(1)XA	Cisco Unified CME 8.0	This command was modified to include logical partitioning class of restriction (LPCOR) information in the output display.
15.1(1)T	Cisco Unified CME 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.
15.1(2)T	Cisco Unified CME 8.1	This command was modified. The <b>all</b> and <b>brief</b> keywords were added. Voice-class stun-usage information is displayed in the output.
15.2(2)T	Cisco Unified CME 9.0	This command was modified to include conference admin, conference add mode, and conference drop mode in the output display.

Cisco IOS Release	Cisco Product	Modification
15.2(4)M	Cisco Unified CME 9.1 Cisco Unified SIP SRST 9.1	This command was modified to include Key Expansion Module (KEM) data in the output display.
Cisco IOS XE Everest 16.6.1	Unified SRST 12.0	This command was modified to include the IPv6 address in the output display for Unified SRST.
Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	This command was modified to include VRF information for Cisco 4000 Series Integrated Services Routers: <ul style="list-style-type: none"> <li>• <b>show voice register pool <i>all</i></b>—Information for all the available configured pools.</li> <li>• <b>show voice register pool <i>pool-tag</i></b>—Information specific to a specific configured pool.</li> </ul>
Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	Introduced support for YANG models.

## Examples

### Cisco Unified CME

The following is a sample output of the **show voice register pool** command, displaying information for voice register pool 33 in Cisco Unified CME:

```
Router# show voice register pool 33

Pool Tag 33
Config:
  Mac address is 0009.B7F7.532E
  Type is 7960
  Number list 1 : DN 1
  Number list 2 : DN 2
  Number list 3 : DN 3
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  keep-conference is enabled
  template is 1
  Emergency response location 3
  Lpcor Type is local
  Lpcor Incoming is sip_group
  Lpcor Outgoing is sip_group

  Transport type is udp
  service-control mechanism is not supported
  Privacy feature is not configured.
  Privacy button is disabled

Dialpeers created:

Statistics:
  Active registrations : 0
```

```

Total SIP phones registered: 0
Total Registration Statistics
  Registration requests : 0
  Registration success : 0
  Registration failed : 0
  unRegister requests : 0
  unRegister success : 0
  unRegister failed : 0

```

The following is a sample output of the **show voice register pool** command. The output shows that a meet-me hardware conference administrator has been assigned, the conference creator or any of the participants can add a new participant, and the conference creator can terminate the active video hardware conference by hanging up.

```

Router# show voice register pool 15
  Pool Tag 15
Config:
  Mac address is 1C17.D340.81F0
  Type is 9951
  Number list 1 : DN 15
  Proxy Ip address is 0.0.0.0
  Current Phone load version is Cisco-CP9951/9.0.1
  DTMF Relay is enabled, sip-notify
  Call Waiting is enabled
  DnD is disabled
  Video is enabled
  Camera is enabled
  Busy trigger per button value is 0
  feature-button 5 DnD
  feature-button 6 MeetMe
  keep-conference is enabled
  registration expires timer max is 86400 and min is 60
  template is 1
  kpml signal is enabled
  Lpcor Type is none
  Transport type is udp
  service-control mechanism is supported
  registration Call ID is 1c17d340-81f00002-6c48fe8e-03013c10@1.5.40.105
  Registration method: per line
  Privacy feature is not configured.
  Privacy button is disabled
  active primary line is: 3915
  contact IP address: 1.5.40.105 port 5060
  Phone SIS Version: 5.0.0
  GW SIS Version: 1.0.0
  conference admin: yes
  conference add mode: all
  conference drop mode: creator
  paging-dn: config 0 [multicast] effective 0 [multicast]
...

```

The following is an example of a partial output of the **show voice register pool all** command, showing KEM data with the phone type information:

```

Router# show voice register pool all
  Pool Tag 5
Config:
  Mac address is B4A4.E328.4698
  Type is 9971 addon 1 CKEM
  Number list 1 : DN 2

```

```

Number list 2 : DN 3
Proxy Ip address is 0.0.0.0
DTMF Relay is disabled
Call Waiting is enabled
DnD is disabled
Video is enabled
Camera is enabled
Busy trigger per button value is 0
keep-conference is enabled
registration expires timer max is 200 and min is 60
kpml signal is enabled
Lpcor Type is none

```

The following is a sample output of the **show voice register pool all** command, showing the three KEMs configured with phone type 9971:

```

Router# show voice register pool all
Pool Tag 4
Config:
Mac address is B4A4.E328.4698
Type is 9971 addon 1 CKEM 2 CKEM 3 CKEM
Number list 1 : DN 4
Number list 2 : DN 5
Number list 3 : DN 9

```

### Cisco Unified SIP SRST

The following is a sample output of the **show voice register pool** command, displaying all information for voice register pool 1 in Cisco Unified SIP SRST:

```

Router# show voice register pool 1

Pool Tag 1
Config:
Network address is 192.168.0.0, Mask is 255.255.0.0
Number list 1 : Pattern is 50.., Preference is 2
Proxy Ip address is 0.0.0.0
Default preference is 2
Incoming called number is
Translate outgoing called tag is 1
Class of Restriction List Tag: default
Incoming corlist name is allowall
Application is default.new

Dialpeers created:

dial-peer voice 40007 voip
 application default.new
 corlist incoming allowall
 preference 2
 incoming called-number 5001
 destination-pattern 5001
 redirect ip2ip
 session target ipv4:192.168.0.3
 session protocol sipv2
 translate-outgoing called 1
 voice-class codec 1

Statistics:
Active registrations : 2

```

```
Total Registration Statistics
Registration requests : 48
Registration success : 48
Registration failed : 0
unRegister requests : 46
unRegister success : 46
unRegister failed : 0
```

```
Emergency response location 6
```

### VRF for Unified SRST 12.8

The following is a sample output of the **show voice register pool all** and **show voice register pool pool-tag** command for Unified SRST 12.8:

```
Router# show voice register pool all

Pool Tag 1
Config:
  Mac address is 9C57.ADF5.C191
  Number list 1 : DN 1
  Proxy Ip address is 0.0.0.0
  DTMF Relay is enabled, rtp-nte
  kpml signal is enabled
  Lpcor Type is none

Reason for unregistered state:
  No registration request since last reboot/unregister

  paging-dn: config 0 [multicast] effective 0 [multicast]

VRF:
  vrfl

Dialpeers created:

Statistics:
  Active registrations : 0

Total SIP phones registered: 0
Total Registration Statistics
  Registration requests : 0
  Registration success : 0
  Registration failed : 0
  unRegister requests : 0
  unRegister success : 0
  unRegister failed : 0
  Auto-Register requests : 0
  Attempts to register
    after last unregister : 0
  Last register request time :
  Last unregister request time :
  Register success time :
  Unregister success time :

Pool Tag 2
Config:
  Mac address is 9C57.ADF5.C192
  Number list 1 : DN 2
```

**show voice register pool**

```

Proxy Ip address is 0.0.0.0
DTMF Relay is enabled, rtp-nte
kpml signal is enabled
Lpcor Type is none

Reason for unregistered state:
  No registration request since last reboot/unregister

paging-dn: config 0 [multicast] effective 0 [multicast]

VRF:
  vrfl

Dialpeers created:

Statistics:
  Active registrations : 0

Total SIP phones registered: 0
Total Registration Statistics
  Registration requests : 0
  Registration success  : 0
  Registration failed   : 0
  unRegister requests  : 0
  unRegister success    : 0
  unRegister failed     : 0
  Auto-Register requests : 0
  Attempts to register
    after last unregister : 0
  Last register request time :
  Last unregister request time :
  Register success time      :
  Unregister success time    :

```

```

Router# show voice register pool 1
Pool Tag 1
Config:
Mac address is 9C57.ADF5.C191
Number list 1 : DN 1
Proxy Ip address is 0.0.0.0
DTMF Relay is enabled, rtp-nte
kpml signal is enabled
Lpcor Type is none

Reason for unregistered state:
  No registration request since last reboot/unregister

paging-dn: config 0 [multicast] effective 0 [multicast]

VRF:
  vrfl

Dialpeers created:

Statistics:
  Active registrations : 0

Total SIP phones registered: 0
Total Registration Statistics
  Registration requests : 0
  Registration success  : 0
  Registration failed   : 0
  unRegister requests  : 0

```

```

unRegister success   : 0
unRegister failed    : 0
Auto-Register requests : 0
Attempts to register
    after last unregister : 0
Last register request time :
Last unregister request time :
Register success time   :
Unregister success time  :

```

The following is a sample output of the **show voice register pool brief** command, showing an IPv6 source address configured on a Cisco SIP IP Phone:

```

Router# show voice register pool brief
Pool ID                               IP Address                               Ln DN  Number  State
=====
1      8.0.0.0                          10001$  UNREGISTERED
2      2001:420:54FF:13::312:0          2001:420:54FF:13::312:1              10001$  REGISTERED

```

### Voice class stun usage

The following is a sample output of the **show voice register pool** command, displaying voice-class stun-usage information for voice register pool 51:

```

Router# show voice register pool 51
Pool Tag 51
Config:
  Mac address is 0011.209F.5D60
  Type is 7960
  Number list 1 : DN 51
  Proxy Ip address is 0.0.0.0
  Current Phone load version is Cisco-SIPGateway/IOS-12.x
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  keep-conference is enabled
  template is 10
  Lpcor Type is none

Transport type is udp
  service-control mechanism is not supported
  registration Call ID is 2BA38EE3-17D311DB-800BCD81-A9AD11F0
  Privacy feature is not configured.
  Privacy button is disabled
  active primary line is: 16263646
  contact IP address: 192.168.0.87 port 5060
  Reason for unregistered state:
    No registration request since last reboot/unregister
  voice-class stun-usage is enabled. tag is 1
Dialpeers created:
Dial-peers for Pool 51:
Statistics:
  Active registrations : 0
  Total SIP phones registered: 0
  Total Registration Statistics
    Registration requests : 2
    Registration success : 2

```

**show voice register pool**

```

Registration failed      : 0
unRegister requests     : 2
unRegister success      : 2
unRegister failed       : 0
Attempts to register
  after last unregister : 0
Last register request time : 13:43:27.839 IST Tue Apr 20 2010

```

[Table 23: show voice register pool Field Descriptions \(Continued\), on page 286](#) contains descriptions of significant fields shown in the Cisco Unified CME and Cisco Unified SIP SRST output, listed in alphabetical order.

**Table 23: show voice register pool Field Descriptions (Continued)**

Field	Description
Active registrations	Shows the current active registrations.
Application	Shows the <b>application</b> command configuration for this pool.
Call Waiting	Shows the <b>call-waiting</b> command configuration.
Class of Restriction List Tag	Shows the COR tag.
Conference add mode	Shows the current setting of the hardware conference privilege for adding participants.
Conference admin	Shows whether the Cisco Unified SIP IP phone is assigned as the hardware conference administrator or not.
Conference drop mode	Shows who can terminate an active ad-hoc hardware conference by hanging up.
Config	Shows the voice register pool.
Default preference	Shows the default preference value of this pool.
Dialpeers created	Lists all the dial peers created and their contents. Dial-peer contents differ for each application and are not described here.
DnD	Shows the setting of the <b>dnd-control</b> command.
DTMF Relay	Shows the setting of the <b>dtmf-relay</b> command.
Emergency response location	Shows the ephone's emergency response location to which an emergency response team is dispatched when an emergency call is made.
Incoming called number	Shows the <b>incoming called-number</b> command configuration.
Incoming corlist name	Shows the <b>cor</b> command configuration.
keep-conference	Shows the status of the <b>keep-conference</b> command.
Lpcor Incoming	Shows the setting of the <b>lpcor incoming</b> command.
Lpcor Outgoing	Shows the setting of the <b>lpcor outgoing</b> command.



Field	Description
Lpcor Type	Shows the setting of the <b>lpcor type</b> command.
Mac address	Shows the MAC address of the Cisco Unified SIP IP phone as defined by the <b>id</b> command.
Network address and Mask	Shows network address and mask information when the <b>id</b> command is configured.
Number list, Pattern, and Preference	Shows the <b>number</b> command configuration.
Pool Tag	Shows the assigned tag number of the current pool.
Proxy IP address	Shows the <b>proxy</b> command configuration; that is, the IP address of the external SIP server.
Registration failed	Shows the failed registrations.
Registration requests	Shows the incoming registration requests.
Registration success	Shows the successful registrations.
Statistics	Shows the registration statistics for this pool.
Template	Shows the template-tag number for the template applied to the Cisco Unified SIP IP phone.
Total Registration Statistics	Shows the total registration statistics for this pool.
Translate outgoing called tag	Shows the <b>translate-outgoing</b> command configuration.
Type	Shows the phone type identified for the Cisco Unified SIP IP phone using the <b>type</b> command.
unRegister failed	Reports the number of failed unregisters.
unRegister requests	Shows the incoming unregister/registration expiry requests.
unRegister success	Reports the number of successful unregisters.
Username Password	Shows the values within the authentication credential.
VRF	Displays information on the associated VRF ID.

**Related Commands**

Command	Description
<b>application (voice register pool)</b>	Selects the session-level application for the dial peer associated with an individual Cisco Unified SIP IP phone in a Cisco Unified CME environment or for a group of phones in a Cisco Unified SIP SRST environment.
<b>call-waiting (voice register pool)</b>	Enables the call-waiting option on a SIP phone.

Command	Description
<b>cor (voice register pool)</b>	Configures a class of restriction on the VoIP dial peers associated with directory numbers.
<b>dnd-control (voice register template)</b>	Enables the Do-Not-Disturb (DND) soft key on SIP phones.
<b>dtmf-relay (voice register pool)</b>	Specifies the list of dual-tone multifrequency (DTMF) relay methods that can be used to relay DTMF audio tones between SIP endpoints.
<b>id (voice register pool)</b>	Explicitly identifies a locally available, individual Cisco Unified SIP IP phone or, when running Cisco Unified SIP SRST, a set of Cisco Unified SIP IP phones.
<b>incoming called-number (dial peer)</b>	Specifies a digit string that can be matched by an incoming call to associate the call with a dial peer.
<b>keep-conference (voice register pool)</b>	Allows IP phone conference initiators to exit from conference calls and keep the remaining parties connected.
<b>lpcor incoming</b>	Associates an incoming call with a logical partitioning class of restriction (LPCOR) resource-group policy.
<b>lpcor outgoing</b>	Associates an outgoing call with an LPCOR resource-group policy.
<b>lpcor type</b>	Specifies the LPCOR type for an IP phone.
<b>number (voice register pool)</b>	Indicates the E.164 phone numbers that the registrar permits to handle the Register message from a Cisco Unified SIP IP phone.
<b>proxy (voice register pool)</b>	Autogenerates additional VoIP dial peers to reach the main proxy whenever a Cisco Unified SIP IP phone registers with a Cisco Unified SIP SRST gateway.
<b>show sip-ua status registrar</b>	Displays all the Cisco Unified SIP IP phones registered with the contact address.
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register dial-peer</b>	Displays details of all dynamically created VoIP dial peers associated with the Cisco Unified CME or Cisco Unified SIP SRST register event.
<b>translate-outgoing (voice register pool)</b>	Allows an explicit setting of translation rules on the VoIP dial peer to modify a phone number dialed by any Cisco Unified IP phone user.
<b>type (voice register pool)</b>	Defines a phone type for a SIP phone.
<b>voice register pool</b>	Enters voice register pool configuration mode for Cisco Unified SIP IP phones.

# show voice register pool attempted-registrations

To display the details of phones that attempt to register with Cisco Unified CME or Cisco Unified SRST and fail, use the **show voice register pool attempted-registrations** command in privileged EXEC mode.

**show voice register pool attempted-registrations**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Version	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phones that attempt to register with Cisco Unified CME or Cisco Unified SRST and fail. If the phone registers successfully after some time, the attempted registration entry will still show up in the attempted-registration table. Use the **clear voice register attempted-registrations** command to remove the entry from the attempted registration table.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for **show voice register pool attempted-registrations**:

```
Router# show voice register pool attempted-registrations
Phones that have attempted registrations and have failed:
MAC address: 001b.535c.d410
IP address : 8.3.3.111
Attempts   : 5
Time of first attempt : *10:49:51.542 UTC Wed Oct 14 2009
Time of latest attempt: *10:50:00.886 UTC Wed Oct 14 2009
Reason for failure    :
                    No pool match for the registration request
MAC address: 0015.c68e.6d13
IP address : 8.33.33.112
Attempts   : 4
Time of first attempt : *10:49:53.418 UTC Wed Oct 14 2009
Time of latest attempt: *10:50:00.434 UTC Wed Oct 14 2009
Reason for failure    :
                    No pool match for the registration request
MAC address: 0009.43E9.0B35
IP address : 9.13.40.83
Attempts   : 1
Time of first attempt : *10:49:57.866 UTC Wed Oct 14 2009
Time of latest attempt: *10:49:57.866 UTC Wed Oct 14 2009
Reason for failure    :
                    No pool match for the registration request
```

The following is a sample output from this command displaying information for **show voice register pool attempted-registrations** when none of the phones fail:

**show voice register pool attempted-registrations**

```
Router# show voice register pool attempted-registrations
Phones that have attempted registrations and have failed: NONE
```

**Related Commands**

Command	Description
<b>attempted-registrations size</b>	Allows to set the size of the table that stores information related to SIP phones that attempt to register and fail.
<b>clear voice register attempted-registrations</b>	Clears entries from the attempted-registration table.

# show voice register pool connected

To display the details of SIP phones that are in connected state, use the **show voice register pool connected** command in privileged EXEC mode.

**show voice register pool connected [brief]**

## Syntax Description

<i>brief</i>	(Optional) Displays brief details of SIP phones that are in connected state.
--------------	--

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phone that are currently in connected state (in conversation). The output for show voice register pool connected command shows details of both calls originating from the SIP phones and calls made towards SIP phones. When used with brief keyword, the show voice register pool connected command displays a brief detail of phones in connected state.

### Cisco Unified CME and Cisco Unified SRST

The following is sample output from this command displaying all statistical information:

```
Router# show voice register pool connected
Outbound calls from SIP line phones:
Pool tag: 1
=====
MAC Address      : 001B.535C.D410
Contact IP       : 8.3.3.111
Phone Number     : 45111
Remote Number    : 45112
Call 2
SIP Call ID      : 001b535c-d4100010-79612b5a-336b0db5@8.3.3.111
State of the call : STATE_ACTIVE (7)
Substate of the call : SUBSTATE_NONE (0)
Calling Number    : 45111
Called Number     : 45112
Bit Flags         : 0xC0401C 0x100 0x4
CC Call ID       : 7
Source IP Address (Sig ) : 8.3.3.5
Destn SIP Req Addr:Port : [8.3.3.111]:5060
Destn SIP Resp Addr:Port: [8.3.3.111]:50076
Destination Name   : 8.3.3.111
Number of Media Streams : 1
Number of Active Streams: 1
RTP Fork Object    : 0x0
Media Mode         : flow-through
Media Stream 1
State of the stream : STREAM_ACTIVE
Stream Call ID      : 7
Stream Type         : voice-only (0)
Stream Media Addr Type : 1
Negotiated Codec    : g729r8 (20 bytes)
```

**show voice register pool connected**

```

Codec Payload Type      : 18
Negotiated Dtmf-relay   : inband-voice
Dtmf-relay Payload Type : 0
QoS ID                  : -1
Local QoS Strength      : BestEffort
Negotiated QoS Strength : BestEffort
Negotiated QoS Direction : None
Local QoS Status        : None
Media Source IP Addr:Port : [8.3.3.5]:17580
Media Dest IP Addr:Port  : [8.3.3.111]:26298
Options-Ping            ENABLED:NO    ACTIVE:NO
Inbound calls to SIP line phones:

Pool tag: 2
=====
MAC Address      : 0015.C68E.6D13
Contact IP       : 8.33.33.112
Phone Number     : 45112
Remote Number    : 45111
Call 3
SIP Call ID      : 4DA52F97-ADA311DE-8019803A-FF3E4CBC@8.3.3.5
State of the call : STATE_ACTIVE (7)
Substate of the call : SUBSTATE_NONE (0)
Calling Number    : 45111
Called Number     : 45112
Bit Flags        : 0xC04018 0x100 0x80
CC Call ID       : 8
Source IP Address (Sig) : 8.3.3.5
Destn SIP Req Addr:Port : [8.33.33.112]:5060
Destn SIP Resp Addr:Port : [8.33.33.112]:5060
Destination Name   : 8.33.33.112
Number of Media Streams : 1
Number of Active Streams: 1
RTP Fork Object    : 0x0
Media Mode         : flow-through
Media Stream 1
State of the stream : STREAM_ACTIVE
Stream Call ID      : 8
Stream Type         : voice-only (0)
Stream Media Addr Type : 1
Negotiated Codec    : g729r8 (20 bytes)
Codec Payload Type  : 18
Negotiated Dtmf-relay : inband-voice
Dtmf-relay Payload Type : 0
QoS ID              : -1
Local QoS Strength   : BestEffort
Negotiated QoS Strength : BestEffort
Negotiated QoS Direction : None
Local QoS Status     : None
Media Source IP Addr:Port : [8.3.3.5]:16384
Media Dest IP Addr:Port  : [8.33.33.112]:30040

```

The following is sample output from this command displaying brief statistical information:

```

Router# show voice register pool connected brief
Pool IP Address      Number      Remote Number
=====
1      8.3.3.111      45111      45112
Inbound calls to SIP line phones:
Pool IP Address      Number      Remote Number
=====
2      8.33.33.112    45112      45111

```

**Related Commands**

Command	Description
<b>show sip-ua calls</b>	Displays active user agent client (UAC) and user agent server (UAS) information on SIP calls
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.

# show voice register pool ip

To display the details of a SIP phone with a specific IP address, use the **show voice register pool ip** command in privileged EXEC mode.

**show voice register pool ip ip-address**

## Syntax Description

<i>ip-address</i>	IPv4 address of the SIP phone .
-------------------	---------------------------------

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of a phone with a specific IP-address. When the pool ID is configured as a mac address or an IP address the registered pools contain the IP address information. The pool information is displayed if the IP addresses match.

When the pool ID is IP and the pool is unregistered, IP address configured under pool is compared with the input IP. When the pool ID is network contact, the IP address of each phone that is registered is compared with the input IP address.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is sample output from this command displaying all statistical information:

```
Router# show voice register pool ip 8.3.3.111
Pool ID          IP Address      Ln DN   Number      State
=====
1      001B.535C.D410  8.3.3.111      1 1    45111      REGISTERED
                                4 7    451110     UNREGISTERED
```

[Table 24: show voice register pool ip Field Descriptions, on page 294](#) contains descriptions of significant fields shown in this output, listed in alphabetical order.

**Table 24: show voice register pool ip Field Descriptions**

Field	Description
DN	Voice register DN tag of the line.
ID	Phone identification (ID) address.
IP Address	IP address of the SIP phone.
LN	Line number of the telephone number.
Number	Number of the phones that have a mac address.



Field	Description
Pool	Tag ID of the pool.
State	Registration state of the line.

**Related Commands**

Command	Description
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.

# show voice register pool mac

To display the details of voice register pool associated with a specific phone type, use the **show voice register pool mac** command in privileged EXEC mode.

**show voice register pool mac H.H.H**

## Syntax Description

<i>H.H.H</i>	MAC address of the SIP phone attempting to register.
--------------	--

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phone with the mac address H.H.H. The command displays only the pools that are configured with an ID as mac.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is sample output from this command displaying all statistical information:

```
Router# show voice register pool mac 001B.535C.D410
Pool ID              IP Address      Ln DN   Number      State
=====
1      001B.535C.D410  8.3.3.111      1 1    45111      REGISTERED
                                     4 7    451110     UNREGISTERED
```

[Table 25: show voice register pool mac Field Descriptions, on page 296](#) contains descriptions of significant fields shown in this output, listed in alphabetical order.

**Table 25: show voice register pool mac Field Descriptions**

Field	Description
DN	Voice register DN tag of the line.
ID	Phone identification (ID) address.
IP Address	IP address of the SIP phone.
LN	Line number of the telephone number.
Number	Number of the phones that have a mac address.
Pool	Tag ID of the pool.
State	Registration state of the line.

**Related Commands**

Command	Description
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.

# show voice register pool network

To display the details of a phone with a specific network address, use the **show voice register pool network** command in privileged EXEC mode.

**show voice register pool network network-address**

## Syntax Description

<i>network-address</i>	Network address of the SIP phone.
------------------------	-----------------------------------

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of pools that have network ID configured and whose network address matches the specific network address provided by the user.

## Examples

The following is sample output from this command displaying all statistical information:

```
Router# show voice register pool network 78.89.0.0
Pool ID              IP Address          Ln DN   Number          State
=====
7      78.89.0.0          1  1    6576          UNREGISTERED
```

[Table 26: show voice register pool network Field Descriptions, on page 298](#) contains descriptions of significant fields shown in this output, listed in alphabetical order.

**Table 26: show voice register pool network Field Descriptions**

Field	Description
DN	Directory number of the phone.
ID	Phone identification (ID) address.
IP Address	IP address and port number of the phones
LN	Line number of the phone.
Number	Number of the phone that have network address.
Pool	Shows the current pool.
State	Registration state.

**Related Commands**

Command	Description
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
<b>show voice register pool ip</b>	Displays the voice register pool details of a phone with a specific IP address.

# show voice register pool on-hold

To display the details of phones that are currently on-hold, use the **show voice register pool oh-hold** command in privileged EXEC mode.

**show voice register pool on-hold [brief]**

## Syntax Description

<i>brief</i>	(Optional) Displays brief details of SIP phones that are currently on-hold.
--------------	---

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Version	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phone that are currently on-hold. The show voice register pool on-hold command output also displays a field to show if the hold was a locally initiated hold (initiated on the phone) or if the hold was initiated on the remote end. When used with brief keyword, the show voice register pool on-hold command displays a brief information of the phones that are currently put on hold by the remote caller or have put the remote caller on hold. The “Hold-Origin” field specifies the type of the hold, which can be either remote or local. Local indicates that the call is placed on hold by the local phone and remote indicates that call is placed on hold by the remote phone. In case of double-hold, the hold origin will display the value “Local and Remote”.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for phones ringing in a voice register pool:

```
Router# show voice register pool on-hold brief
Outbound calls from SIP line phones:
Pool IP Address      Number      Remote Number      Hold Origin
=====
1      8.3.3.111      45111          45112              Remote & Local
Inbound calls to SIP line phones:
Pool IP Address      Number      Remote Number      Hold Origin
=====
2      8.33.33.112     45112          45111              Remote & Local
```

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for phones on-hold:

```
Router# show voice register pool on-hold
Outbound calls from SIP line phones:
```

```

Pool tag: 1
=====
MAC Address      : 001B.535C.D410
Contact IP       : 8.3.3.111
Phone Number     : 45111
Remote Number    : 45112
Local Hold       : CALL HOLD Pressed on SIP Phone
Call 4
SIP Call ID      : 001b535c-d4100010-79612b5a-336b0db5@8.3.3.111
State of the call : STATE_ACTIVE (7)
Substate of the call : SUBSTATE_NONE (0)
Calling Number    : 45111
Called Number     : 45112
Bit Flags         : 0xC0401C 0x10100 0x4
CC Call ID       : 7
Source IP Address (Sig) : 8.3.3.5
Destn SIP Req Addr:Port : [8.3.3.111]:5060
Destn SIP Resp Addr:Port: [8.3.3.111]:50076
Destination Name  : 8.3.3.111
Number of Media Streams : 1
Number of Active Streams: 1
RTP Fork Object   : 0x0
Media Mode        : flow-through
Media Stream 1
State of the stream : STREAM_ACTIVE
Stream Call ID      : 7
Stream Type         : voice-only (0)
Stream Media Addr Type : 1
Negotiated Codec    : g729r8 (20 bytes)
Codec Payload Type  : 18
Negotiated Dtmf-relay : inband-voice
Dtmf-relay Payload Type : 0
QoS ID             : -1
Local QoS Strength  : BestEffort
Negotiated QoS Strength : BestEffort
Negotiated QoS Direction : None
Local QoS Status    : None
Media Source IP Addr:Port: [8.3.3.5]:17580
Media Dest IP Addr:Port : [8.3.3.111]:26298
Options-Ping        ENABLED:NO    ACTIVE:NO
Inbound calls to SIP line phones:
Pool tag: 2
=====
MAC Address      : 0015.C68E.6D13
Contact IP       : 8.33.33.112
Phone Number     : 45112
Remote Number    : 45111
Remote Hold      : SIP Phone has received CALL HOLD
Call 5
SIP Call ID      : 4DA52F97-ADA311DE-8019803A-FF3E4CBC@8.3.3.5
State of the call : STATE_ACTIVE (7)
Substate of the call : SUBSTATE_NONE (0)
Calling Number    : 45111
Called Number     : 45112
Bit Flags         : 0xC04018 0x4100 0x80
CC Call ID       : 8
Source IP Address (Sig) : 8.3.3.5
Destn SIP Req Addr:Port : [8.33.33.112]:5060
Destn SIP Resp Addr:Port: [8.33.33.112]:5060
Destination Name  : 8.33.33.112
Number of Media Streams : 1
Number of Active Streams: 1
RTP Fork Object   : 0x0
Media Mode        : flow-through

```

**show voice register pool on-hold**

```

Media Stream 1
  State of the stream      : STREAM_ACTIVE
  Stream Call ID          : 8
  Stream Type              : voice-only (0)
  Stream Media Addr Type   : 1
  Negotiated Codec         : g729r8 (20 bytes)
  Codec Payload Type       : 18
  Negotiated Dtmf-relay    : inband-voice
  Dtmf-relay Payload Type  : 0
  QoS ID                   : -1
  Local QoS Strength       : BestEffort
  Negotiated QoS Strength  : BestEffort
  Negotiated QoS Direction : None
  Local QoS Status         : None
  Media Source IP Addr:Port : [8.3.3.5]:16384
  Media Dest IP Addr:Port   : [8.33.33.112]:30040
Options-Ping      ENABLED:NO    ACTIVE:NO

```

**Related Commands**

Command	Description
<b>show voice register all</b>	Displays all Cisco SIP SRST and Cisco CME configurations and register information.
<b>show sip-ua calls</b>	Displays active user agent client (UAC) and user agent server (UAS) information on SIP calls
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.



# show voice register pool registered

To display the details of phones that successfully register to Cisco Unified Communications Manager Express (Cisco Unified CME), use the **show voice register pool registered** command in privileged EXEC mode.

**show voice register pool registered**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC (#)

## Command History

Cisco IOS Release	Version	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.
15.2(4)M	Cisco Unified CME 9.1 Cisco Unified SIP SRST 9.1	This command was modified to display Key Expansion Module (KEM) details with the phone type information.

## Usage Guidelines

Use the **show voice register pool registered** command to display the details of phones that are successfully registered to Cisco Unified CME and Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST).

## Examples

### Cisco Unified CME

The following is a sample output displaying information for a registered voice register pool in Cisco Unified CME:

```
Router# show voice register pool registered
Pool Tag 1
Config:
  Mac address is 001B.535C.D410
  Type is 7960
  Number list 1 : DN 1
  Number list 3 : DN 8
  Number list 4 : DN 7
  Proxy Ip address is 0.0.0.0
  Current Phone load version is Cisco-CP7960G/8.0
  DTMF Relay is disabled
  Call Waiting is enabled
  DnD is disabled
  Busy trigger per button value is 0
  call-forward phone all is 4566
  call-forward b2bua all 4555
  keep-conference is enabled
  Lpcor Type is none
  Transport type is udp
  service-control mechanism is supported
  registration Call ID is 001b535c-d410790d-17a6877e-5d04bbc5@8.3.3.111
  Privacy feature is not configured.
  Privacy button is disabled
```

**show voice register pool registered**

```

    active primary line is: 45111
    contact IP address: 8.3.3.111 port 5060
Dialpeers created:
Dial-peers for Pool 1:
dial-peer voice 40001 voip
destination-pattern 45111
session target ipv4:8.3.3.111:5060
session protocol sipv2
    call-fwd-all          4555
    after-hours-exempt    FALSE
Statistics:
Active registrations   : 1
Total SIP phones registered: 1
Total Registration Statistics
    Registration requests : 1
    Registration success  : 1
    Registration failed   : 0
    unRegister requests  : 0
    unRegister success    : 0
    unRegister failed     : 0
    Attempts to register
        after last unregister : 0
    Last register request time : *11:40:32.263 UTC Wed Oct 14 2009
    Last unregister request time :
    Register success time      : *11:40:32.267 UTC Wed Oct 14 2009
    Unregister success time    :

```

The following is a sample output displaying information for a registered voice register pool with a Cisco Unified 9971 Session Initiation Protocol (SIP) IP phone attached to a Cisco SIP IP Phone CKEM 36-Button Line Expansion Module:

```

Router# show voice register pool registered
Pool Tag 5
Config:
Mac address is B4A4.E328.4698
Type is 9971 addon 1 CKEM
Number list 1 : DN 2
Number list 2 : DN 3
Proxy Ip address is 0.0.0.0
DTMF Relay is disabled
Call Waiting is enabled
DnD is disabled
Video is enabled
Camera is enabled
Busy trigger per button value is 0
keep-conference is enabled
registration expires timer max is 200 and min is 60
kpml signal is enabled
Lpcor Type is none

```

**Cisco Unified SRST**

The following is a sample output displaying information for a registered voice register pool in Cisco Unified SRST:

```

Router# show voice register pool registered
Pool Tag 1
Config:
Ip address is 9.13.18.40, Mask is 255.255.0.0
Number list 1 : DN 1
Number list 2 : DN 2

```

```

Number list 3 : DN 3
Number list 4 : DN 4
Number list 5 : DN 5
Number list 6 : DN 6
Number list 7 : DN 7
Proxy Ip address is 0.0.0.0
DTMF Relay is enabled, rtp-nte, sip-notify
kpml signal is enabled
Lpcor Type is none
Dialpeers created:
Dial-peers for Pool 1:
dial-peer voice 40004 voip
destination-pattern 1000
redirect ip2ip
session target ipv4:9.13.18.40:19633
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160
after-hours-exempt FALSE
dial-peer voice 40001 voip
destination-pattern 2000
redirect ip2ip
session target ipv4:9.13.18.40:19634
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160
after-hours-exempt FALSE
dial-peer voice 40002 voip
destination-pattern 3000
redirect ip2ip
session target ipv4:9.13.18.40:19635
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160
after-hours-exempt FALSE
dial-peer voice 40003 voip
destination-pattern 4000
redirect ip2ip
session target ipv4:9.13.18.40:19636
session protocol sipv2
dtmf-relay rtp-nte sip-notify
digit collect kpml
codec g711ulaw bytes 160
after-hours-exempt FALSE
Statistics:
Active registrations : 4
Total SIP phones registered: 1
Total Registration Statistics
Registration requests : 4
Registration success : 4
Registration failed : 0
unRegister requests : 0
unRegister success : 0
unRegister failed : 0
Attempts to register
after last unregister : 0
Last register request time : .05:22:55.604 UTC Tue Oct 6 2009
Last unregister request time :
Register success time : .05:22:55.604 UTC Tue Oct 6 2009
Unregister success time :

```

Table 27: [show voice register pool registered Field Descriptions \(Continued\)](#), on page 306 contains descriptions of significant fields shown in the **show voice register pool registered** command output, listed in alphabetical order.

**Table 27: show voice register pool registered Field Descriptions (Continued)**

Field	Description
Active registrations	Shows the current active registrations.
Application	Shows the <b>application</b> command configuration for this pool.
Call Waiting	Shows the setting of the <b>call-waiting</b> command.
Class of Restriction List Tag	Shows the COR tag.
Config	Shows the voice register pool.
Current phone-load	Shows the current version of the phone load.
Default preference	Shows the default preference value of this pool.
Dialpeers created	Results in a list of all dial peers created and their contents. Dial-peer contents differ for each application and are not described here.
DnD	Shows the setting of the <b>dnd-control</b> command.
DTMF Relay	Shows the setting of the <b>dtmf-relay</b> command.
Emergency response location	Shows the ephone's emergency response location to which an emergency response team is dispatched when an emergency call is made.
Incoming called number	Shows the <b>incoming called-number</b> command configuration.
Incoming corlist name	Shows the <b>cor</b> command configuration.
keep-conference	Shows the status of the <b>keep-conference</b> command.
Lpcor Incoming	Shows the setting of the <b>lpcor incoming</b> command.
Lpcor Outgoing	Shows the setting of the <b>lpcor outgoing</b> command.
Lpcor Type	Shows the setting of the <b>lpcor type</b> command.
Mac address	Shows the MAC address of this SIP phone as defined by the <b>id</b> command.
Network address and Mask	Shows network address and mask information when the <b>id</b> command is configured.
Number list, Pattern, and Preference	Shows the <b>number</b> command configuration.
Pool Tag	Shows the assigned tag number of the current pool.
Previous phone-load	Shows the version of the previous phone load.

Field	Description
Proxy IP address	Shows the <b>proxy</b> command configuration; that is, the IP address of the external SIP server.
Registration failed	Shows the failed registrations.
Registration requests	Shows the incoming registration requests.
Registration success	Shows the successful registrations.
Statistics	Shows the registration statistics for this pool.
statistics time-stamps	Shows the registration statistics for this pool with specific time stamps.
Template	Shows the template-tag number for the template applied to this SIP phone.
Total Registration Statistics	Shows the total registration statistics for this pool.
Translate outgoing called tag	Shows the <b>translate-outgoing</b> command configuration.
Type	Shows the phone type identified for this SIP phone using the <b>type</b> command.
unRegister failed	Reports the number of failed unregisters.
unRegister requests	Shows the incoming unregister/registration expiry requests.
unRegister success	Reports the number of successful unregisters.
Username Password	Shows the values within the authentication credential.

## Related Commands

Command	Description
<b>application (voice register pool)</b>	Selects the session-level application for the dial peer associated with an individual Cisco Unified SIP IP phone in a Cisco Unified CME environment or for a group of phones in a Cisco Unified SIP SRST environment.
<b>call-waiting (voice register pool)</b>	Enables the call-waiting option on a SIP phone.
<b>cor (voice register pool)</b>	Configures a class of restriction on the VoIP dial peers associated with directory numbers.
<b>dnd-control (voice register template)</b>	Enables the Do-Not-Disturb (DND) soft key on SIP phones.
<b>dtmf-relay (voice register pool)</b>	Specifies the list of dual-tone multifrequency (DTMF) relay methods that can be used to relay DTMF audio tones between SIP endpoints.
<b>id (voice register pool)</b>	Explicitly identifies a locally available, individual Cisco Unified SIP IP phone or, when running Cisco Unified SIP SRST, a set of Cisco Unified SIP IP phones.

Command	Description
<b>incoming called-number (dial peer)</b>	Specifies a digit string that can be matched by an incoming call to associate the call with a dial peer.
<b>keep-conference (voice register pool)</b>	Allows IP phone conference initiators to exit from conference calls and keep the remaining parties connected.
<b>lpcor incoming</b>	Associates an incoming call with a logical partitioning class of restriction (LPCOR) resource-group policy.
<b>lpcor outgoing</b>	Associates an outgoing call with an LPCOR resource-group policy.
<b>lpcor type</b>	Specifies the LPCOR type for an IP phone.
<b>number (voice register pool)</b>	Indicates the E.164 phone numbers that the registrar permits to handle the Register message from a Cisco Unified SIP IP phone.
<b>proxy (voice register pool)</b>	Autogenerates additional VoIP dial peers to reach the main proxy whenever a Cisco Unified SIP IP phone registers with a Cisco Unified SIP SRST gateway.
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register dial-peers</b>	Displays details of all dynamically created VoIP dial peers associated with the Cisco Unified SIP SRST or Cisco Unified CME register event.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
<b>show voice register pool unregistered</b>	Displays the details of voice register pools that do not have any phones registered.
<b>translate-outgoing (voice register pool)</b>	Allows an explicit setting of translation rules on the VoIP dial peer to modify a phone number dialed by any Cisco Unified IP phone user.
<b>type (voice register pool)</b>	Defines a phone type for a SIP phone.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# show voice register pool ringing

To display the details of phones that are currently in ringing state, use the **show voice register pool ringing** command in privileged EXEC mode.

**show voice register pool ringing [brief]**

## Syntax Description

*brief* (Optional) Displays brief details of SIP phones that are currently in ringing state.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Version	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phone that are currently in ringing state. When used with the **brief** keyword, the **show voice register pool ringing brief** command only displays information related to calls that are bound towards the SIP phones.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for phones ringing in a voice register pool:

```
Router# show voice register pool ringing brief
Pool IP Address      Number      Remote Number
=====
2      8.33.33.112      45112      45111
```

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for phones ringing in a voice register pool:

```
Router# show voice register pool ringing
Pool tag: 2
=====
MAC Address       : 0015.C68E.6D13
Contact IP        : 8.33.33.112
Phone Number      : 45112
Remote Number     : 45111
Call 1
SIP Call ID       : C0B5DA7-ADA311DE-8011803A-FF3E4CBC@8.3.3.5
State of the call  : STATE_REC'D_PROCEEDING (4)
Substate of the call : SUBSTATE_PROCEEDING_PROCEEDING (2)
Calling Number     : 45111
Called Number      : 45112
Bit Flags          : 0xC00018 0x100 0x280
```

**show voice register pool ringing**

```

CC Call ID           : 5
Source IP Address (Sig) : 8.3.3.5
Destn SIP Req Addr:Port : [8.33.33.112]:5060
Destn SIP Resp Addr:Port : [8.33.33.112]:5060
Destination Name      : 8.33.33.112
Number of Media Streams : 1
Number of Active Streams: 1
RTP Fork Object       : 0x0
Media Mode            : flow-through
Media Stream 1
  State of the stream   : STREAM_ACTIVE
  Stream Call ID        : 5
  Stream Type           : voice+dtmf (1)
  Stream Media Addr Type : 1
  Negotiated Codec      : No Codec      (0 bytes)
  Codec Payload Type     : 255 (None)
  Negotiated Dtmf-relay  : inband-voice
  Dtmf-relay Payload Type : 0
  QoS ID                : -1
  Local QoS Strength     : BestEffort
  Negotiated QoS Strength : BestEffort
  Negotiated QoS Direction : None
  Local QoS Status       : None
  Media Source IP Addr:Port : [8.3.3.5]:16882

```

**Related Commands**

Command	Description
<b>show sip-ua calls</b>	Displays active user agent client (UAC) and user agent server (UAS) information on SIP calls
<b>show voice register all</b>	Displays all Cisco SIP SRST and Cisco CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.



# show voice register pool telephone-number

To display the details of a phone line with a specific telephone-number, use the **show voice register pool telephone-number** command in privileged EXEC mode.

**show voice register pool telephone-number number**

## Syntax Description

<i>number</i>	Number identifying a specific phone.
---------------	--------------------------------------

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the phone line with the specified telephone-number. If the line is registered, the contact ip address will be displayed. When the phone line is not registered and the pool ID type is network IP, the IP address is not displayed. When the phone line is not registered but some other line is registered for the same pool with MAC or IP address, then the IP address is displayed.

### Cisco Unified CME

The following is a sample output from this command displaying all statistical information:

```
Router# show voice register pool telephone number 45112
Pool ID          IP Address          Ln DN   Number          State
=====
2      0015.C68E.6D13          1 2    45112          UNREGISTERED
7      0018.BAC8.D2B1          1 2    45112          UNREGISTERED
```

### Cisco Unified SRST

```
Router# show voice register pool telephone-number 1000
Pool ID          IP Address          Ln DN   Number          State
=====
1      9.13.18.40      9.13.18.40      1 1    1000          REGISTERED
```

The following table contains descriptions of significant fields shown in this output, listed in alphabetical order.

**Table 28: show voice register pool telephone number field descriptions**

Field	Description
DN	Directory number of the phone.
ID	Phone identification (ID) address.

Field	Description
IP Address	IP address and port number of the phones
LN	Line number of the phone.
Number	Number of the phones.
Pool	Shows the current pool.
State	Registration state.

#### Related Commands

Command	Description
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
show voice register pool detail all	Displays the details of all the pools defined in the system.

# show voice register pool unregistered

To display the details of the voice registration pools that do not have any phones registered, use the **show voice register pool unregistered** command in privileged EXEC mode.

**show voice register pool unregistered**

## Syntax Description

This command has no arguments or keywords.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Version	Modification
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	This command was introduced.

## Usage Guidelines

Use this command to display the details of the pools that do not have any active registrations. In Cisco Unified SRST, if multiple phones are trying to register through the same pool and if one phone successfully registers and the others do not, the pool is not considered as an unregistered pool, as it does have an active registration of the registered phone.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying information for pools with no active registration:

```
Router# show voice register pool unregistered
Pool Tag: 2
MAC Address           : 0015.C68E.6D13
No. of attempts to register: 0
Unregister time       :
Last register request time :
Reason for state unregister:
    No registration request since last reboot/unregister
Pool Tag: 3
MAC Address           : 0021.5553.8998
No. of attempts to register: 0
Unregister time       :
Last register request time :
Reason for state unregister:
    No registration request since last reboot/unregister
Pool Tag: 4
MAC Address           : 8989.9867.8769
No. of attempts to register: 0
Unregister time       :
Last register request time :
Reason for state unregister:
    No registration request since last reboot/unregister
```

**Related Commands**

Command	Description
<b>show voice register all</b>	Displays all Cisco SIP SRST and Cisco CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
<b>show voice register pool registered</b>	Displays details of phones that successfully register to Cisco Unified CME or Cisco Unified SRST.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# show voip sip-oauth key-server status

To display key retrieval details for SIP OAuth from CUCM.

## show voip sip-oauth key-server status

<b>Syntax Description</b>	This command has no arguments or keywords.
---------------------------	--

<b>Command Modes</b>	Privileged EXEC (#)
----------------------	---------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Cisco IOS XE Cupertino 17.8.1a	This command was introduced.

```
CUBE1-1B#show voip sip-oauth key-server status
Key-server: 10.1.10.50
Last Request Time: 11:40:58.389 UTC Fri Nov 12 2021
Last Success response Time: 11:40:58.456 UTC Fri Nov 12 2021
Current Status: SUCCESS
Next Request Time: 11:40:58.389 UTC Sat Nov 13 2021
Total requests sent: 13
Total success responses: 3
Total failure responses: 10
```

```
CUBE1-1B#show voip sip-oauth key-server status
Key-server: 10.10.10.40
Last Request Time: 11:29:26.985 UTC Fri Nov 12 2021
Last Success response Time:
Current Status: FAILURE (Timeout Error)
Next Request Time: 11:29:26.985 UTC Sat Nov 13 2021
Total requests sent: 8
Total success responses: 0
Total failure responses: 8
```

# show voice register statistics

To display statistics associated with the registration event, use the **show voice register statistics** command in privileged EXEC mode.

**show voice register statistics** [{**global** | **pool tag**}]

## Syntax Description

global	(Optional) Displays aggregate statistics associated with the SIP phone registration event.
pool tag	(Optional) Displays registration pool statistics associated with a specific pool tag. The maximum number of pools is version and platform dependent. Type ? to display a list of values.

## Command Modes

Privileged EXEC

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
15.1(2)T	Cisco CME 8.1 Cisco SIP SRST 8.1	This command was modified. The global and pool keywords and tag argument were added. The output display was also modified to show more information about pools in unregistered state and time-stamps of registration event.

## Usage Guidelines

When using the **show voice register statistics** command, you can verify that the number of Registration and unRegister successes for global statistics are the sum of the values in the individual pools. Because some Registrations fail even before matching a voice register pool, for Registration and unRegister failed statistics the value is not the sum of the values in the individual pools. Immediate failures are accounted in the global statistics.

In Cisco Unified CME 8.1 and Cisco Unified SIP SRST 8.1, the time-stamps for the events is displayed along with other registration related statistics. The command output also displays the reason for pools in unregistered state. Use the show voice register statistics command with pool tag keyword to display registration pool statistics associated with a specific pool.

When using the global keyword, the show voice register command output displays the aggregate statistics associated with SIP phone registration. The output of this command also displays the attempted-registrations table.

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying all statistical information:

```

Router# show voice register statistics
Sample Output:
Global statistics
  Active registrations      : 2
  Total SIP phones registered: 2
  Total Registration Statistics
    Registration requests   : 3
    Registration success    : 2
    Registration failed     : 1
    unRegister requests     : 0
    unRegister success      : 0
    unRegister failed       : 0
    Attempts to register
      after last unregister : 1
    Last Register Request Time : *11:42:31.783 UTC Wed Sep 16 2009
    Last Unregister Request Time :
    Register Success Time      : *11:11:56.707 UTC Wed Sep 16 2009
    Unregister Success Time    :
Register pool 1 statistics
  Active registrations      : 1
  Total SIP phones registered: 1
  Total Registration Statistics
    Registration requests   : 1
    Registration success    : 1
    Registration failed     : 0
    unRegister requests     : 0
    unRegister success      : 0
    unRegister failed       : 0
    Attempts to register
      after last unregister : 0
    Last Register Request Time : *11:11:54.615 UTC Wed Sep 16 2009
    Last Unregister Request Time :
    Register Success Time      : *11:11:54.623 UTC Wed Sep 16 2009
    Unregister Success Time    :
Register pool 2 statistics
  Active registrations      : 1
  Total SIP phones registered: 1
  Total Registration Statistics
    Registration requests   : 1
    Registration success    : 1
    Registration failed     : 0
    unRegister requests     : 0
    unRegister success      : 0
    unRegister failed       : 0
    Attempts to register
      after last unregister : 0
    Last Register Request Time : *11:11:56.707 UTC Wed Sep 16 2009
    Last Unregister Request Time :
    Register Success Time      : *11:11:56.707 UTC Wed Sep 16 2009
    Unregister Success Time    :

```

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from this command displaying all statistical information:

```

Router# show voice register statistics global
Global Statistics:
  Active registrations      : 1
  Total SIP phones registered: 2
  Total Registration Statistics

```

**show voice register statistics**

```

R egistration requests : 97715
Registration success   : 3
Registration failed    : 97712
unRegister requests   : 1
unRegister success     : 1
unRegister failed      : 0
Attempts to register
    after last unregister : 97712
Last register request time : *06:45:11.127 UTC Wed Oct 14 2009
Last unregister request time : *11:56:22.179 UTC Tue Oct 13 2009
Register success time      : *12:10:37.263 UTC Tue Oct 13 2009
Unregister success time    : *11:56:22.182 UTC Tue Oct 13 2009
Phones that have attempted registrations and have failed:
MAC address: 001b.535c.d410
IP address : 8.3.3.111
Attempts   : 97712
Time of first attempt : *12:20:32.775 UTC Tue Oct 13 2009
Time of latest attempt: *06:46:14.815 UTC Wed Oct 14 2009
Reason for failure    :
    Unauthorized registration request

```

**Cisco Unified CME and Cisco Unified SRST**

The following is a sample output from this command displaying all statistical information associated with pool 1:

```

Router# show voice register statistics pool 1
Pool 1 Statistics:
Active registrations : 0
Total SIP phones registered: 1
Total Registration Statistics
    Registration requests : 2
    Registration success   : 2
    Registration failed    : 0
    unRegister requests   : 1
    unRegister success     : 1
    unRegister failed      : 0
    Attempts to register
        after last unregister : 0
    Last register request time : *12:10:37.259 UTC Tue Oct 13 2009
    Last unregister request time : *11:56:22.179 UTC Tue Oct 13 2009
    Register success time      : *12:10:37.263 UTC Tue Oct 13 2009
    Unregister success time    : *11:56:22.182 UTC Tue Oct 13 2009
Reason for unregistered state:
    No registration request since last reboot/unregister

```

[Table 29: show voice register statistics Field Descriptions, on page 318](#) describes the significant fields shown in this output.

**Table 29: show voice register statistics Field Descriptions**

Field	Description
Statistics:	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the registration statistics for this pool.
Active registrations	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the current active registrations.



Field	Description
Last Register Request Time	Used with all, pool, and statistics keywords. Shows details such as day, date, and time when the phones requested to register the last time.
Last unRegister Request Time	Used with all, pool, and statistics keywords. Shows details such as day, date, and time when the phones requested to unregister the last time.
Total Registration Statistics	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the total registration statistics for this pool.
Registration requests	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the incoming registration requests.
Registration success	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the successful registrations.
Registration failed	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the failed registrations.
unRegister requests	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Shows the incoming unregister/registration expire requests.
unRegister success	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Reports the number of successful unregisters.
unRegister failed	Used with the <b>all</b> , <b>pool</b> , and <b>statistics</b> keywords. Reports the number of failed unregisters.
Global statistics	Used with the <b>statistics</b> keyword. Details all active registrations.
Register pool <i>number</i> statistics	Used with the <b>statistics</b> keyword. Details specific pool statistics.

## Related Commands

Command	Description
<b>show voice register all</b>	Displays all Cisco Unified SIP SRST and Cisco Unified CME configurations and register information.
<b>show voice register pool</b>	Displays all configuration information associated with a particular voice register pool.
show voice register pool attempted-registrations	Displays the details of phones that attempt to register with Cisco Unified CME or Cisco Unified SRST and fail.

# srtp-crypto

To assign a previously configured crypto-suite selection preference list globally or to a voice class tenant, use the **srtp-crypto** command. To remove the crypto-suite selection preference and return to default preference list, use the **no** or **default** form of this command.

**srtp-crypto** *crypto-tag*

**no srtp-crypto**

**default srtp-crypto**

## Syntax Description

*crypto-tag* Unique number that is assigned to the voice class. The range is 1–10000.  
This number maps to the tag created using the **voice class srtp-crypto** command available in global configuration mode.

## Command Default

No crypto-suite preference assigned.

## Command Modes

voice class tenant configuration (config-class)  
voice service voice sip configuration (conf-serv-sip)  
Voice register pool (config-register-pool).

## Command History

Release	Modification
Cisco IOS XE Everest 16.5.1b	This command was introduced.
Cisco IOS XE Cupertino 17.8.1a	Implemented <b>voice class srtp-crypto tag</b> under voice register pool.

## Usage Guidelines

From Cisco IOS XE Cupertino 17.8.1a, **voice class srtp-crypto tag** is implemented under voice register pool mode. This command associates SRTP crypto ciphers with the pool.



**Note** Ensure that SRTP voice-class is created using the **voice class srtp-crypto crypto-tag** command before executing the **srtp-crypto crypto tag** command to apply the crypto-tag under global or tenant configuration mode.

You can assign only one crypto-tag. If you assign another crypto-tag, the last crypto-tag that is assigned replaces the previous crypto-tag.

## Example

Example for assigning a crypto-suite preference to a voice class tenant:

```
Device> enable
Device# configure terminal
Device(config)# voice class tenant 100
Device(config-class)# srtp-crypto 102
```

Example for assigning a crypto-suite preference globally:

```

Device> enable
Device# configure terminal
Device(config)# voice service voice
Device(conf-voi-serv)# sip
Device(conf-serv-sip)# srtp-crypto 102

```

The following is an example of **voice class srtp-crypto tag** under voice register pool mode.

```

Router(config)#voice class srtp-crypto 22
Router(config-class)#crypto ?

Router(config-class)#crypto ?
    <1-4>    Set the preference order for the cipher-suite (1 = Highest)

Router(config-class)#crypto 1 ?
    AEAD_AES_128_GCM    Allow secure calls with SRTP AEAD_AES_128_GCM
    AEAD_AES_256_GCM    Allow secure calls with SRTP AEAD_AES_256_GCM
    AES_CM_128_HMAC_SHA1_32    Allow secure calls with SRTP AES_CM_128_HMAC_SHA1_32
    AES_CM_128_HMAC_SHA1_80    Allow secure calls with SRTP AES_CM_128_HMAC_SHA1_80
Router(config-class)#crypto 1 AEAD_AES_256_GCM

Router(config-class)#do show run | sec srtp-cry
    voice class srtp-crypto 22
    crypto 1 AEAD_AES_256_GCM

Router(config)# voice register pool 17
Router(config-register-pool)# id network 10.1.10.217 mask 255.255.255.255
Router(config-register-pool)# dtmf-relay rtp-nte
Router(config-register-pool)# codec g711ulaw

```

When you configure **srtp-crypto 23**, which is not present:

```

Router(config-register-pool)#voice-class srtp-crypto 23
ERROR: There is no voice-class srtp-crypto 23

```

When you configure **srtp-crypto 22**, which is present:

```

Router(config-register-pool)#voice-class srtp-crypto 22

```

Show run output for pool:

```

Router#show running-config | sec voice register pool 17
voice register pool 17
id network 10.1.10.217 mask 255.255.255.255
dtmf-relay rtp-nte
voice-class srtp-crypto 22
codec g711ulaw
Router#

```



**Note** **voice class srtp-crypto** must be configured before adding to a voice register pool.

#### Related Commands

Command	Description
<b>voice class sip srtp-crypto</b>	Enters voice class configuration mode and assigns an identification tag for a srtp-crypto voice class.
<b>crypto</b>	Specifies the preference for the SRTP cipher-suite that will be offered by Cisco Unified Border Element (CUBE) in the SDP in offer and answer.

Command	Description
<b>show sip-ua calls</b>	Displays active user agent client (UAC) and user agent server (UAS) information on Session Initiation Protocol (SIP) calls.
<b>show sip-ua srtp</b>	Displays Session Initiation Protocol (SIP) user-agent (UA) Secure Real-time Transport Protocol (SRTP) information.

# subnet

To define which IP phones are part of an emergency response location (ERL) for the enhanced 911 service, use the **subnet** command in voice emergency response location configuration mode. To remove the subnet definition, use the **no** form of this command.

**subnet** [{1 | 2}] *IPaddress mask*  
**no subnet** [{1 | 2}]

## Syntax Description

<i>IPaddress</i>	IP address that identifies which IP phones are part of the ERL.
<i>mask</i>	IP subnet mask for the network segment that is part of the ERL.

## Command Default

No subnets are defined.

## Command Modes

Voice emergency response location configuration (cfg-emrgncy-esp-location)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was added to Cisco Unified CME.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command defines the groups of IP phones that are part of an ERL. You can create up to 2 different subnets. To include all phones on a single ERL, you can set the subnet mask to 0.0.0.0 to indicate a “catch-all” subnet.

## Examples

In the following example, all IP phones with the IP address of 10.X.X.X or 192.168.X.X are automatically associated with this ERL. If one of the phones dials 911, its extension is replaced with 408 555-0100 before it goes to the PSAP. The PSAP will see that the caller’s number is 408 555-0100.

```
voice emergency response location 1
 elin 1 4085550100
 subnet 10.0.0.0 255.0.0.0
 subnet 2 192.168.0.0 255.255.0.0
```

## Related Commands

Command	Description
<b>elin</b>	Specifies a PSTN number that will replace the caller’s extension.

## system message (call-manager-fallback)

To customize the system message text displayed on all Cisco IP phones units in fallback mode that are connected to a Cisco Unified Survivable Remote Site Telephony (SRST) router, use the **system message** command in call-manager-fallback configuration mode. To disable the customized message and return to the default system message, use the **no** form of this command.

**system message** {**primary** *primary-string* | **secondary** *secondary-string*}  
**no system message** {**primary** *primary-string* | **secondary** *secondary-string*}

### Syntax Description

<b>primary</b>	Sets the system message for Cisco IP phones that can support static text messages during fallback, such as the Cisco IP Phone 7940 and the Cisco IP Phone 7960.
<i>primary-string</i>	Text string of less than 32 characters.
<b>secondary</b>	Sets the system message for Cisco IP phones that do not support static text messages and that have a limited display space, such as the Cisco IP Phone 7910.
<i>secondary-string</i>	Text string of less than 20 characters.

### Command Default

The default fallback display message for Cisco IP phones that support static text messages is “CM Fallback Service Operating.” For Cisco IP phones that do not support static text messages, the default message is “CM Fallback Service.”

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

Changes to the display message configuration occur only after a phone reset, at the end of each call, or on receipt of the next keepalive message from an idle phone.

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

Secondary IP phones flash system messages during fallback.

### Examples

The following example sets the system message to “Customized Message” for all Cisco IP Phone 7940 and Cisco IP Phone 7960 units connected to a Cisco Unified SRST router:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# system
message primary Customized Message
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST feature support and enters <b>call-manager-fallback</b> configuration mode.

# system message (voice register global)

To define a message that displays on SIP phones in a Cisco Unified Survivable Remote Site Telephony (Cisco Unified SRST) system, use the **system message** command in voice register global configuration mode. To return to the default, use the **no** form of this command.

**system message** *string*

**no system message**

## Syntax Description

<i>string</i>	Message that displays on SIP phones after the phones failover to Cisco Unified SRST. String can contain a maximum of 32 alphanumeric characters.
---------------	--

## Command Default

“CM Fallback Service Operating” message from dictionary file displays.

## Command Modes

Voice register global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(11)XJ	Cisco Unified SRST 4.1	This command was introduced.
12.4(15)T	Cisco Unified CME 4.1	This command was integrated into Cisco IOS Release 12.4(15)T.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

## Usage Guidelines

The command allows you to customize the idle prompt message that displays on the status line of SIP phones after the phones lose connection with Cisco Unified Communications Manager and failover to Cisco Unified SRST. The default message that displays is from the dictionary file for the phone. The configured message displays until the phones fallback to Cisco Unified Communications Manager. For versions earlier than Cisco Unified SRST 4.1, the phones display the default message from the dictionary file.

This command is not supported on the Cisco Unified IP Phone 7905, 7912, 7940, or 7960.

## Examples

The following example shows that SIP phones will display the message, “SRST service active” after the phones register to Cisco Unified SRST.

```
Router(config)# voice register global
Router(config-register-global)# system message SRST service active
```

## Related Commands

Command	Description
<b>show voice register global</b>	Displays all global configuration parameters associated with SIP phones.



## time-format (call-manager-fallback)

To set the time display format on all Cisco IP phones attached to a router, use the **time-format** command in call-manager-fallback configuration mode. To disable the time display format, use the **no** form of this command.

**time-format** {12 | 24}  
**no time-format** {12 | 24}

### Syntax Description

<b>12</b>	Sets format to 12-hour increments.
<b>24</b>	Sets format to 24-hour increments.

### Command Default

12-hour format

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 and Cisco 3600 series multiservice routers, Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

### Examples

The following example shows the time format on the Cisco IP phones being set to the 24-hour format:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# time-format 24
```

### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) support and enters call-manager-fallback configuration mode.

## timeouts busy (call-manager-fallback)

To set the timeout value for call transfers to busy destinations, use the **timeouts busy** command in call-manager-fallback configuration mode. To return to the default value, use the **no** form of this command.

**timeouts busy** *seconds*

**no timeouts busy**

Syntax Description	<i>seconds</i> Number of seconds after connection to a busy destination before a transferred call is disconnected. Range is from 0 to 30 seconds. Default is 10.								
Command Default	10 seconds								
Command Modes	Call-manager-fallback configuration								
Command History	<table><tr><th>Cisco IOS Release</th><th>Cisco Product</th><th>Modification</th></tr><tr><td>12.2(8)T</td><td>Cisco SRST 2.0</td><td>This command was introduced.</td></tr></table>			Cisco IOS Release	Cisco Product	Modification	12.2(8)T	Cisco SRST 2.0	This command was introduced.
Cisco IOS Release	Cisco Product	Modification							
12.2(8)T	Cisco SRST 2.0	This command was introduced.							
Usage Guidelines	<p>For calls that are transferred to busy destinations, this command sets the amount of time after connection to the busy destination before the call is disconnected.</p> <p>Note that the timeout set by this command applies only to calls that are transferred to busy destinations and not to calls that directly dial busy destinations.</p>								
Examples	<p>The following example sets the ringing timeout to 10 seconds:</p> <pre>Router(config)# <b>call-manager-fallback</b> Router(config-cm-fallback)# <b>timeouts busy 20</b></pre>								
Related Commands	<table><tr><th>Command</th><th>Description</th></tr><tr><td><b>call-manager-fallback</b></td><td>Enables Cisco Unified Survivable Remote Site Telephony (SRST) and enters <b>call-manager-fallback</b> configuration mode.</td></tr></table>			Command	Description	<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) and enters <b>call-manager-fallback</b> configuration mode.		
Command	Description								
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) and enters <b>call-manager-fallback</b> configuration mode.								

## timeouts interdigit (call-manager-fallback)

To configure the interdigit timeout value for all Cisco IP phones attached to a router, use the **timeouts interdigit** command in call-manager-fallback configuration mode. To return the interdigit timeout value to its default, use the **no** form of this command.

**timeouts interdigit** *seconds*  
**no timeouts interdigit**

<b>Syntax Description</b>	<table> <tr> <td><i>seconds</i></td><td>Interdigit timeout duration, in seconds, for all Cisco IP phones. Valid entries are integers from 2 to 120.</td></tr> </table>	<i>seconds</i>	Interdigit timeout duration, in seconds, for all Cisco IP phones. Valid entries are integers from 2 to 120.
<i>seconds</i>	Interdigit timeout duration, in seconds, for all Cisco IP phones. Valid entries are integers from 2 to 120.		

**Command Default** No default behavior or values.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.2(2)XB	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers; Cisco IAD2420 series IADs; Cisco 7200 series routers.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Usage Guidelines** The **timeouts interdigit** command specifies how long, in seconds, the system waits after a caller enters the initial digit or a subsequent digit of the dialed string. The interdigit timer is activated when the caller enters a digit and is restarted each time the caller enters subsequent digits until the destination address is identified. If the configured timeout value is exceeded before the destination address is identified, a tone sounds and the call is terminated.

**Examples** The following example sets the interdigit timeout value to 5 seconds for all Cisco IP phones:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# timeouts interdigit 5
```

In this example, the 5 seconds refers to the elapsed time after which an incompletely dialed number times out. For example, if you dial nine digits (408555010) instead of the required ten digits (4085550100), you hear a busy tone after the 5 “timeout” seconds have elapsed.

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) support and enters call-manager-fallback configuration mode.
<b>timeouts interdigit (voice port)</b>	Configures the interdigit timeout value for a specified voice port.

## timeouts ringing (call-manager-fallback)

To set the time before a disconnect code is returned on phones without a call-forward no-answer configuration, use the **timeouts ringing** command in call-manager-fallback configuration mode. To disable the time setting, use the **no** form of this command.

**timeouts ringing** *seconds*  
**no timeouts ringing**

<b>Syntax Description</b>	<i>seconds</i>	The duration, in seconds, for which a voice port allows ringing to continue if a call is not answered. The range is from 5 to 60000.
---------------------------	----------------	--

**Command Default** No default behavior or values.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	Cisco IOS Release	Cisco Product	Modification
	12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
	12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

**Usage Guidelines** This mechanism protects against hung inbound calls through interfaces that do not have forward disconnect supervision, such as Foreign Exchange Office (FXO).  
 Expiration of the timeout causes incoming calls to return a disconnect code to the caller.

**Examples** The following example sets the ringing timeout to 10 seconds:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# timeouts ringing 10
```

<b>Related Commands</b>	Command	Description
	<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) and enters call-manager-fallback configuration mode.

# transfer max-length (voice register pool)

To specify the maximum length of the transfer number, use the **transfer max-length** command in voice register pool or voice register template configuration mode. To disable the maximum length, use the **no** form of this command.

**transfer max-length** *max-length*  
**no transfer max-length** *max-length*

## Syntax Description

<i>max-length</i>	Maximum length of the transfer number. Range is 3 to 16.
-------------------	--

## Command Default

No maximum length is specified for the transfer number.

## Command Modes

Voice register pool configuration (config-register-pool)

Voice register template configuration ((config-register-temp))

## Command History

Release	Modification
15.3(2)T	This command was introduced.

## Usage Guidelines

The **transfer max-length** command is used to indicate the maximum length of the number being dialed for a call transfer. When only a specific number of digits are to be allowed during a call transfer, a value between 3 and 16 is configured. When the number dialed exceeds the maximum length configured, then the call transfer is blocked.

## Examples

The following example shows how to configure the maximum length of the transfer number under voice register pool 1. Because the maximum length is configured as 5, only call transfers to Cisco Unified SIP IP phones with a five-digit directory number are allowed. All call transfers to directory numbers with more than five digits are blocked.

```
Router# configure terminal
Router(config)# voice register pool 1
Router(config-register-pool)# transfer max-length 5
```

The following example shows how to configure the maximum length of the transfer number for a set of phones under voice register template 2:

```
Router# configure terminal
Router(config)# voice register template 2
Router(config-register-temp)# transfer max-length 10
```

Command	Description
<b>voice register pool</b>	Enters voice register pool configuration mode and creates a pool configuration for a SIP IP phone in Cisco Unified CME or for a set of SIP phones in Cisco Unified SIP SRST

Command	Description
<b>voice register template</b>	Enters voice register template configuration mode and defines a template of common parameters for SIP phones.

# transfer-digit-collect

To select the digit-collection method for consultative call-transfers, use the **transfer-digit-collect** command in telephony-service configuration mode for Cisco Unified CME or in call-manager-fallback configuration mode for Cisco Unified SRST. To reset to the default value, use the **no** form of this command.

**transfer-digit-collect** {new-call | orig-call}  
**no transfer-digit-collect**

## Syntax Description

<b>new-call</b>	Dialed digits are collected from new call leg. Default value.
<b>orig-call</b>	Dialed digits are collected from original call leg.

## Command Default

Digits are collected from the new consultative call-leg (**new-call** keyword).

## Command Modes

Telephony-service configuration (config-telephony)

Call-manager-fallback configuration (config-cm-fallback)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command specifies whether the dialed digits of the target number are collected on the original call leg or on the new call leg that is created when a phone user initiates a consultative call-transfer.

For consultative transfers, a local number is matched on the **number** command in ephone-dn configuration mode; a PSTN number is matched on the **transfer-pattern** command in telephony service mode.

The **orig-call** keyword selects the method used in versions before Cisco Unified CME 4.3 and Cisco Unified SRST 4.3. After a phone user presses the Transfer soft key, the dialed digits of the target number are collected on the original call leg and buffered until either a local ephone-dn or transfer-pattern is matched. When the transfer-to number is matched, the original call is put on hold and an idle line or channel is seized to send the dialed digits from the buffer.

The **new-call** keyword selects the default method that is used in Cisco Unified CME 4.3 and later versions and Cisco Unified SRST 4.3 and later versions. The transfer-to digits are collected on a new consultative call-leg that is created when the user presses the Transfer soft key. The consultative call-leg is seized and the dialed digits are passed on without being buffered until the digits are matched and the consultative call-leg moves to the alerting state.

The **new-call** keyword is supported only if:

- The **transfer-system full-consult** command (default) is set in telephony-service configuration mode.
- The **transfer-mode consult** command (default) is set for transferor's directory number (ephone-dn).



- An idle line or channel is available for seizing, digit collection, and dialing.

A consultative transfer is one in which the transferring party either connects the caller to a ringing phone (ringback heard) or speaks with the third party before connecting the caller to the third party.

### Examples

The following example shows the digit-collection set to the method used in versions before Cisco Unified CME 4.3 and Cisco Unified SRST 4.3:

```
Router(config)# telephony-service
Router(config-telephony)# transfer-digit-collect orig-call
```

### Related Commands

Command	Description
<b>transfer-mode</b>	Specifies the type of call transfer for an individual directory number that uses the ITU-T H.450.2 standard.
<b>transfer-pattern</b> (telephony-service)	Allows the transfer of calls to phones outside the local Cisco Unified CME network.
<b>transfer-system</b>	Specifies the call transfer method for all IP phones on a Cisco Unified CME router using the ITU-T H.450.2 standard.

# transfer-pattern

To allow Cisco IP phones to transfer telephone calls from callers outside the local IP network to another Cisco IP phone, use the **transfer-pattern** command in call-manager-fallback configuration mode. To disable transfer of calls to other numbers, use the **no** form of this command.

**transfer-pattern** *transfer-pattern*  
**no transfer-pattern**

<b>Syntax Description</b>	<i>transfer-pattern</i> String of digits for permitted call transfers. Wildcards are allowed.
---------------------------	---

**Command Default** This feature is enabled.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Usage Guidelines** The **transfer-pattern** command allows you to transfer a call from a non-IP phone number to another Cisco IP phone on the same IP network using the specified transfer pattern. By default, all Cisco IP phone directory numbers or virtual voice ports are allowed as transfer targets.

When you define transfers to nonlocal numbers, it is important to note that transfer-pattern digit matching is performed before translation-rule operations. Therefore, you should specify in this command the digits that are actually entered by phone users before they are translated. For more information, see [Enabling Digit Translation Rules](#) section in the [Cisco IOS Survivable Remote Site Telephony Version 3.3 System Administrator Guide](#).

**Examples** The following example sets a transfer pattern:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# transfer-pattern 55501..
```

A maximum of 32 transfer patterns can be entered. In this example, 55501.. (the two decimal points are used here as wildcards) permits transfers to any numbers in the range from 555-0100 to 555-0199.

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) support and enters call-manager-fallback configuration mode.

# transfer-pattern blocked (voice register pool)

To block all call transfers for a specific Cisco Unified SIP IP phone or a set of Cisco Unified SIP IP phone, use the **transfer-pattern blocked** command in voice register pool and voice register template configuration mode. To allow call transfers, use the **no** form of this command.

**transfer-pattern blocked**  
**no transfer-pattern blocked**

<b>Syntax Description</b>	This command has no arguments or keywords.
<b>Command Default</b>	Call transfers for a specific Cisco Unified SIP IP phone or a set of Cisco Unified SIP IP phone are allowed.
<b>Command Modes</b>	Voice register pool configuration (config-register-pool)  Voice register template configuration ((config-register-temp)

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	15.3(2)T	This command was introduced.

**Usage Guidelines**

When the **transfer-pattern blocked** command is configured for a specific phone, no call transfers are allowed from that phone over the trunk.

This feature forces unconditional blocking of all call transfers from a specific phone to any other non-local numbers (external calls from one trunk to another trunk). No call transfers from this specific phone are possible even when a transfer pattern matches the dialed digits for transfer.

**Examples**

The following example shows how to block all call transfers for voice register pool 5:

```
Router(config)# voice register pool 5
Router(config-register-pool)# transfer-pattern ?
    blocked  global transfer pattern not allowed
Router(config-register-pool)# transfer-pattern blocked
```

The following example shows how to block all call transfers for a set of Cisco Unified SIP IP phones defined by voice register template 9:

```
Router(config)# voice register template 9
Router(config-register-temp)# transfer-pattern ?
    blocked  global transfer pattern not allowed
Router(config-register-temp)# transfer-pattern blocked
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>voice register pool</b>	Enters voice register pool configuration mode and creates a pool configuration for a Cisco Unified SIP IP phone in Cisco Unified CME or for a set of Cisco Unified SIP IP phones in Cisco Unified SIP SRST.

Command	Description
<b>voice register template</b>	Enters voice register template configuration mode and defines a template of common parameters for Cisco Unified SIP IP phones.

## transfer-system (call-manager-fallback)

To specify the call-transfer method for all IP phones on a Cisco Unified Survivable Remote Site Telephony (SRST) router using the ITU-T H.450.2 standard, use the **transfer-system** command in call-manager-fallback configuration mode. To disable the call-transfer method, use the **no** form of this command.

**transfer-system** {**blind** | **full-blind** | **full-consult** | **local-consult**}  
**no transfer-system**

### Syntax Description

<b>blind</b>	Transfers calls without consultation using a single phone line and the Cisco proprietary method. The keyword <b>blind</b> is not recommended. Use either the <b>full-blind</b> or <b>full-consult</b> keyword instead.
<b>full-blind</b>	Transfers calls without consultation using H.450.2 standard methods.
<b>full-consult</b>	Transfers calls using H.450.2 with consultation using the second phone line if available, or the calls fall back to full-blind if the second line is unavailable.
<b>local-consult</b>	Transfers calls with local consultation using the second phone line if available, or the calls fall back to blind for nonlocal consultation or transfer target. This method is intended for use primarily in VoFR networks because the Cisco VoFR call-transfer protocol does not support an end-to-end transfer with consultation mechanism.

### Command Default

No default behavior or values.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SRST 3.0	This command was introduced.
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

### Usage Guidelines

Call transfers using the H.450.2 standard can be blind or consultative. A blind transfer is one in which the transferring phone connects the caller to a destination line before ringback begins. A consultative transfer is one in which the transferring party either connects the caller to a ringing phone (ringback heard) or speaks with the third party before connecting the caller to the third party. When H.450.2 call transfer is selected using the **full-blind** or **full-consult** keyword, the router must be configured with a Tool Command Language (Tcl) script that supports the H.450.3 protocol. The Tcl script is loaded on the Cisco Unified SRST router with the **call application voice** command.



**Note** Note: The keyword **blind** is not recommended. Use either the **full-blind** or **full-consult** keyword instead.

### Examples

The following example sets full consultation as the call-transfer method for this Cisco Unified SRST phone network:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# transfer-system full-consult
```

**Related Commands**

Command	Description
<b>call application voice</b>	Defines an application, indicates the location of the corresponding Tcl files that implement the application, and loads the selected Tcl script.
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

## translate (call-manager-fallback)

To apply a translation rule to modify the phone number dialed or received by any Cisco IP phone user during Cisco Unified Communications Manager fallback, use the **translate** command in call-manager-fallback configuration mode. To disable this feature, use the **no** form of this command.

**translate** {called | calling} *translation-rule-tag*  
**no translate** {called | calling} *translation-rule-tag*

### Syntax Description

<b>called</b>	Translation rule to apply to the number called by a Cisco IP phone.
<b>calling</b>	Translation rule to apply to the calling party number sent in the call setup message for calls originated from a Cisco IP phone.
<i>translation-rule-tag</i>	Tag number by which the rule set is referenced. This is an arbitrarily chosen number. The range is from 1 to 2147483647.

### Command Default

No default behavior or values.

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco SRST 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series and Cisco 3600 series multiservice routers, Cisco IAD2420 series IADs.
12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

### Usage Guidelines

The **translate** command allows you to apply a previously configured number-translation rule to modify the number dialed or received by a specific extension. Translation rules are a powerful general-purpose number-manipulation mechanism that performs operations such as automatically adding telephone area and prefix codes to dialed numbers.

### Examples

The following example applies translation rule 20 to the inbound called number:

```
Router(config)# translation-rule 20
Router(config-translate)# rule 0 1234 2345 abbreviated
Router(config-translate)# exit
```



```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# translate called 20
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) support and enters call-manager-fallback configuration mode.
<b>translation-profile</b> <b>(call-manager-fallback)</b>	Assigns a translation profile for incoming or outgoing call legs on a Cisco IP phone.
<b>translation-rule</b>	Creates a translation name and enters translation-rule configuration mode.

## translate-outgoing (voice register pool)

To allow an explicit setting of translation rules on the VoIP dial peer in order to modify a phone number dialed by any Cisco IP phone user, use the **translate-outgoing** command in voice register pool configuration mode. To disable translation rules, use the **no** form of this command.

**translate-outgoing** {called | calling} *rule-tag*  
**no translate-outgoing** {called | calling}

### Syntax Description

<b>called</b>	Called party requires translation.
<b>calling</b>	Calling party requires translation.
<i>rule-tag</i>	The rule-tag is an arbitrarily chosen number by which the rule set is referenced. The range is from 1 to 2147483.

### Command Default

None

### Command Modes

Voice register pool configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.

### Usage Guidelines

Translation rules are a powerful general-purpose number-manipulation mechanism that perform operations such as automatically adding telephone area and prefix codes to dialed numbers. The translation rules are applied to VoIP dial peers created by Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) or Cisco Unified Communications Manager Express (Cisco Unified CME).

During registration, a dial peer is created, and that dial peer includes a default translation rule. The **translate-outgoing** command allows you to change the translation rule, if desired. The **translate-outgoing** command allows you to select a preconfigured number translation rule to modify the number dialed by a specific extension.

Translation rules must be set by using the **translate-outgoing** command before the **alias** command is configured in Cisco Unified SIP SRST.

Configure the **id** (voice register pool) command before any other voice register pool commands, including the **translate-outgoing** command. The **id** command identifies a locally available individual SIP phone or set of SIP phones.

## Examples

### Cisco Unified CME

The following is partial sample output from the **show running-config** command showing that called-party 1 requires translation.

```
voice register pool 1
  id mac 0030.94C2.A22A
  preference 5
  cor incoming call91 1 91011
  translate-outgoing called 1
```

### Cisco Unified SIP SRST

The following is partial sample output from the **show running-config** command showing that called-party 1 requires translation.

```
voice register pool 1
  id mac 0030.94C2.A22A
  preference 5
  cor incoming call91 1 91011
  translate-outgoing called 1
  proxy 10.2.161.187 preference 1 monitor probe icmp-ping
  alias 1 94... to 91011 preference 8
  voice-class codec 1
```

## Related Commands

Command	Description
<b>alias (voice register pool)</b>	Allows Cisco SIP IP phones to handle inbound PSTN calls to telephone numbers that are unavailable when the main proxy is not available.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>translate-outgoing (dial-peer)</b>	Applies a translation rule to manipulate dialed digits on an outbound POTS or VoIP call leg.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

# translation-profile (call-manager-fallback)

To assign a translation profile for incoming or outgoing call legs on a Cisco IP phone, use the **translation-profile** command in call-manager-fallback configuration mode. To delete the translation profile from the voice port, use the **no** form of this command.

**translation-profile** {incoming | outgoing} *name*  
**no translation-profile** {incoming | outgoing} *name*

## Syntax Description

<b>incoming</b>	Specifies that this translation profile handles incoming calls.
<b>outgoing</b>	Specifies that this translation profile handles outgoing calls.
<i>name</i>	Name of the translation profile.

## Command Default

No default behavior or values.

## Command Modes

Call-manager-fallback configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.3(11)T	Cisco SRST 3.2	This command was introduced.

## Usage Guidelines

Cisco Unified Survivable Remote Site Telephony (SRST) 3.2 and later versions support translation profiles. Translation profiles allow you to group translation rules together and to associate translation rules with the following:

- Called numbers
- Calling numbers
- Redirected called numbers

Use the **translation-profile** command to assign a global predefined translation profile to an incoming or outgoing call leg. For example, a company number can be assigned to overwrite an individual caller's phone number. That is, the **translation-profile** command modifies the phone number dialed or received by a Cisco IP phone user while in Communications Manager fallback mode.

Cisco IP phones support one incoming and one outgoing translation profile when in SRST mode.

## Examples

The following example shows a configuration in which a translation profile called name1 is created with two voice translation rules. Rule1 consists of associated calling numbers, and rule2 consists of redirected called numbers. The Cisco IP phones in SRST mode are configured with name1.

```
voice translation-profile name1
 translation calling rule1
 translation called-direct rule2
call-manager-fallback
 translation-profile incoming name1
```

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco SRST support and enters call-manager-fallback configuration mode.
<b>show voice translation-profile</b>	Displays the configuration of a translation profile.
<b>translate (call-manager- fallback)</b>	Applies a translation rule to modify the phone number dialed or received by any Cisco IP phone user during Communications Manager fallback.
<b>translation-rule</b>	Creates a translation name and enters translation-rule configuration mode to apply rules to the translation name.
<b>voice translation-profile</b>	Defines a translation profile for voice calls.

## translation-profile (voice register)

To apply a translation profile to incoming or outgoing call legs on a SIP phone in a Cisco Unified SRST system, use the **translation-profile** command in voice register dn or voice register pool configuration mode. To remove the translation profile, use the **no** form of this command.

**translation-profile** {incoming | outgoing} *name*  
**no translation-profile** {incoming | outgoing}

### Syntax Description

<b>incoming</b>	Specifies that this translation profile handles incoming calls.
<b>outgoing</b>	Specifies that this translation profile handles outgoing calls.
<i>name</i>	Name of the translation profile.

### Command Default

Translation profile is not assigned to call legs on the phone.

### Command Modes

Voice register dn configuration (config-register-dn)  
 Voice register pool configuration (config-register-pool)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(22)YB	Cisco Unified SIP SRST 7.1	This command was introduced.
12.4(24)T	Cisco Unified SIP SRST 7.1	This command was integrated into Cisco IOS Release 12.4(24)T.
Cisco IOS XE Dublin 17.10.1a	Unified SRST 14.3	Introduced support for YANG models.

### Usage Guidelines

This command assigns a predefined translation profile to incoming or outgoing call legs to and from the Cisco Unified SRST router. Use this command to apply the translation profile to a specific directory number or to all directory numbers on a SIP phone. The translation profile that you assign is created by using the **voice translation-profile** command.

### Examples

The following example assigns the translation profile named “profile1” to handle translation of outgoing calls from SIP phone 21:

```
Router(config)# voice register pool 21
Router(config-register-pool)# translation-profile outgoing profile1
```

The following example assigns the translation profile named “profile2” to handle translation of incoming calls to extension 1200:

```
Router(config)# voice register dn 12
Router(config-register-pool)# number 1200
Router(config-register-pool)# translation-profile incoming profile2
```

**Related Commands**

Command	Description
<b>show voice translation-profile</b>	Displays the configuration of a translation profile.
<b>translate</b> (translation profiles)	Assigns a translation rule to a translation profile.
<b>voice translation-profile</b>	Defines a translation profile for voice calls.

## transport-tcp-tls (call-manager-fallback)

To configure a specific TLS version for Unified Secure SCCP SRST, use the **transport-tcp-tls** command in call-manager-fallback mode. To enable the default command configuration, use the **no** form of this command.

### Syntax Description

*v1.0* Enables TLS Version 1.0.

*v1.1* Enables TLS Version 1.1.

*v1.2* Enables TLS Version 1.2.

### Command Default

In the default form, all the TLS versions **except TLS 1.0** are supported for this CLI command.

### Command Modes

call-manager-fallback Configuration (config-cm-fallback)

### Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Fuji 16.9.1	Unified SRST 12.3	This command was introduced.
Cisco IOS XE Cupertino 17.8.1a	Unified SRST 14.2	This command is enhanced to limit TLS1.2 to using SHA2 ciphers only.

### Usage Guidelines

Use this command to define the version of transport layer security for the Secure SCCP Unified SRST. From Unified SRST 12.3 and later releases, TLS versions 1.1 and 1.2 are supported for Analogue Voice Gateways on Unified SRST. SCCP phones only support TLS version 1.0.

When **transport-tcp-tls** is configured without specifying a version, the default behavior of the CLI command is enabled. In the default form, all the TLS versions (except TLS 1.0) are supported for this CLI command.

For Secure SIP and Secure SCCP endpoints that do not support TLS version 1.2, you need to configure TLS 1.0 for the endpoints to register to Unified Secure SRST 12.3 (Cisco IOS XE Fuji Release 16.9.1). This also means that endpoints which support 1.2 will also use the 1.0 suites.

For TLS 1.0 support on Cisco IOS XE Fuji Release 16.9.1 for SCCP endpoints, you need to specifically configure:

- transport-tcp-tls v1.0 under call-manager-fallback configuration mode

For TLS 1.0 support on Cisco IOS XE Fuji Release 16.9.1 for pure SIP and mixed deployment scenarios, you need to specifically configure:

- transport-tcp-tls v1.0 under sip-ua configuration mode

From Cisco IOS XE Cupertino 17.8.1a onwards, the **transport-tcp-tls v1.2** command is enhanced to allow only SHA2 ciphers by using the additional "sha2" keyword.

### Example

The following example shows how to specify a TLS version for a secure SCCP phone using the transport-tcp-tls CLI command:



```
Router(config)# call-manager-fallback
Router(config-cm-fallback)#transport-tcp-tls ?
  v1.0  Enable TLS Version 1.0
  v1.1  Enable TLS Version 1.1
  v1.2  Enable TLS Version 1.2

Router(config-cm-fallback)#transport-tcp-tls v1.2 ?
  sha2 Allow SHA2 ciphers only
Router(config-cm-fallback)#transport-tcp-tls v1.2 sha2
<cr> <cr>
```

**Related Commands**

Command	Description
<b>transport (voice-register-pool)</b>	Defines the default transport type supported by a new phone.

## trustpoint (credentials)

To specify the name of the trustpoint to be associated with a Cisco Unified Communications Manager Express (Cisco Unified CME) CTL provider certificate or with the Cisco Unified Survivable Remote Site Telephony (SRST) router certificate, use the **trustpoint** command in credentials configuration mode. To change the specified trustpoint, use the **no** form of this command.

**trustpoint** *trustpoint-name*  
**no** **trustpoint**

Syntax Description	<table border="1"> <tr> <th><i>trustpoint-name</i></th><td>Name of the trustpoint to be associated with the Cisco Unified CME CTL provider certificate or the Cisco Unified SRST device certificate.</td></tr> </table>	<i>trustpoint-name</i>	Name of the trustpoint to be associated with the Cisco Unified CME CTL provider certificate or the Cisco Unified SRST device certificate.
<i>trustpoint-name</i>	Name of the trustpoint to be associated with the Cisco Unified CME CTL provider certificate or the Cisco Unified SRST device certificate.		

**Command Default** No default behavior or values.

**Command Modes** Credentials configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.3(14)T	Cisco SRST 3.3	This command was introduced for Cisco Unified SRST.
	12.3(14)T	Cisco Unified CME 4.0	This command was introduced for Cisco Unified CME.

### Usage Guidelines

#### Cisco Unified CME

This command is used with Cisco Unified CME phone authentication to define the trustpoint for the CTL provider. This trustpoint will be used for TLS sessions with the CTL client.

#### Cisco Unified SRST

The name of the trustpoint must be consistent with the trustpoint name of the Cisco Unified SRST router.

### Examples

#### Cisco Unified CME

The following example sets up a CTL provider on the Cisco Unified CME router with the IP address 172.19.245.1.

```
Router(config)# credentials
Router(config-credentials)# ip source-address 172.19.245.1 port 2444
Router(config-credentials)# trustpoint ctlpv
Router(config-credentials)# ctl-service admin user4 secret 0 c89L8o
```

#### Cisco Unified SRST

The following example enters credentials configuration mode, sets the IP source address and port, and specifies the trustpoint:

```
Router(config)# credentials
Router(config-credentials)# ip source-address 10.6.21.4 port 2445
Router(config-credentials)#
trustpoint srstca
```

**Related Commands**

Command	Description
<b>credentials</b>	Provides the Cisco Unified CME CTL provider certificate or the Cisco Unified SRST router certificate and enters credentials configuration mode.
<b>ctl-service admin</b>	Specifies a user name and password to authenticate the CTL client during the CTL protocol.
<b>debug credentials</b>	Sets debugging on the credentials service.
<b>ip source-address (credentials)</b>	Enables the router to receive messages through the specified IP address and port.
<b>show credentials</b>	Displays the credentials settings.

## user-locale (call-manager-fallback)

To set the language by country for displays on the Cisco Unified IP Phone 7905G, Cisco Unified IP Phone 7912G, Cisco UnifiedIP Phone 7940G and Cisco UnifiedIP Phone 7960G, use the **user-locale** command in call-manager-fallback configuration mode. To disable the country selection and use the default country (United States), use the **no** form of this command.

**user-locale** *country-code*

**no user-locale** *country-code*

### Syntax Description

<i>country-code</i>	<p>The following ISO-3166 codes are available to Cisco Unified Survivable Remote Site Telephony (SRST) systems running under Cisco Unified Communications Manager V3.2 or later:</p> <ul style="list-style-type: none"> <li>• <b>DE</b>—German.</li> <li>• <b>DK</b>—Danish.</li> <li>• <b>ES</b>—Spanish.</li> <li>• <b>FR</b>—French.</li> <li>• <b>IT</b>—Italian.</li> <li>• <b>JP</b>—Japanese Katakana (available under Cisco Unified Communications Manager V4.0 or later).</li> <li>• <b>NL</b>—Dutch.</li> <li>• <b>NO</b>—Norwegian.</li> <li>• <b>PT</b>—Portuguese.</li> <li>• <b>RU</b>—Russian.</li> <li>• <b>SE</b>—Swedish.</li> <li>• <b>US</b>—United States English (default).</li> </ul>
---------------------	--

### Command Default

The default country code is **US** (United States).

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.2(11)YT	Cisco SRST 2.1	This command was introduced for use on the Cisco IP Phone 7940 and Cisco IP Phone 7960 for Cisco SRST systems running Cisco Communications Manager V3.2. Support includes country codes for France, Germany, Italy, Portugal, Spain, and the United States (default).
12.3(4)T	Cisco SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.3(7)XL	Cisco SRST 3.1.1	The <b>JP</b> keyword was added, providing support for Japanese Katakana.
12.3(11)T	Cisco SRST 3.2	This command was integrated into Cisco IOS Release 12.3(11)T and support was increased to include the Cisco Unified IP Phone 7905G and Cisco Unified IP Phone 7912G.

---

**Usage Guidelines**

Japanese Katakana is now supported with the **JP** keyword and is available to Cisco Unified SRST systems running under Cisco Unified Communications Manager V4.0. All other *country-code* options are available to Cisco Unified SRST systems running under Cisco Unified Communications Manager V3.2. Systems running Cisco Unified Communications Manager prior to V3.2 can use only the default country, United States (**US**).

---

**Examples**

The following example shows how to set the user locale to the ISO-3166 code for Spain:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# user-locale ES
```

---

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified SRST support and enters call-manager-fallback configuration mode.

# url-button

To configure service url feature button on a line key, use the url-button command in ephone-template mode. To disable the service url feature button configuration on a line key, use the **no** form of this command.

```
{url-button index type | url [name]}
{no url-button index type | url [name]}
```

## Syntax Description

index	Unique index number. Range: 1 to 8.
type	Type of service url button. Following types of url service buttons are available: <ul style="list-style-type: none"> <li>• myphoneapp: My phone application configured under phone user interface.</li> <li>• em: Extension Mobility</li> <li>• snr: Single Number Reach</li> <li>• voicehuntgroups: Voice Hunt Groups</li> <li>• park-list: Displays list of parked calls</li> </ul>
url name	Service url with maximum length of 31 characters.

## Command Default

By default, URL-button configuration on a line key is disabled.

## Command Modes

Ephone template configuration (config-ephone-template)

## Command History

Cisco IOS Release	Cisco Product	Modification
15.1(3)T	Cisco Unified Enhanced SRST 8.5	This command was introduced.
15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was modified.

## Usage Guidelines

Use this command to configure a url-button on a phone's line key. You can configure a line key to function as one of the following url-button types: extension mobility (EM), My Phone Apps, or single number reach (SNR). You can also configure a line button to function as a service url by configuring a url name of a maximum length of 31 characters.

## Examples

The following examples shows three url buttons configured as line keys:

```
!
telephony-service
 max-ephones 25
 max-conferences 12 gain -6
 transfer-system full-consult
!
!
ephone-template 5
 url-button 1 em
 url-button 2 myphoneapp
 url-button 3 snr
!
ephone-template 6
 conference drop-mode never
```

```
conference add-mode all
conference admin: No
max-calls-per-button 8
busy-trigger-per-button 0
privacy default
url-button 1 em
url-button 2 www.cisco.com www.cisco.com
url-button 3 snr
url-button 4 help help
url-button 7 myphoneapp
!
!
```

**Related Commands**

Command	Description
<b>show telephony-service ephone-template</b>	Displays the contents of all the ephone-templates defined.

# utf8

To define Unicode UTF-8 support for a phone type, use the **utf8** command in ephone-type configuration mode. To reset to the default value, use the **no** form of this command.

**utf8**  
**no utf8**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Phone type supports Unicode UTF-8.

**Command Modes**  
Ephone-type configuration (config-ephone-type)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XZ	Cisco Unified CME 4.3 Cisco Unified SRST 4.3	This command was introduced.

**Usage Guidelines** This command specifies whether Unicode UTF-8 is supported by the type of phone that is being added with the phone-type template.

**Examples** The following example shows that UTF-8 support is set to disabled for the Nokia E61 when creating the ephone-type template:

```
Router(config)# ephone-type E61
Router(config-ephone-type)# no utf8
```

Related Commands	Command	Description
	<b>device-id</b>	Specifies the device ID for a phone type.
	<b>type</b>	Assigns the phone type to an SCCP phone.



# vad (voice register pool)

To enable voice activity detection (VAD) on a VoIP dial peer, use the **vad** command in voice register pool configuration mode. To disable VAD, use the **no** form of this command.

**vad**  
**no vad**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Enabled

**Command Modes** Voice register pool configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.

**Usage Guidelines** VAD detects periods of silence in the voice signal and temporarily discontinues transmission of the signal during these periods to save bandwidth. Because VAD is enabled by default, there is no comfort noise during periods of silence. As a result, the call may seem to be disconnected and you may prefer to set **no vad** on the SIP phone pool.

**Examples** The following example shows how to disable VAD for pool 1:

```
Router(config)# voice register pool 1
Router(config-register-pool)# no vad
```

Related Commands	Command	Description
	<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.

## video (call-manager-fallback)

To enter video configuration mode for a Cisco Unified SRST router, use the **video** command in call-manager-fallback configuration mode. To reset global video parameters, use the **no** form of this command.

**video**  
**no video**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Global video parameters are configured.

**Command Modes** Call-manager-fallback configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(4)XC	Cisco Unified SRST 4.0	This command was introduced.

**Usage Guidelines** Use the **video** command to enter video configuration mode and set video parameters for all applicable Cisco IP phones in a Cisco Unified SRST system.

**Examples** The following example shows how to enter video configuration mode for a Cisco Unified SRST system. You must enter video configuration mode to set video parameters, such as maximum bit rate.

```
Router(config)#
call-manager-fallback
Router(config-call-manager-fallback)# video
Router(conf-cm-fallback-video)# maximum bit-rate 256
```

Related Commands	Command	Description
	<b>show call active video</b>	Displays call information for SCCP video calls in progress.
	<b>show call history video</b>	Displays call history information for SCCP video calls.
	<b>video (telephony-service)</b>	Enters video configuration mode to set video parameters for all applicable Cisco IP phones associated with a Cisco Unified CME router.

# vm-integration

To enter voice-mail integration configuration mode and enable voice-mail integration with dual tone multifrequency (DTMF) and analog voice-mail systems, use the **vm-integration** command in global configuration mode. To disable voice-mail integration, use the **no** form of this command.

**vm-integration**  
**no vm-integration**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No voice-mail integration is defined.

**Command Modes** Global configuration

Command History	Cisco IOS Release	Cisco Product	Modification
	12.2(11)YT	Cisco SRST 2.1	This command was introduced for Cisco Survivable Remote Site Telephony (SRST).
	12.2(2)XT	Cisco CME 2.0	This command was introduced on the following platforms: Cisco 1750, Cisco 1751, Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
	12.2(8)T	Cisco CME 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
	12.2(8)T1	Cisco CME 2.0	This command was implemented on the Cisco 2600XM and Cisco 2691.
	12.2(11)T	Cisco CME 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760.

**Usage Guidelines** The **vm-integration** command is used to enter voice-mail integration configuration mode. Use voice-mail integration configuration mode to integrate a Cisco Unified Communications Manager Express (Cisco Unified CME) system with an analog voice-mail system.

**Examples** The following example shows how to enter the voice-mail integration configuration mode:

```
Router(config) vm-integration
Router(config-vm-integration) pattern direct 2 CGN *
```

Related Commands	Command	Description
	<b>pattern direct (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when a user presses the Messages button on a phone.

Command	Description
<b>pattern ext-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension reaches a busy extension and the call is forwarded to voice mail.
<b>pattern ext-to-ext no-answer (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an internal extension fails to connect to an extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext busy (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system once an external trunk call reaches a busy extension and the call is forwarded to voice mail.
<b>pattern trunk-to-ext no-answer (vm-integration)</b>	Configures the DTMF digit pattern forwarding necessary to activate the voice-mail system when an external trunk call reaches an unanswered extension and the call is forwarded to voice mail.

# voice class tls-cipher

To configure an ordered set of TLS cipher suites, use the **voice class tls-cipher** command. To disable this command or revert to default, use the **no** form of this command.

**voice class tls-cipher** *tag*  
**no voice class tls-cipher** *tag*

<i>tag</i>	Voice class tls-cipher tag.
------------	-----------------------------

**Command Default** No default behavior or values

**Command Modes** Global configuration (config).

Release	Modification
Cisco IOS XE Cupertino 17.8.1a	Introduced <b>voice class tls-cipher</b> command.
Cisco IOS XE Dublin 17.10.1a	Introduced support for YANG models.

**Usage Guidelines** The **voice class tls-cipher** command enables voice class configuration mode on the router, allowing you to configure an ordered list of TLS cipher suites.

```
Router(config)#voice class tls-cipher 123
Router(config-class)# cipher ?
    <1-10>  Set the preference order for the cipher-suite (1 = Highest)

Router(config-class)#cipher 1 ?
DHE_RSA_AES128_GCM_SHA256      supported in TLS 1.2 & above
DHE_RSA_AES256_GCM_SHA384      supported in TLS 1.2 & above
DHE_RSA_WITH_AES_128_CBC_SHA    supported in TLS 1.0 & above
DHE_RSA_WITH_AES_256_CBC_SHA    supported in TLS 1.0 & above
ECDHE_ECDSA_AES128_GCM_SHA256  supported in TLS 1.2 & above
ECDHE_ECDSA_AES256_GCM_SHA384  supported in TLS 1.2 & above
ECDHE_RSA_AES128_GCM_SHA256    supported in TLS 1.2 & above
ECDHE_RSA_AES256_GCM_SHA384    supported in TLS 1.2 & above
RSA_WITH_AES_128_CBC_SHA        supported in TLS 1.0 & above
RSA_WITH_AES_256_CBC_SHA        supported in TLS 1.0 & above

Router(config-class)# cipher 1 CIPHER_SUITE_ECDHE_RSA_AES256_GCM_SHA384 ?
<cr>      <cr>
Router(config-class)#
```

# voice class tls-profile

To enable voice class configuration mode, and assign an identification tag for a TLS profile, use the command **voice class tls-profile** in global configuration mode. To remove a tls-profile, use the **no** form of this command.

**voice class tls-profile** *tag*

**no voice class tls-profile** *tag*

## Syntax Description

<i>tag</i>	A number used to identify voice class tls profile. The range is 1-10000. There is no default value.
------------	---

## Command Default

No default behavior or values

## Command Modes

Global configuration (config)

## Command History

Release	Modification
Cisco IOS XE Cupertino 17.8.1a	<b>tls-profile</b> command is enhanced to include <tag>.
Cisco IOS XE Amsterdam 17.3.1a	This command was introduced.
Cisco IOS XE Dublin 17.10.1a	Introduced support for YANG models.

## Usage Guidelines

The command **voice class tls-profile** enables voice class configuration mode on the router and provides you sub-options to configure commands required for a TLS session. This command allows you to configure under voice class, the options that can be configured at the global level via sip-ua.

The *tag* associates all the voice class configurations that are made through the command **voice class tls-profile tag** to the command **crypto signaling**. Following is the **crypto signaling** command with **tls-profile tag**:

**crypto signaling** {**remote-addr** *ip address subnet mask* | **default**} **tls-profile tag**

For more information on the updates to the command **crypto signaling**, see [crypto signaling](#).

## Examples

The following example configures the **voice class tls-profile** with *tag* '2' and enables voice class configuration mode:

```
Router(config)#voice class tls-profile 2
Router(config-class)#
```

The following section provides details of the sub-commands that can be configured under the command **voice class tls-profile tag**.

The following example configures CUBE to use the **trustpoint** *trustpoint-name* keyword and argument when it establishes or accepts the TLS connection with a remote device:

```
Router(config-class)#trustpoint CUBETP
```

The following example configures client verification trustpoint:

```
Router(config-class)#client-vtp TPname
```

The following example indicates the description for the TLS profile group:

```
Router(config-class)#description tlsgroupname
```

The following example configures the specific size of elliptic curves to be used for a TLS session:

```
Router(config-class)#cipher ecdsa-cipher curve-size 384
```

The following example configures CUBE to perform server identity validation through Common Name (CN) and Subject Alternate Name (SAN) fields in the server certificate:

```
Router(config-class)#cn-san-validate server
```

The following example enables Server Name Indication (SNI) required during the initial TLS handshake process:

```
Router(config-class)#sni send
```

The following example shows **cipher** command. The command associates a TLS cipher list with this profile.




---

**Note** **tls-cipher** should be created before adding to **tls-profile**.

---

To configure **tls-cipher**:

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#voice class tls-cipher 1122
Router(config-class)#?
VOICECLASS configuration commands:
  cipher  Configure a TLS cipher-suite
  exit    Exit from voice class configuration mode
  help    Description of the interactive help system
  no      Negate a command or set its defaults

Router(config-class)#cipher ?
<1-10> Set the preference order for the TLS cipher-suite (1 = Highest)

Router(config-class)#cipher 1 ?
DHE_RSA_AES128_GCM_SHA256      supported in TLS 1.2 & above
DHE_RSA_AES256_GCM_SHA384      supported in TLS 1.2 & above
DHE_RSA_WITH_AES_128_CBC_SHA    supported in TLS 1.0 & above
DHE_RSA_WITH_AES_256_CBC_SHA    supported in TLS 1.0 & above
ECDHE_ECDSA_AES128_GCM_SHA256  supported in TLS 1.2 & above
ECDHE_ECDSA_AES256_GCM_SHA384  supported in TLS 1.2 & above
ECDHE_RSA_AES128_GCM_SHA256    supported in TLS 1.2 & above
ECDHE_RSA_AES256_GCM_SHA384    supported in TLS 1.2 & above
RSA_WITH_AES_128_CBC_SHA        supported in TLS 1.0 & above
RSA_WITH_AES_256_CBC_SHA        supported in TLS 1.0 & above

Router(config-class)#cipher 1 ECDHE_RSA_AES256_GCM_SHA384 ?
<cr> <cr>

GW1-2A(config-class)#cipher 1 ECDHE_RSA_AES256_GCM_SHA384
GW1-2A(config-class)#
```

To configure **tls-profile**:

```
Router(config-class)#
Router(config-class)#voice class tls-profile 3344
Router(config-class)#?
VOICECLASS configuration commands:
  cipher  Configure a cipher-suite
```

```

client-vtp    Assign a client verification trustpoint
cn-san        Configure CN/SAN certificate options
description   Description of the tls-profile group
exit          Exit from voice class configuration mode
help          Description of the interactive help system
no            Negate a command or set its defaults
sni           Enable TLS SNI (Server Name Indication) Extension
trustpoint    Associate a trustpoint
Router(config-class)#ciph
Router(config-class)#cipher ?
  <1-10000>    Specify tls-cipher list tag
  ecdsa-cipher Configure ECDSA ciphers
  strict-cipher Configure ciphers mandated by SIP standards

```

```

Router(config-class)#cipher 1122 ?
  <cr>  <cr>

```

```
Router(config-class)#cipher 1122
```

#### To show **tls-profile**:

```

Router#show run | sec voice class tls-profile 3344
voice class tls-profile 3344
  cipher 1122

```

#### To show **tls-cipher**:

```

Router#show run | sec voice class tls-cipher 1122
voice class tls-cipher 1122
  cipher 1 ECDHE_RSA_AES256_GCM_SHA384

```

#### To show **tls-profile** under **sip-ua**:

```

Router# configure terminal
Router(config)# sip-ua
Router (config-sip-ua)#
  crypto signaling default tls-profile 3344

```

## Related Commands

Command	Description
<b>trustpoint</b>	Creates a trustpoint to store the devices certificate that is generated as part of the enrollment process using Cisco IOS public-key infrastructure (PKI) commands.
<b>description</b>	Provides a description for the TLS profile group.
<b>client-vtp</b>	Assigns a client verification trustpoint.
<b>cipher</b>	Configures cipher setting.
<b>cn-san</b>	Enables server identity validation through Common Name (CN) and Subject Alternate Name (SAN) fields in the server certificate during client-side SIP /TLS connections
<b>sni send</b>	Enables TLS Server Name Indication (SNI) during the initial TLS handshake process.
<b>crypto signaling</b>	Identifies the trustpoint or the <b>tls-profile</b> tag that is used during the TLS handshake process.



# voice emergency response location

To create a tag for identifying an emergency response location (ERL) for E911 services, use the **voice emergency response location** command in global configuration mode. To remove the ERL tag, use the **no** form of this command.

**voice emergency response location** *tag*  
**no voice emergency response location** *tag*

## Syntax Description

<i>tag</i>	Unique number that identifies this ERL tag.
------------	---

## Command Default

No ERL tag is created.

## Command Modes

Global configuration (config)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)T	Cisco Unified CME 4.1 Cisco Unified SRST 4.1 Cisco Unified SIP SRST 4.1	This command was introduced. For Cisco Unified CME, this command is supported in SRST fallback mode only.
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	<b>Address</b> and <b>name</b> commands introduced under <b>voice emergency response location</b> command. This command was added for Cisco Unified CME.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command creates an ERL that identifies an area where emergency teams can quickly locate a 911 caller. The ERL definition optionally includes which ELINs are associated with the ERL and which IP phones are located in the ERL. You can define two or fewer unique IP subnets and two or fewer ELINs. If you define one ELIN, this ELIN is always used for phones calling from this ERL. If you define two ELINs, the system alternates between using each ELIN. If you define zero ELINs and phones use this ERL, the outbound calls do not have their calling numbers translated. The PSAP sees the original calling numbers for these 911 calls. You can optionally add the civic address using the **address** command and an address description using the **name** command.

## Examples

In the following example, all IP phones with the IP address of 10.X.X.X or 192.168.X.X are automatically associated with this ERL. If one of the phones dials 911, its extension is replaced with 408 555-0100 before it goes to the PSAP. The PSAP will see that the caller's number is 408 555-0100. The civic address, 410 Main St, Tooly, CA, and a descriptive identifier, Bldg 3 are included.

```
voice emergency response location 1
  elin 1 4085550100
  subnet 1 10.0.0.0 255.0.0.0
  subnet 2 192.168.0.0 255.255.0.0
```

## voice emergency response location

```
address 1,408,5550100,410,Main St.,Tooly,CA  
name Bldg 3
```

## Related Commands

Command	Description
<b>address</b>	Specifies a comma separated text entry (up to 250 characters) of an ERL's civic address.
<b>elin</b>	Specifies a PSTN number that will replace the caller's extension.
<b>name</b>	Specifies a string (up to 32-characters) used internally to identify or describe the emergency response location.
<b>subnet</b>	Defines which IP phones are part of this ERL.

# voice emergency response settings

To define 911 call behavior settings, use the **voice emergency response settings** command in global configuration mode. To remove the settings, use the **no** form of this command.

**voice emergency response settings**  
**no voice emergency response settings**

**Syntax Description** This command has no arguments or keywords.

**Command Default** No default behavior or values

**Command Modes** Global configuration (config)

Command History	Cisco IOS Release	Cisco Product	Modification
	12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
	12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

**Usage Guidelines** This command enables definition of several 911 of the following call behavior settings:

- **elin**: Default ELIN to use if a 911 caller's IP phone's address does not match the subnet of any location in any zone.
- **expiry**: Number of minutes a 911 call is associated to an ELIN in case of a call back from the 911 operator.
- **callback**: Default number to contact if a 911 call back cannot find the last 911 caller.
- **logging**: Syslog informational message that is printed to the console each time an emergency call is made. This feature is enabled by default, however you can disable this feature by entering the **no** form of this command.

## Examples

In the following example, if the 911 caller's IP phone address does not match any of the voice emergency response locations, the ELIN defined in the **voice emergency response settings** configuration (4085550101) is used. After the 911 call is placed to the PSAP, the PSAP has 120 minutes (2 hours) to call back 408 555-0101 to reach the 911 caller. If during a call back, the last caller's extension number cannot be found, the call is routed to extension 7500. The outbound 911 calls do not cause a syslog message to the logging facility (for example, to the local buffer, console, or remote host).

```
voice emergency response settings
callback 7500
elin 4085550101
expiry 120
no logging
```

**Related Commands**

Command	Description
<b>callback</b>	Default phone number to contact if a 911 callback cannot find the last 911 caller from the ERL.
<b>elin</b>	E.164 number used as the default ELIN if no matching ERL to the 911 caller's IP phone address is found.
<b>expiry</b>	Number of minutes a 911 call is associated to an ELIN in case of a callback from the 911 operator.
<b>logging</b>	Syslog informational message printed to the console every time an emergency call is made.

# voice emergency response zone

To create an emergency response zone, use the **voice emergency response zone** command in global configuration mode. To remove the defined voice emergency response zone, use the **no** form of this command.

**voice emergency response zone** *tag*  
**no voice emergency response zone** *tag*

## Syntax Description

<i>tag</i>	Identifier (1-100) for the voice emergency response zone.
------------	---

## Command Default

No default behavior or values

## Command Modes

Global configuration (config)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(15)XY	Cisco Unified CME 4.2(1) Cisco Unified SRST 4.2(1) Cisco Unified SIP SRST 4.2(1)	This command was introduced.
12.4(20)T	Cisco Unified CME 7.0 Cisco Unified SRST 7.0 Cisco Unified SIP SRST 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

## Usage Guidelines

This command creates voice emergency response zones that allow routing of 911 calls to different PSAPs.

## Examples

The following example shows an assignment of ERLs to a voice emergency response zone. The calls have an ELIN from ERLs 8, 9, and 10. The locations for ERLs in zone 10 are searched in the order each CLI was entered for a phone address match because no priority order is assigned.

```
voice emergency response zone 10
location 8
location 9
location 10
```

## Related Commands

Command	Description
<b>location</b>	Identifies locations within an emergency response zone and optionally assigns a priority order to the location.

## voice hunt-group

To create a hunt group for phones in a Cisco Unified Communications Manager Express (Cisco Unified CME) or Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) system, use the **voice hunt-group** command in global configuration mode. To delete a hunt group, use the **no** form of this command.

**voice hunt-group** *hunt-tag* {**longest-idle** | **parallel** | **peer** | **sequential**}  
**no voice hunt-group** *hunt-tag*

### Syntax Description

<i>hunt-tag</i>	Unique sequence number that identifies the hunt group. Range is 1 to 100.
<b>longest-idle</b>	Allows an incoming call to go first to the number that has been idle the longest for the number of hops specified when the hunt group was defined. The longest-idle time is determined from the last time that a phone registered, reregistered, or went on-hook.
<b>parallel</b>	Allows an incoming call to simultaneously ring all the numbers in the hunt group member list.
<b>peer</b>	Allows a round-robin selection of the first extension to ring. Ringing proceeds in a circular manner from left to right. The round-robin selection starts with the number left of the number that answered when the hunt-group was last called.
<b>sequential</b>	Allows an incoming call to ring all the numbers in the left-to-right order in which they were listed when the hunt group was defined.

### Command Default

No voice hunt group is created.

### Command Modes

Global configuration (config)

### Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4	This command was introduced.
12.4(15)XZ	Cisco Unified CME 4.3	This command was modified to add support for Cisco Unified SCCP IP phones.
12.4(20)T	Cisco Unified CME 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.
15.2(4)M	Cisco Unified SIP SRST 9.1	This command was introduced in Cisco Unified SIP SRST 9.1.

### Usage Guidelines

The **voice hunt-group** command enters voice hunt-group configuration mode to define a hunt group. A hunt group is a list of phone numbers that take turns receiving incoming calls to a specific number (pilot number), which is defined with the **pilot** command. The specific extensions included in the hunt group and the order and maximum number of extensions allowed in the list are defined with the **list** command.

If a number in the list is busy or does not answer, the call is redirected to the next number in the list. The last number tried is the final number, which is defined with the **final** command. If the number of times that a call

is redirected to a new number exceeds 5, you must use the **max-redirect** command to increase the allowable number of redirects in the Cisco Unified CME or Cisco Unified SIP SRST system.

To configure a new hunt group, you must specify the **longest-idle**, **parallel**, **peer**, or **sequential** keyword. To change an existing hunt group configuration, the keyword is not required. To change the type of hunt group, for instance from peer to sequential or sequential to peer, you must remove the existing hunt group first by using the **no** form of this command and then re-create it.

The **parallel** keyword creates a dial peer to allow an incoming call to ring multiple phones simultaneously. The use of parallel hunt groups is also referred to as application-level forking because it enables the forking of a call to multiple destinations. A pilot dial peer cannot be used as a voice hunt group and a hunt group at the same time.

While ephone hunt groups only support Cisco Unified SCCP IP phones, a voice hunt group supports either a Cisco Unified SCCP IP phone or a Cisco Unified SIP IP phone.

With the voice hunt group feature preconfigured in the Cisco Unified SIP SRST router, voice hunt groups continue to be supported after phones fallback from a Cisco Unified Communications Manager (Cisco Unified CM) to a Cisco Unified SIP SRST router.

## Examples

The following example shows how to define longest-idle hunt group 1 with pilot number 7501, final number 8000, and nine numbers in the list. After a call is redirected six times (makes 6 hops), it is redirected to the final number 8000.

```
Router(config)# voice hunt-group 1 longest-idle
Router(config-voice-hunt-group)# pilot 7501
Router(config-voice-hunt-group)# list 7001, 7002, 7023, 7028, 7045, 7062, 7067, 7072, 7079
Router(config-voice-hunt-group)# final 8000

Router(config-voice-hunt-group)# hops 6
Router(config-voice-hunt-group)# timeout 20

Router(config-voice-hunt-group)# exit
```

The following example shows how to define peer hunt group number 2. Callers dial the pilot number 5610 to reach the hunt group. The first extension to ring the first time that this hunt group is called is 5601. If 5601 does not answer, the hunt proceeds from left to right, beginning with the extension directly to the right. If none of those extensions answer, the call is forwarded to extension 6000, which is the number for the voice-mail service.

The second time someone calls the hunt group, the first extension to ring is 5602 if 5601 was answered during the previous call.

```
Router(config)# voice hunt-group 2 peer
Router(config-voice-hunt-group)# pilot 5610
Router(config-voice-hunt-group)# list 5601, 5602, 5617, 5633

Router(config-voice-hunt-group)# final 6000
Router(config-voice-hunt-group)# timeout 30

Router(config-voice-hunt-group)# exit
```

The following example shows how to define sequential hunt group number 3. When callers dial extension 5601, the first phone to ring is 5001, then 5002, 5017, and 5028. If none of those extensions answer, the call is forwarded to extension 6000, which is the number for the voice-mail service.

```

Router(config)# voice hunt-group 3 sequential
Router(config-voice-hunt-group)# pilot 5601
Router(config-voice-hunt-group)# list 5001, 5002, 5017, 5028

Router(config-voice-hunt-group)# final 6000
Router(config-voice-hunt-group)# timeout 30

Router(config-voice-hunt-group)# exit

```

The following example shows how to define a parallel hunt group. When callers dial extension 1000, extensions 1001, 1002, and so forth ring simultaneously. The first extension to answer is connected. All other call legs are disconnected. If none of the extensions answer, the call is forwarded to extension 2000, which is the number for the voice-mail service.

```

Router(config)# voice hunt-group 4 parallel
Router(config-voice-hunt-group)# pilot 1000
Router(config-voice-hunt-group)# list 1001, 1002, 1003, 1004
Router(config-voice-hunt-group)# final 2000

Router(config-voice-hunt-group)# timeout 20

Router(config-voice-hunt-group)# exit

```

## Related Commands

Command	Description
<b>final (voice hunt-group)</b>	Defines the last extension in a voice hunt group.
<b>hops (voice hunt-group)</b>	Defines the number of times that a call is redirected to the next phone number in a peer voice hunt-group list before proceeding to the final phone number.
<b>list (voice hunt-group)</b>	Defines the phone numbers that participate in a voice hunt group.
<b>max-redirect</b>	Changes the number of times that a call can be redirected by call forwarding or transfer within a Cisco Unified CME system.
<b>pilot (voice hunt-group)</b>	Defines the phone number that callers dial to reach a voice hunt group.
<b>timeout (voice hunt-group)</b>	Sets the number of seconds after which a call that is not answered is redirected to the next number in the hunt-group list and defines the last phone number in the hunt group.



# voice hunt-group login

To authorize an voice register dn or ephone-dn, use the **voice-hunt-groups login** command in voice register-dn configuration mode. To disable this capability, use the **no** form of this command.

**voice hunt-groups login**  
**no voice hunt-groups login**

## Syntax Description

This command has no arguments or keywords.

## Command Default

A voice register-dn is not allowed to dynamically join and leave voice hunt groups.

## Command Modes

voice register dn configuration (config-voice-register-dn)

## Command History

Cisco IOS Release	Cisco Product	Modification
15.4(3)M	Cisco Unified Enhanced SRST 10.5	This command was introduced.

## Usage Guidelines

Use the **show voice hunt-groups** command to display current hunt group members, including those who joined the group dynamically.

## Examples

The following example creates five voice-register-dns and a hunt group that includes the first two voice-register-dn and two wildcard slots. The last three voice-register-dns are enabled for group hunt dynamic membership. Each of them can join and leave the hunt group whenever one of the slots is available.

```
voice-register-dn 22
 number 4566
voice-register-dn 23
 number 4567
voice-register-dn 24
 number 4568
 voice-hunt login
voice-register-dn 25
 number 4569
 voice-hunt login
voice-register-dn 26
 number 4570
 voice-hunt-groups login
voice-hunt-groups 1 peer
 list 4566,4567,*,*
 final 7777
```

## Related Commands

Command	Description
<b>show voice hunt-groups</b>	Displays voice-hunt group configuration, current status, and statistics.

# voice moh-group

To enter voice-moh-group configuration mode and set up music on hold (MOH) group parameters, use the **voice moh-group** command in global configuration mode. To remove the music on hold (MOH) group parameters from the configuration for SCCP IP phones, use the **no** form of this command.

**voice moh-group moh-group tag**  
**no voice moh-group tag**

<b>Syntax Description</b>	<b>tag</b> Specifies a moh-group number tag (1-5) to be used for music on hold group parameters.
---------------------------	--

<b>Command Default</b>	No voice-moh-group is enabled.
------------------------	--------------------------------

<b>Command Modes</b>	Global configuration (config)
----------------------	-------------------------------

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	15.0(1)XA	Cisco Unified CME 8.0 Cisco Unified SRST 8.0	This command was introduced.

<b>Usage Guidelines</b>	This command enters the voice-moh-group configuration mode for configuring music on hold (MOH) group parameters for SCCP IP phones in Cisco Unified CME or in Cisco Unified SRST.
-------------------------	---

<b>Examples</b>	The following example shows how to enter voice-moh-group configuration mode for configuring a moh group in Cisco Unified CME. This example also includes the command to configure a music on hold (MOH) flash file for this voice-moh- group.
-----------------	---

```
Router(config)# voice-moh-group 1
Router(config-voice-moh-group)#moh minuet.wav
```

<b>Related Commands</b>	<b>moh</b> Enables music on hold from a flash audio feed.
	<b>multicast moh</b> Enables multicast of the music-on-hold audio stream.
	<b>extension-range</b> Defines extension range for a clients calling a voice-moh-group.

# voice register global

To enter voice register global configuration mode in order to set global parameters for all supported Cisco SIP IP phones in a Cisco Unified CME or Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) environment, use the **voice register global** command in global configuration mode. To automatically remove the existing DNPs, pools, and global dialplan patterns, use the **no** form of this command.

**voice register global**  
**no voice register global**

## Syntax Description

This command has no arguments or keywords.

## Command Default

There are no system-level parameters that are configured for SIP IP phones.

## Command Modes

Global configuration (config)

## Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was introduced.
15.0(1)XA	Cisco SIP SRST 8.0	This command was updated to display the signaling transport protocol.
15.1(2)T	Cisco Unified CME 8.1 Cisco Unified SRST 8.1	The no form of the command was modified.
Cisco IOS XE Cupertino 17.7.1a	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.
Cisco IOS XE Cupertino 17.8.1a	Cisco Unified SIP SRST 12.8	Added the new CLI commands <b>key-server</b> , and <b>key-server source-interface &lt;options&gt;</b> under sip-oauth for <b>voice register global</b> mode.

## Usage Guidelines

### Cisco Unified CME

Use this command to set provisioning parameters for all supported SIP phones in a Cisco Unified CME system.

### Cisco Unified SIP SRST

Use this command to set provisioning parameters for multiple pools; that is, all supported Cisco SIP IP phones in a SIP SRST environment.

Cisco Unified CME 8.1 enhances the no form of voice register global command. The no voice register global command clears global configuration along with pools and DN configuration and also removes the configurations for voice register template, voice register dialplan, and voice register session-server. A confirmation is sought before the cleanup is made.

In Cisco Unified SRST 8.1 and later versions, the no voice register global command removes pools and DNPs along with the global configuration.

From Cisco IOS XE Cupertino 17.8.1a onwards, the **voice register global** command is enhanced to support the following:

- Key server IP and credentials on SRST to retrieve keys from CUCM and interface specification of source address for OAuth key server.

```
Router#show running-config | section voice register global
voice register global
sip-oauth      SIP OAuth parameters for Unified SRST
key-server source-interface GigabitEthernet 1
key-server ipv4:2.2.2.2 username admin password 6 Ada_SWISQW^TYSN\ZREeFHJTZPCgMMAAB
```

### Cisco Unified CME

The following is partial sample output from the **show voice register global** command. All of the parameters listed were set under voice register global configuration mode:

```
Router# show voice register global
CONFIG [Version=4.0(0)]
=====
Version 4.0(0)
Mode is cme
Max-pool is 48
Max-dn is 48
Source-address is 10.0.2.4 port 5060
Load 7960-40 is POS3-07-4-07
Time-format is 12
Date-format is M/D/Y
Time-zone is 5
Hold-alert is disabled
Mwi stutter is disabled
Mwi registration for full E.164 is disabled
Dst auto adjust is enabled
  start at Apr week 1 day Sun time 02:00
  stop  at Oct week 8 day Sun time 02:00
```

## Examples

### Cisco Unified CME and Cisco Unified SRST

The following is a sample output from no voice register global command:

```
Router(config)# no voice register global
This will remove all the existing DNs, Pools, Templates,
Dialplan-Patterns, Dialplans and Feature Servers on the system.
Are you sure you want to proceed? Yes/No? [no]:
```

## Related Commands

Command	Description
<b>allow connections sip to sip</b>	Allows connections between SIP endpoints in a Cisco multiservice IP-to-IP gateway.
<b>application (voice register global)</b>	Selects the session-level application for all dial peers associated with SIP phones.

Command	Description
<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified system.

# voice register pool

To enter voice register pool configuration mode for SIP phones, use the **voice register pool** command in global configuration mode. To remove the pool configuration, use the **no** form of this command.

**voice register pool** *pool-tag*  
**no voice register pool** *pool-tag*

## Syntax Description

<i>pool-tag</i>	Unique number assigned to the pool. Range is 1 to 100.
<b>Note</b>	For Cisco Unified Communications Manager Express (Cisco Unified CME) systems, the upper limit for this argument is defined by the <b>max-pool</b> command.

## Command Default

No default behavior or values

## Command Modes

Global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.
Cisco IOS XE Cupertino 17.8.1a	Cisco Unified SIP SRST 14.2	Added a new CLI command <b>sip-oauth</b> for <b>voice register pool</b> mode.

## Usage Guidelines

### Cisco Unified CME

Use this command to set phone-specific parameters for SIP phones in a Cisco Unified CME system. Before using this command, enable the **mode cme** command and set the maximum number of SIP phones supported in your system by using the **max-pool** command.

### Cisco Unified SIP SRST

Use this command to enable user control on which registrations are to be accepted or rejected by a SIP SRST device. The voice register pool command mode can be used for specialized functions and to restrict registrations on the basis of MAC, IP subnet, and number range parameters.

From Cisco IOS XE Cupertino 17.8.1a onwards, you can enable or disable SIP OAuth based authentication under voice register pool.

For example:

```
Router# voice register pool 1
    sip-oauth
```

## Cisco Unified CME

The following example shows how to enter voice register pool configuration mode and forward calls to extension 9999 when extension 2001 is busy:

```
Router(config)# voice register pool 10
Router(config-register-pool)# type 7960
Router(config-register-pool)# number 1 2001
Router(config-register-pool)# call-forward busy 9999 mailbox 1234
```

## Cisco Unified SIP SRST

The following partial sample output from the **show running-config** command shows that several voice register pool commands are configured within voice register pool 3:

```
voice register pool 3
  id network 10.2.161.0 mask 255.255.255.0
  number 1 95... preference 1
  cor outgoing call95 1 95011
  max registrations 5
  voice-class codec 1
```

## Enabling or Disabling SIP OAuth

The following is a partial sample output showing SIP OAuth enabled.

```
2055Router#show voice register pool all
Pool Tag 20
Config:
  Device ID Name is test
  Proxy Ip address is 0.0.0.0
  DTMF Relay is disabled
  kpml signal is enabled
  Lpcor Type is none

  SIP-OAuth is enabled
  Reason for unregistered state:
    No registration request since last reboot/unregister

  paging-dn: config 0 [multicast] effective 0 [multicast]

VRF:
  NA
```

### Related Commands

Command	Description
<b>max-pool (voice register global)</b>	Sets the maximum number of SIP phones that are supported by a Cisco Unified CME system.
<b>mode (voice register global)</b>	Enables the mode for provisioning SIP phones in a Cisco Unified CME system.
<b>number (voice register pool)</b>	Configures a valid number for a SIP phone.

Command	Description
<b>type (voice register pool)</b>	Defines a Cisco IP phone type.
<b>voice register dn</b>	Enters voice register dn configuration mode to define an extension for a SIP phone line.
<b>voice register global</b>	Enters voice register global configuration mode in order to set global parameters for all supported Cisco SIP phones in a Cisco Unified CME or Cisco Unified SIP SRST environment.



# voice sip oauth get-keys

To retrieve OAuth keys from the CUCM on demand, use the **voice sip oauth get-keys** command.

**voice sip oauth get-keys**

<b>Command Default</b>	Disabled by default.
------------------------	----------------------

<b>Command Modes</b>	Global configuration mode.
----------------------	----------------------------

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Cisco IOS XE Cupertino 17.8.1a	This command was introduced.

<b>Usage Guidelines</b>	Use the <b>voice sip oauth get-keys</b> command on SRST to get keys from the call manager.
-------------------------	--



<b>Note</b>	Key server should be configured under <b>voice register</b> .
-------------	---

Keys are fetched every 24 hours or within 24 hours of last command execution.

To get the keys using the **voice sip oauth get-keys** command, key server should be configured first.

```
Router#voice sip oauth get-keys
Successfully triggered http request to fetch sip-oauth keys
Router#
```

# voice vrf

To configure a voice VRF, use the **voice vrf** command in global configuration mode. To remove the voice VRF configuration, use the **no** form of this command.

**voice vrf** *vrfname*  
**no voice vrf** *vrfname*

## Syntax Description

<i>vrfname</i>	A name assigned to the voice vrf.
----------------	-----------------------------------

## Command Default

No voice VRF is configured.

## Command Modes

Global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	This command was introduced as part of VRF functionality support on Cisco 4000 Series Integrated Services Router for Unified SRST.

## Usage Guidelines

You must create a VRF using the **vrf definition** *vrf-name* command before you can configure it as a voice VRF. This configuration is both for trunk side and Unified SRST line side.

### Voice VRF configuration

The following is a sample configuration for **voice vrf** in Unified SRST line side:

```
vrf definition vrf1
rd 100:101
!
address-family ipv4
exit-address-family
voice vrf vrf1
interface GigabitEthernet0/0/0
vrf forwarding vrf1
ip address 8.44.22.77 255.255.0.0
ip route vrf vrf1 8.0.0.0 255.0.0.0 8.44.0.1
```

## Related Commands

Command	Description
<b>vrf definition</b> <i>vrf-name</i>	Creates a VRF with the specified name.

# voice-class codec (voice register pool)

To assign a previously configured codec selection preference list, use the **voice-class codec** command in voice register pool configuration mode. To remove the codec preference assignment from the voice register pool, use the no form of this command.

**voice-class codec** *tag*  
**no voice-class codec**

## Syntax Description

<i>tag</i>	Unique number assigned to the voice class. Range is from 1 to 10000. The tag number maps to the tag number created by using the <b>voice class codec</b> command in dial-peer configuration mode.
------------	---

## Command Default

None

## Command Modes

Voice register pool configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco SIP SRST 3.0	This command was introduced.
12.3(4)T	Cisco SIP SRST 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)T	Cisco CME 3.4 Cisco SIP SRST 3.4	This command was added to Cisco CME.
Cisco IOS XE Amsterdam 17.2.1r	Cisco Unified SIP SRST 12.8	Introduced support for YANG models.

## Usage Guidelines

During Cisco Unified Session Initiation Protocol (SIP) Survivable Remote Site Telephony (SRST) or Cisco Unified Communications Manager Express (Cisco Unified CME) registration, a dial peer is created, and that dial peer includes codec g729r8 by default. The **voice-class codec** command allows you to change the automatically selected default codec, if desired.

You can assign one voice class to each voice register pool. If you assign another voice class to a pool, the last voice class assigned replaces the previous voice class.



**Note** The **id** (voice register pool) command is required and must be configured before any other voice register pool commands. The **id** command identifies a locally available individual Cisco SIP IP phone or set of Cisco SIP IP phones.

## Examples

The following partial sample output from the **show running-config** command shows that voice register pool 1 has been set up to use the previously configured codec voice class 1:

```
voice register pool 1
  id mac 0030.94C2.A22A
```

**voice-class codec (voice register pool)**

```

preference 5
cor incoming call91 1 91011
translate-outgoing called 1
proxy 10.2.161.187 preference 1 monitor probe icmp-ping
alias 1 94... to 91011 preference 8
voice-class codec 1

```

**Related Commands**

Command	Description
<b>codec (voice register pool)</b>	Specifies the codec supported by a single Cisco SIP phone or a VoIP dial peer in a Cisco Unified SIP SRST or a Cisco Unified CME environment.
<b>id (voice register pool)</b>	Explicitly identifies a locally available individual Cisco SIP IP phone, or when running Cisco Unified SIP SRST, set of Cisco SIP IP phones.
<b>voice register pool</b>	Enters voice register pool configuration mode for SIP phones.
<b>voice class codec (dial-peer)</b>	Assigns a previously configured codec selection preference list (codec voice class) to a VoIP dial peer.

## voicemail (call-manager-fallback)

To configure the telephone number that is speed-dialed when the messages button on a Cisco IP phone is pressed, use the **voicemail** command in call-manager-fallback configuration mode. To disable the messages button, use the **no** form of this command.

**voicemail** *phone-number*  
**no voicemail**

<b>Syntax Description</b>	<i>phone-number</i> Phone number configured as a speed-dial number for retrieving messages.
---------------------------	---

**Command Default** No phone number is configured, and the messages button is ineffective.

**Command Modes** Call-manager-fallback configuration

<b>Command History</b>	<b>Cisco IOS Release</b>	<b>Cisco Product</b>	<b>Modification</b>
	12.1(5)YD	Cisco SRST 1.0	This command was introduced on the following platforms: Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series IADs.
	12.2(2)XT	Cisco SRST 2.0	This command was implemented on Cisco 1750 and Cisco 1751 multiservice routers.
	12.2(8)T	Cisco SRST 2.0	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725, Cisco 3745, and Cisco MC3810-V3 routers.
	12.2(8)T1	Cisco SRST 2.0	This command was implemented on the Cisco 2600-XM and Cisco 2691 routers.
	12.2(11)T	Cisco SRST 2.01	This command was integrated into Cisco IOS Release 12.2(11)T and implemented on the Cisco 1760 routers.

**Usage Guidelines** The **voicemail** command configures the telephone number that is speed-dialed when the messages button on a Cisco IP phone is pressed. The same voice-mail telephone number is configured for all Cisco IP phones connected to the router.

**Examples** The following example specifies 4085550100 as the speed-dial number that is dialed to retrieve messages when the messages button is pressed:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# voicemail 914085550100
```

The number 914085550100 is called when the Cisco IP phone messages button is pressed to retrieve messages.

**Related Commands**

Command	Description
<b>call-manager-fallback</b>	Enables Cisco Unified Survivable Remote Site Telephony (SRST) support and enters call-manager-fallback configuration mode.

# vrf definition

To configure a VRF with a specified name, use the **vrf definition** command in global configuration mode. To remove the VRF configuration, use the **no** form of this command.

**vrf definition** *vrf-name*  
**no vrf definition** *vrf-name*

## Syntax Description

<i>vrf-name</i>	A name assigned to the configured vrf.
-----------------	--

## Command Default

No VRF is configured.

## Command Modes

Global configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	This command was introduced as part of VRF functionality support on Cisco 4000 Series Integrated Services Router for Unified SRST.

## Usage Guidelines

You can create a VRF with a specified name using the **vrf definition** *vrf-name* command. Space is not allowed in the VRF name. For example, **vrf 1** is not a valid name for a VRF. However, **vrf1** as shown in the example below is a valid name.

### VRF Definition configuration

The following is a sample configuration for **vrf definition** in Unified SRST line side:

```
vrf definition vrf1
rd 100:101
!
address-family ipv4
exit-address-family
```

## Related Commands

Command	Description
<b>voice vrf</b> <i>vrfname</i>	Configures a Voice VRF in global configuration mode.

# vrf forwarding

To associate a VRF instance with the tunnel, use the **vrf forwarding** command in interface configuration mode. To remove the association of VRF instance with the tunnel, use the **no** form of this command.

**vrf forwarding** *customer-vrf-name*  
**no vrf forwarding** *customer-vrf-name*

## Syntax Description

<i>customer-vrf-name</i>	A name assigned to the customer vrf.
--------------------------	--------------------------------------

## Command Default

No VRF is forwarded.

## Command Modes

Interface configuration

## Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Amsterdam 17.2.1r	Unified SRST 12.8	This command was introduced as part of VRF functionality support on Cisco 4000 Series Integrated Services Router for Unified SRST.

## Usage Guidelines

You can associate the customer VRF instance with the tunnel using the **vrf forwarding** *customer-vrf-name* command. Packets exiting the tunnel are forwarded to this VRF (inner IP packet routing).

## VRF Forwarding configuration

The following is a sample configuration for **vrf forwarding** for Unified SRST:

```
voice vrf vrf1
interface GigabitEthernet0/0/0
 vrf forwarding vrf1
 ip address 8.44.22.77 255.255.0.0
 ip route vrf vrf1 8.0.0.0 255.0.0.0 8.44.0.1
```

## Related Commands

Command	Description
<b>voice vrf</b> <i>vrfname</i>	Configures a Voice VRF in global configuration mode.
<b>vrf definition</b> <i>vrf-name</i>	Creates a VRF with the specified name.



## xmlschema (call-manager-fallback)

To specify the URL for a Cisco Unified Survivable Remote Site Telephony (SRST) eXtensible Markup Language (XML) application program interface (API) schema, use the **xmlschema** command in call-manager-fallback configuration mode. To set the URL for the XML API schema to the default, use the **no** form of this command.

**xmlschema** *schema-url*  
**no xmlschema**

### Syntax Description

<i>schema-url</i>	Local or remote URL as defined in RFC 2396.
-------------------	---

### Command Default

srst-its.xsd

### Command Modes

Call-manager-fallback configuration

### Command History

Cisco IOS Release	Cisco Product	Modification
12.3(11)T	Cisco SRST 3.2	This command was introduced.

### Examples

The following example specifies a URL for an XML API schema:

```
Router(config)# call-manager-fallback  
Router(config-cm-fallback)# xmlschema http://server2.example.com/schema/schema1.xsd
```

### Related Commands

Command	Description
<b>call-manager-fallback</b>	Enable Cisco Unified SRST configuration mode.

**xmlschema (call-manager-fallback)**