Cisco Unified CME Commands: M

mac-address (ephone)

To associate the MAC address of a Cisco IP phone with an ephone configuration in a Cisco CallManager Express (Cisco CME) system, use the **mac-address** command in ephone configuration mode. To disassociate the MAC address from an ephone configuration, use the **no** form of this command.

mac-address [*mac-address*] **[reserved]**

no mac-address

Syntax Description

mac-address	Identifying MAC address of an IP phone, which is found on a sticker located on the bottom of the phone.
reserved	Identifies the reserved MAC address of the phone.

Command Default

There are no default behavior or values for this command.

Command Modes

Ephone configuration (config-ephone)

Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco ITS 1.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.2(15)ZJ	Cisco CME 3.0	The *mac-address* argument was made optional to enable automatic MAC address assignment after registration of phones.
12.3(4)T	Cisco CME 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

Usage Guidelines

Use this command to specify the MAC address of a specific Cisco IP phone in order to physically identify the Cisco IP phone in a Cisco CME configuration. The MAC address of each Cisco IP phone is printed on a sticker that is placed on the bottom of the phone.

If you choose to register phones before configuring them, the **mac-address** command can be used during configuration without entering the *mac-address* argument. The Cisco CME system detects MAC addresses and automatically populates phone configurations with their corresponding MAC addresses and phone types. This capability is not supported for voice-mail ports and is supported only by Cisco CME 3.0 and later versions. To use this capability, enable Cisco CME by using the following commands: **max-ephones**, **max-dn**, **create**

cnf-files, and **ip source-address.** After these commands have been used, phones can start to register. Then, when you are configuring a registered ephone and you use the **mac-address** command with no argument, the MAC address of the phone is automatically read into the configuration. The equivalent functionality is available through the Cisco CME graphic user interface (GUI).

If you choose to configure phones before registering them, the MAC address for each ephone must be entered during configuration.

Examples

The following example associates the MAC address CFBA.321B.96FA with the IP phone that has phone-tag 22:

```
Router(config)# ephone 22
Router(config-ephone)# mac-address CFBA.321B.96FA
```

Related Commands

	Description
create cnf-files	Builds the XML configuration files that are required for IP phones used with Cisco IOS Telephony Services V2.1, Cisco CallManager Express 3.0, or later versions.
ip source-address	Identifies the IP address and port through which IP phones communicate with a Cisco CME router.
max-dn	Sets the maximum number of ephone-dns to be supported by a Cisco CME router.
max-ephones	Sets the maximum number of ephones to be supported by a Cisco CME router.
show ephone registered	Displays status and information for registered IP phones.

mac-address (voice-gateway)

To define the MAC address of the voice gateway to autoconfigure, use the **mac-address** command in voice-gateway configuration mode. To remove the MAC address from the configuration, use the **no** form of this command.

mac-address *mac-address*

no mac-address

Syntax Description

mac-address	MAC address of the voice gateway.

Command Default

No MAC address is defined for the voice gateway to be autoconfigured.

Command Modes

Voice-gateway configuration (config-voice-gateway)

Command History

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

Usage Guidelines

This command defines the MAC address of the Cisco voice gateway that downloads its XML configuration file from Cisco Unified CME using the Autoconfiguration feature.

Examples

The following example associates the MAC address 001F.A30F.8331 for the Cisco VG224 voice gateway associated with tag 1:

```
voice-gateway system  1
 network-locale FR
 type VG224
 mac-address 001F.A30F.8331
 voice-port 0-23
 create cnf-files
```

Related Commands

Command	Description
type (voice-gateway)	Defines the type of voice gateway to autoconfigure in Cisco Unified CME.

Command	Description
voice-port (voice-gateway)	Identifies the analog ports on the voice gateway that register to Cisco Unified CME.

mailbox-selection (dial-peer)

To set a policy for selecting a mailbox for calls from a Cisco Unified CME system that are diverted before being sent to a Cisco Unity Express or PBX voice-mail pilot number, use the **mailbox-selection** command in dial-peer configuration mode. To return to the default, use the **no** form of this command.

mailbox-selection {**last-redirect-num**| **orig-called-num**}

no mailbox-selection

Syntax Description

last-redirect-num	(PBX voice mail only) The mailbox to which the call will be sent is the number that diverted the call to the voice-mail pilot number (the last number to divert the call).
orig-called-num	(Cisco Unity Express only) The mailbox to which the call will be sent is the number that was originally dialed before the call was diverted.

Command Default

Cisco Unity Express uses the last number to which the call was diverted before it was sent to voice mail as the mailbox number. Some legacy PBX systems use the originally called number as the mailbox number.

Command Modes

Dial-peer configuration (config-dial-peer)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

When Cisco Unified CME diverts a call, it captures the reroute information which will be used to compose a reroute request. A dial-peer match will be performed against the diverted-to number. If this is the voice mail pilot number and the **mailbox-selection** command has been used to install a policy, the reroute information will be amended as directed by the command. The originator will pick up the modified reroute request, build the diversion information and include it in the new diverted call to the voice-mail pilot number.

This command should be used on the outbound dial peer for the pilot number of the voice-mail system.

This command might not work properly in certain network topologies, including the following cases:

- When the last redirecting endpoint is not hosted on Cisco Unified CME. This rarely occurs with a PBX.

- When a call is forwarded across several SIP trunks. Multiple SIP Diversion Headers (stacking hierarchy) are not supported in Cisco IOS software.
- When a call is forwarded across non Cisco voice gateways that do not support the optional H450.3 originalCalledNr field.

Examples

The following example shows how to set a policy to select the mailbox of the originally called number when a call is diverted to a Cisco Unity Express or PBX voice-mail system with the pilot number 7000.

```
dial-peer voice 7000 voip
 destination-pattern 7000
 session target ipv4:10.3.34.211
 codec g711ulaw
 no vad
 mailbox-selection orig-called-num
```

mailbox-selection (ephone-dn)

To set a policy for selecting a mailbox for calls that are diverted before being sent to a Cisco Unity voice-mail pilot number, use the **mailbox-selection** command in ephone-dn configuration mode. To return to the default, use the **no** form of this command.

mailbox-selection last-redirect-num

no mailbox-selection

Syntax Description

last-redirect-num	The mailbox to which the call will be sent is the last number to divert the call.

Command Default

Cisco Unity uses the originally called number as the mailbox number.

Command Modes

Ephone-dn configuration (config-ephone-dn)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

This command sets the policy for selecting a mailbox for diverted calls.

This command is used on the ephone-dn associated with the voice-mail pilot number.

This command can only be used with SCCP phones.

This command might not work properly in certain network topologies, including the following cases:

- When the last redirecting endpoint is not hosted on Cisco Unified CME. This may rarely occur with a PBX.
- When a call is forwarded across several SIP trunks. Multiple SIP Diversion Headers (stacking hierarchy) are not supported in Cisco IOS software.
- When a call is forwarded across non Cisco voice gateways that do not support the optional H450.3 originalCalledNr field.

Examples

The following example sets a policy to select the mailbox of the last redirecting number when a call is diverted to a Cisco Unity voice-mail system with the pilot number 8000.

```
ephone-dn 2583
 number 8000
 mailbox-selection last-redirect-num
```

max-calls-per-button

To set the maximum number of calls allowed on an octo-line directory number on an SCCP phone, use the **max-calls-per-button** command in ephone or ephone-template configuration mode. To reset to the default, use the **no** form of this command.

max-calls-per-button *number-of-calls*

no max-calls-per-button

Syntax Description

number-of-calls	Maximum number of calls. Range: 1 to 8. Default: 8.

Command Default

Maximum number of calls allowed on an octo-line is 8.

Command Modes

Ephone configuration (config-ephone) Ephone-template configuration (config-ephone-template)

Command History

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

Usage Guidelines

This command limits the maximum number of calls, both incoming and outgoing, that can be active on each octo-line directory number on an SCCP phone. This command applies to all octo-line directory numbers on the phone.

This command must be set to a value that is more than or equal to the value set with the **busy-trigger-per-button** command.

For phones that do not support octo-line directory numbers such as the Cisco Unified IP Phone 7902, 7920, or 7931, and analog phones connected to the Cisco VG224 or Cisco ATA, we recommend that you set the **max-calls-per-button** command to 2. Otherwise, after the phone type is identified with either the **type** command or during phone registration, this command is automatically set to 2.

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

Examples

The following example sets the maximum calls allowed on octo-lines to 4 on ephone 1.

```
Router(config)#
```

```
ephone 1
Router(config-ephone)# max-calls-per-button 4
```

Related Commands

Command	Description
busy-trigger-per-button	Sets the maximum number of incoming calls allowed on an octo-line directory number before it triggers Call Forward Busy on the phone.
ephone-dn	Configures a directory number for SCCP phones.
type	Assigns a phone type to an SCCP phone.

max-conferences

To set the maximum number of three-party conferences that are supported simultaneously by the Cisco CallManager Express (Cisco CME) router, use the **max-conferences** command in telephony-service configuration mode. To reset this number to the default, use the **no** form of this command.

max-conferences*max-conference-number***[gain -6 | 0 | 3 | 6]**

no max-conferences

Syntax Description

max-conference number	Maximum number of three-party conferences that are supported simultaneously by the router. This number is platform-dependent, and the default is half the maximum for each platform. The following are the maximum values for this argument: • Cisco 1700 series, Cisco 2600 series, Cisco 2801—8 • Cisco 2811, Cisco 2821, Cisco 2851, Cisco 3600 series, Cisco 3700 series—16 • Cisco 3800 series—24 (requires Cisco IOS Release 12.3(11)XL or higher) **Note** Each individual Cisco IP phone can host a maximum of one conference at a time. You cannot create a second conference on the phone if you already have an existing conference on hold.
gain	(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

Default is half the maximum number of simultaneous three-party conferences for each platform.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.

Cisco IOS Release	Cisco Product	Modification
12.3(11)XL1	Cisco CME 3.2.1	The **gain** keyword was added.
12.3(14)T	Cisco CME 3.3	This command was integrated into Cisco IOS Release 12.3(14)T.

Usage Guidelines

This 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 mu-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 maximums.

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)# telephony-service
Router(config-telephony)# max-conferences 4 gain 6
```

max-dn

To set the maximum number of extensions (ephone-dns) to be supported by a Cisco Unified CME router, use the **max-dn** command in telephony-service configuration mode. To reset this number to the default value, use the **no** form of this command.

max-dn *max-directory-numbers* [**preference** *preference-order*] [**no-reg** {**primary**| **both**}]

no max-dn

Syntax Description

maxdirectorynumbers	Maximum number of extensions (ephone-dns) to allow in the Cisco CME system. The maximum you can set depends on the software version, router platform, and amount of memory that you have installed. Type **?** to display range. The default is 0.
preference *preference-order*	(Optional) Sets a preference value for the primary number of an ephone-dn. Refer to CLI help for a range of numeric options, where 0 is the highest preference. Default is 0.
no-reg	(Optional) Globally disables ephone registration with an H.323 gatekeeper or SIP proxy.
primary	Primary ephone-dn numbers only.
both	Both primary and secondary ephone-dn numbers.

Command Default

The default is 0.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco ITS 1.0	This command was introduced
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.4(4)XC	Cisco Unified 4.0	The **preference**, **no-reg**, **primary**, and **both** keywords were introduced.

Cisco IOS Release	Cisco Product	Modification
12.4(9)T	Cisco Unified 4.0	The **preference**, **no-reg**, **primary**, and **both** keywords were integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

The **max-dn** command limits the number of extensions (ephone-dns) available in a Cisco Unified CME system. The maximum number of ephone-dns that you can create depends on the software version, router platform, and amount of memory that you have installed. Type **?** to display range.

The **max-ephones** command similarly limits the number of IP phones in a Cisco Unified CME system.

Note 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.

If registration with an H.323 gatekeeper or SIP proxy is enabled globally (the default), you can override the setting per extension by using the **no-reg** keyword in the **number** command for individual ephone-dns.

After using this command, you can provision individual extensions using the Cisco Unified CME graphic user interface (GUI) or the router CLI in ephone-dn configuration mode.

Examples

The following example sets the maximum number of extensions (ephone-dns) to 12:

```
Router(config)# telephony-service
Router(config-telephony)# max-dn 12
```

The following example sets the maximum number of extensions to 150 and specifies that the primary number of each extension should receive a dial-peer preference order of 1:

```
Router(config)# telephony-service
Router(config-telephony)# max-dn 150 preference 1
```

The following example sets the maximum number of extensions to 200 and specifies that they should not register both primary and secondary numbers with the H.323 gatekeeper:

```
Router(config)# telephony-service
Router(config-telephony)# max-dn 200 no-reg both
```

The following example sets the maximum number of extensions to 200 and specifies that ephone-dn 36 should not register its primary number with the gatekeeper:

```
Router(config)# telephony-service
Router(config-telephony)# max-dn 200
Router(config-telephony)# exit
Router(config)# ephone-dn 36
Router(config-ephone-dn)# number 75373 no-reg primary
```

Related Commands

	Description
ephone-dn	Enters ephone-dn configuration mode.

	Description
max-ephones	Sets the maximum number of phones supported by the router.
number	Associates a telephone or extension number with an ephone-dn.

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

maxdirectorynumbers	Maximum number of extensions (ephone-dns) supported by the Cisco router. The maximum number is version and platform dependent; type **?** to display range. • 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. • In Cisco Unified CME 7.1 and Cisco Unified SIP SRST 7.1 and later versions: Default is 0.

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.

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
voice register dn	Enters voice register dn configuration mode to define an extension for a SIP phone line.
max-pool (voice register global)	Sets the maximum number of SIP voice register pools that are supported in a Cisco SIP SRST or Cisco CME environment.

max-ephones

To set the maximum number of Cisco IP phones to be supported by a Cisco CallManager Express (Cisco CME) router, use the **max-ephones** command in telephony-service configuration mode. To reset this number to the default value, use the **no** form of this command.

max-ephones *max-phones*

no max-ephones

Syntax Description

maxphones	Maximum number of phones supported by the Cisco CME router. The maximum number is version- and platform-dependent; refer to Cisco IOS command-line interface (CLI) help. Default is 0.

Command Default

Default is 0.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.1(5)YD	Cisco ITS 1.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.4(15)XZ	Cisco Unified CME 4.3	This command was modified to set the maximum number of phones that can register to Cisco Unified CME.
12.4(20)T	Cisco Unified CME 7.0	This command was integrated into Cisco IOS Release 12.4(20)T.

Usage Guidelines

The **max-ephones** command limits the number of Cisco IP phones supported on the router. The maximum number you can set is platform- and version-dependent. Use CLI help to determine the maximum number of ephones you can set, as shown in this example:

```
Router(config-telephony)# max-ephones ?
  <1-48>  Maximum phones to support
```

The **max-dn** command similarly limits the number of extensions (ephone-dns) in a Cisco CME system.

Note You can increase the number of phones; but after the maximum allowable number is configured, you cannot reduce the limit of the Cisco IP phones without rebooting the router.

After using this command, configure phones by using the Cisco CME graphic user interface (GUI) or the router CLI in ephone configuration mode.

Examples

The following example sets the maximum number of Cisco IP phones in a Cisco CME system to 24:

```
Router(config)# telephony-service
Router(config-telephony)# max-ephones 24
```

Related Commands

Command	Description
ephone	Enters ephone configuration mode.
max-dn	Sets the maximum number of extensions (ephone-dns) that can be supported by the router.

max-idle-time

To create an idle-duration timer for automatically logging out an Extension Mobility user, use the **max-idle-time** command in voice user-profile configuration mode. To remove the timer, use the **no** form of this command.

max-idle-time *minutes*

no max-idle-time

Syntax Description

minutes	Maximum number of minutes an Extension Mobility phone is idle after which the logged-in user is logged out from Extension Mobility. Range:1 to 9999.

Command Default

No timer is created.

Command Modes

Voice user-profile configuration (config-user-profile)

Command History

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

Usage Guidelines

This command creates an idle-duration timer for automatically logging a user out from Extension Mobility. The timer monitors the phone and if the specified maximum idle time is exceeded, the EM manager logs out the user. Typically this command is used to log out users who fail to manually log out of Extension Mobility before leaving a phone.

The call history record is automatically cleared when a user logs out from an Extension Mobility phone. To disable Automatic Clear Call History on all Extension Mobility phones, use the **keep call-history** command in telephony-service configuration mode.

After creating or modifying a profile, use the **reset** command in voice user-profile configuration mode to reset all phones on which this profile is downloaded to propagate the modifications.

Examples

The following example shows how to create a 30-minute idle-duration timer in user profile 1:

```
Router(config)# voice user-profile 1
Router(config-user-profile)# max-idle-time 30
Router(config-user-profile)# reset
Router(config-user-profile)#
```

Related Commands

Command	Description
keep call-history	Disables Automatic Clear Call History for Extension Mobility in Cisco Unified CME.
reset (voice logout-profile and voice user-profile)	Performs a complete reboot of all IP phones on which a particular logout profile or user profile is downloaded.

maximum bit-rate (video)

To modify the maximum IP phone video bandwidth in Cisco Unified CME, use the **maximum bit-rate** command in 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

value	Video bandwidth in kb/s Range is 0 to 10000000. Default value is 10000000.

Command Default

Maximum bit-rate of video bandwidth is 1,000,000 kb/s.

Command Modes

Video configuration (config-tele-video)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

Use this command to modify the default value of the maximum video bandwidth for all video-capable phones associated with a Cisco Unified CME router. Default value is 1,000,000 kb/s.

Examples

The following example sets a maximum bit-rate of 256 kb/s.

```
Router(config)#
telephony-service
Router(config-telephony)# video
Router(conf-tele-video)# maximum bit-rate 256
```

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 or Cisco Unified CME, use the **max-pool** command in voice register global configuration mode. 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

maxvoice-register-pools	Maximum number of SIP voice register pools supported by the Cisco router. The upper limit of voice register pools is version- and platform-dependent; type **?** for range. • 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. • In Cisco Unified CME 7.1 and Cisco Unified SIP SRST 7.1 and later versions: Default is 0.

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.

Usage Guidelines

This command limits the number of SIP phones supported by Cisco Unified CME. 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 CME.

You can increase the number of phones; but after the maximum allowable number is configured, you cannot reduce the limit of the SIP phones without rebooting the router.

Note This command can also be used for Cisco Unified SIP SRST.

Examples

The following example shows how to set the maximum number of Cisco SIP IP phones in Cisco Unified SIP SRST or Cisco Unified CME to 24:

```
Router(config)# voice register global
Router(config-register-global)# max-pool 24
```

Related Commands

Command	Description
max-dn (voice register global)	Set the maximum number of SIP phone directory numbers (extensions) that are supported by 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

number	Number of presentation lines. Range: 1 to 100. Default: 0. See the table 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 1: Supported Values for Ephone-Type Commands

Supported Device	device-id	device-type	num-buttons	max-presentation
Cisco Unified IP Phone 6901	547	6901	1	1
Cisco Unified IP Phone 6911	548	6911	1	10
Cisco Unified IP Phone 7915 Expansion Module with 12 buttons	227	7915	12	0 (default)

Supported Device	device-id	device-type	num-buttons	max-presentation
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 Wireless IP Phone 7925	484	7925	6	4
Cisco Unified IP Conference Station 7937G	431	7937	1	6
Nokia E61	376	E61	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
device-id	Specifies the device ID for a phone type in an ephone-type template.
num-buttons	Sets the number of line buttons supported by a phone type.
type	Assigns the phone type to an SCCP phone.

max-redirect

To change the number of times that a call can be redirected by call forwarding or transfer within a Cisco Unified CME system, use the **max-redirect** command in telephony-service configuration mode. To reset to the default number of redirects, use the **no** form of this command.

max-redirect *number*

no max-redirect

Syntax Description

number	Number of permissible redirects. Range: 5 to 20. Default: 10.

Command Default

Number of redirects is 10.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(24)T1	Cisco Unified CME 7.1	The default value was increased from 5 to 10.
15.1(1)T	Cisco Unified CME 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

Usage Guidelines

This command supports Cisco Unified CME ephone hunt groups by allowing calls to be redirected more than the default number of times.

Examples

The following example sets the maximum number of redirects to 8:

```
Router(config)# telephony-service
Router(config-telephony)# max-redirect 8
```

Related Commands

Command	Description
ephone-hunt	Creates an ephone hunt group in Cisco Unified CME.

Command	Description
hops	Sets the number of hops before a call proceeds to the final number.

max-subscription

To set the maximum number of concurrent watch sessions that are allowed, use the **max-subscription** command in presence configuration mode. To return to the default, use the **no** form of this command.

max-subscription *number*

no max-subscription

Syntax Description

number	Maximum watch sessions. Range: 100 to 500. Default: 100.

Command Default

Maximum subscriptions is 100.

Command Modes

Presence configuration (config-presence)

Command History

Release	Modification
12.4(11)XJ	This command was introduced.
12.4(15)T	This command was integrated into Cisco IOS Release 12.4(15)T.

Usage Guidelines

This command sets the maximum number of concurrent presence subscriptions for both internal and external subscribe requests.

Examples

The following example shows the maximum subscriptions set to 150:

```
Router(config)# presence
Router(config-presence)# max-subscription 150
```

Related Commands

	Description
allow watch	Allows a directory number on a phone registered to Cisco Unified CME to be watched in a presence service.
allow subscribe	Allows internal watchers to monitor external presence entities (directory numbers).

	Description
presence enable	Allows incoming presence requests from SIP trunks.
server	Specifies the IP address of a presence server for sending presence requests from internal watchers to external presence entities.
watcher all	Allows external watchers to monitor internal presence entities (directory numbers).

max-timeout

To set the maximum combined timeout for the no-answer periods for all ephone-dns in the ephone-hunt list, use the **max-timeout** command in ephone-hunt configuration mode. To return this value to the default, use the **no** form of this command.

max-timeout *seconds*

no max-timeout *seconds*

Syntax Description

seconds	Number of seconds. Range is from 3 to 60000. Default is unlimited.

Command Default

Number of seconds is unlimited.

Command Modes

Ephone-hunt configuration (config-ephone-hunt)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Examples

The following example shows how to set different no-answer timeouts for each ephone-dn in the hunt-group list and no maximum timeout. The first call to the hunt group rings extension 1001. If that extension does not answer in 7 seconds, the call is forwarded to extension 1002. If that extension does not answer after 10 seconds, the call is forwarded to extension 1003. However, if extension 1003 does not answer after 8 seconds, the call is sent to the final number, extension 4500, because the maximum timeout of 25 seconds has been reached.

```
ephone-hunt 3 peer
 pilot 4200
 list 1001, 1002, 1003
 hops 3
 timeout 7, 10, 15
 max-timeout 25
 final 4500
```

Related Commands

	Description
ephone-hunt	Defines an ephone hunt group and enters ephone-hunt configuration mode.

media

To enable media packets to pass directly between the endpoints, without the intervention of the Cisco Unified Border Element (Cisco UBE), and to enable the incoming and outgoing IP-to-IP call gain/loss feature for audio call scoring on either the incoming dial peer or the outgoing dial peer, enter the **media** command in dial peer, voice class, or voice service configuration mode. To return to the default IPIPGW behavior, use the **no** form of this command.

media [**flow-around**| **flow-through**| **forking**| **monitoring** [*max-calls*]| **statistics**| **transcoder high-density**]

no media [**flow-around**| **flow-through**| **forking**| **monitoring** [*max-calls*]| **statistics**| **transcoder high-density**]

Syntax Description

flow-around	(Optional) Enables media packets to pass directly between the endpoints, without the intervention of the Cisco UBE. The media packet is to flow around the gateway.
flow-through	(Optional) Enables media packets to pass through the endpoints, without the intervention of the Cisco UBE.
forking	(Optional) Enables the media forking feature for all calls.
monitoring	Enables the monitoring feature for all calls or a maximum number of calls.
max-calls	The maximum number of calls that are monitored.
statistics	(Optional) Enables media monitoring.
transcoder high-density	(Optional) Converts media codecs from one voice standard to another to facilitate the interoperability of devices using different media standards.

Command Default

The default behavior of the Cisco UBE is to receive media packets from the inbound call leg, terminate them, and then reoriginate the media stream on an outbound call leg.

Command Modes

Dial peer configuration (config-dial-peer) Voice class configuration (config-class) Voice service configuration (config-voi-serv)

Command History

Release	Modification
12.3(1)T	This command was introduced.

Release	Modification
12.4(11)XJ2	This command was modified. The **statistics** keyword was introduced.
12.4(15)T	This command was integrated into Cisco IOS Release 12.4(15)T.
12.4(20)T	This command was modified. The **transcoder** and **high-density** keywords were introduced.
15.0(1)M	This command was modified. The **forking** and **monitoring** keywords and the *max-calls* argument were introduced.
15.1(3)T	This command was modified. The media flow around is now supported for the SIP to SIP trunk calls in Cisco Unified CME 8.5.

Usage Guidelines

With the default configuration, the Cisco UBE receives media packets from the inbound call leg, terminates them, and then reoriginates the media stream on an outbound call leg. Media flow-around enables media packets to be passed directly between the endpoints, without the intervention of the Cisco UBE. The Cisco UBE continues to handle routing and billing functions. Media flow-around for SIP-to-SIP calls is not supported.

Note The Cisco UBE must be running Cisco IOS Release 12.3(1) or a later release to support media flow-around.

You can specify media flow-around for a voice class, all VoIP calls, or individual dial peers.

The **transcoder high-density** keyword can be enabled in any of the configuration modes with the same command format. If you are configuring the **transcoder high-density** keyword for dial peers, make sure that the **media transcoder high-density** command is configured on both the in and out legs.

The software does not support configuring the **transcoder high-density** keyword on any dial peer that is to handle video calls. The following scenarios are not supported:

- Dial peers used for video at any time. Configuring the **media transcoder high-density** command directly under the dial-peer or a voice-class media configuration is not supported.
- Dial peers configured on a Cisco UBE used for video calls at any time. The global configuration of the **media transcoder high-density** command under voice service voip is not supported.

To enable the **media** command on a Cisco 2900 or Cisco 3900 series Unified Border Element voice gateway, you must first enter the **mode border-element** command. This enables the **media forking** and **media monitoring** commands. Do not configure the **mode border-element** command on the Cisco 2800 or Cisco 3800 series platforms.

Examples

Examples

The following example shows media flow-around configured on a dial peer:

```
Router(config)# dial-peer voice 2 voip
Router(config-dial-peer) media flow-around
```

The following example shows media flow-around configured for all VoIP calls:

```
Router(config)# voice service voip
Router(config-voi-serv) media flow-around
```

The following example shows media flow-around configured for voice class calls:

```
Router(config)# voice class media 1
Router(config-class) media flow-around
```

Examples

The following example shows media flow-around configured on a dial peer:

```
Router(config)# dial-peer voice 2 voip
Router(config-dial-peer) media flow-through
```

The following example shows media flow-around configured for all VoIP calls:

```
Router(config)# voice service voip
Router(config-voi-serv) media flow-through
```

The following example shows media flow-around configured for voice class calls:

```
Router(config)# voice class media 2
Router(config-class) media flow-through
```

Examples

The following example shows media monitoring configured for all VoIP calls:

```
Router(config)# voice service voip

Router(config-voi-serv) media statistics
```

The following example shows media monitoring configured for voice class calls:

```
Router(config)# voice class media 1
Router(config-class) media
 statistics
```

Examples

The following example shows the **media transcoder** keyword configured for all VoIP calls:

```
Router(config)# voice service voip

Router(conf-voi-serv)# media transcoder high-density
```

The following example shows the **media transcoder** keyword configured for voice class calls:

```
Router(config)# voice class media 1
Router(config-voice-class)# media transcoder high-density
```

The following example shows the **media transcoder** keyword configured on a dial peer:

```
Router(config)# dial-peer voice 36 voip
Router(config-dial-peer)# media transcoder high-density
```

Examples

The following example shows how to configure audio call scoring for a maximum of 100 calls:

```
mode border-element
media monitoring 100
```

Related Commands

Command	Description
dial-peer voice	Enters dial peer configuration mode.
mode border-element	Enables the media monitoring capability of the **media** command.
voice class	Enters voice class configuration mode.
voice service	Enters voice service configuration mode.

members logout

To configure a Cisco Unified CallManager Express system for all non-shared static members or agents in an ephone-hunt with the Hlogout initial state, use the **members logout** command in ephone-hunt configuration mode. To return to the default, use the no form of this command.

This command is not allowed after **list** and **hunt-group logout DND** are configured or if DNs are shared.

members logout

no members logout

Syntax Description

This command has no arguments or keywords.

Command Default

All members are in Hlogin state.

Command Modes

ephone-hunt configuration (config-ephone hunt)

Command History

Cisco IOS Release	Cisco Product	Modification
15.2(4)M	Cisco Unified CME 9.1	This command was introduced.

Usage Guidelines

All members configured under an ephone-hunt are initialized with HLogin. Use this command to initialize all non-shared static members to Hlogout.

Examples

The following example configures HLogout as the default for all non-shared ephone-hunt static members:

```
Router(config-telephony)# ephone-hunt 1
Router(config-ephone-hunt)# members logout
```

Related Commands

Command	Description
ephone-hunt	Enters ephone-hunt configuration mode to define a Cisco CME ephone-hunt group.

members logout (voice hunt-group)

To configure a Cisco Unified CME system for all non-shared static members or agents in a voice hunt group with the Hlogout initial state, use the **members logout** command in voice hunt-group configuration mode. To return to the default state, use the no form of this command.

This command is not allowed if the CLI command **list** is configured .

members logout

no members logout

Syntax Description

This command has no arguments or keywords.

Command Default

All members are in Hlogin state.

Command Modes

voice hunt-group

Command History

Cisco IOS Release	Cisco Product	Modification
Cisco IOS XE Everest 16.4.1 15.6(3)M1	Cisco Unified CME 11.6	This command was introduced.

Usage Guidelines

All members configured under a voice hunt-group are initialized with HLogin. Use this command to initialize all non-shared static members to Hlogout. If any member of a hunt group in a SIP phone logs out using the CLI command **members logout**, all other DN's of that phone in any hunt group are also logged out. This is because SIP phones only support phone level logout. For SCCP phones, only the DN that is configured with the CLI command **members logout** is logged out from the hunt group. Other member DN's do not logout as SCCP phones support line level logout.

Members Logout is not supported if the CLI command **hunt-group logout DND** is configured. Also, you cannot configure the CLI command **members logout** if the command **list** is configured.

Examples

The following example configures HLogout as the default for all non-shared voice hunt-group static members:

```
Router(config-register-global)# voice hunt-group 1
Router(config-voice-hunt-group)# members logout
```

Related Commands

Command	Description
members logout	Enables members logout for ephone-hunt groups configured on a Cisco Unified CME.

missed-calls

To report missed calls to directory numbers on an IP phone, use the **missed-calls** command in ephone configuration mode. To suppress missed-calls reporting, use the **no** form of this command.

missed-calls [all]

no missed-calls

Syntax Description

all	(Optional) Displays all missed calls including those on overlay buttons.

Command Default

Missed calls are presented on the IP phone and listed in the missed-calls directory. Missed calls to overlay buttons are not reported.

Command Modes

Ephone configuration (config-ephone)

Command History

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

Usage Guidelines

This command enables Cisco Unified CME to report missed calls on the specified phone. Use the **all** keyword to report missed calls to overlaid directory numbers. Only calls to an overlay set that are visibly presented on the phone are reported as missed calls. Calls to an overlay that are terminated by the caller before they are displayed on the phone are not reported as missed calls.

If the unique extension number for a phone is assigned to an overlay set on the phone, missed calls to that extension number are not reported unless you enable this command using the **all** keyword.

Examples

The following example shows that all unanswered calls to 4001 are reported on phone 1.

```
ephone-dn  1  dual-line
 number 4001

ephone  1
 mac-address 0014.6AAC.24E3
 type 7960
 button  1o1,30,31 2:2 3:3
 missed-calls all
```

Related Commands

Command	Description
button	Associates directory numbers with individual buttons on a Cisco Unified IP Phone and specifies ring behavior.

mlpp indication

To enable MLPP indication on an SCCP phone or analog FXS port, use the **mlpp indication** command in ephone-template or voice-port configuration mode. To disable MLPP indication, use the **no** form of this command.

mlpp indication

no mlpp indication

Syntax Description

This command has no arguments or keywords.

Command Default

MLPP indication is enabled on the phone.

Command Modes

Ephone-template configuration (config-ephone-template) Voice-port configuration (config-voiceport)

Command History

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

This command enables a phone to play precedence and preemption tones, and display precedence information for calls. If MLPP indication is disabled, calls on the phone can be preempted but there is no visual or audible indication.

To apply a template to an SCCP phone, use the **ephone-template** command in ephone configuration mode.

Examples

The following example shows MLPP indication is disabled in template 5 and applied to phone 12:

```
ephone-template  5
 mlpp max-precedence 0
 no mlpp indication
!
!
ephone  12
 mac-address 000F.9054.31BD
 ephone-template 5
 type 7960
 button  1:12
```

Related Commands

Command	Description
ephone-template (ephone)	Applies an ephone template to an SCCP phone.

Command	Description
mlpp max-precedence	Sets the maximum precedence (priority) level that a phone user can specify when making an MLPP call.
mlpp preemption	Enables preemption capability on an SCCP phone or analog FXS port.
preemption tone timer	Sets the amount of time the preemption tone plays on the called phone when a lower precedence call is being preempted.

mlpp max-precedence

To set the maximum precedence (priority) level that a phone user can specify when making an MLPP call, use the **mlpp max-precedence** command in ephone-template or voice-port configuration mode. To reset to the default, use the **no** form of this command.

mlpp max-precedence *number*

no mlpp max-precedence

Syntax Description

number	Number representing the maximum precedence level. Range: 0 to 4, where 0 is the highest priority. Default: 4.

Command Default

The MLPP precedence is 4 (routine).

Command Modes

Ephone-template configuration (config-ephone-template) Voice-port configuration (config-voiceport)

Command History

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

This command sets the maximum precedence level that a user can select when making MLPP calls from a phone. The phone user can specify a precedence level that is less than or equal to this value. Cisco Unified CME rejects the call if a user selects a precedence level that is higher than the level set with this command and the user receives an error tone.

Emergency 911 calls are automatically assigned precedence level 0.

To apply a template to an SCCP phone, use the **ephone-template** command.

Examples

The following example shows the precedence level set to 0 in template 5 and applied to phone 12:

```
ephone-template  5
 mlpp max-precedence 0
!
!
ephone  12
 mac-address 000F.9054.31BD
 ephone-template 5
 type 7960
 button  1:12
```

Related Commands

Command	Description
access-digits	Defines the access digit that phone users dial to request a precedence call.
ephone-template (ephone)	Applies an ephone template to an SCCP phone.
mlpp indication	Enables MLPP indication on an SCCP phone or analog FXS port.
mlpp preemption	Enables the preemption capability on an SCCP phone or analog FXS port.

mlpp preemption

To enable calls on an SCCP phone or analog FXS port to be preempted, use the **mlpp preemption** command in ephone-template or voice-port configuration mode. To disable preemption, use the **no** form of this command.

mlpp preemption

no mlpp preemption

Syntax Description

This command has no arguments or keywords.

Command Default

Preemption is enabled on the phone.

Command Modes

Ephone-template configuration (config-ephone-template) Voice-port configuration (config-voiceport)

Command History

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

Usage Guidelines

The command allows an SCCP IP phone or an FXS analog phone to have its calls preempted if it is busy with lower precedence calls.

A phone with preemption disabled can still receive precedence calls in an MLPP network, but the phone itself does not get preempted. The preemption-disabled phone can be connected to a call that is preempted (at another device), in which case, that device receives preemption.

To apply a template to an SCCP phone, use the **ephone-template** command in ephone configuration mode.

Examples

The following example shows preemption disabled in template 5 and applied to phone 12:

```
ephone-template  5
 mlpp max-precedence 0
 no mlpp preemption
!
!
ephone  12
 mac-address 000F.9054.31BD
 ephone-template 5
 type 7960
 button  1:12
```

Related Commands

Command	Description
ephone-template (ephone)	Applies an ephone template to an SCCP phone.
mlpp indication	Enables MLPP indication on an SCCP phone or analog FXS port.
mlpp max-precedence	Sets the maximum precedence (priority) level that a phone user can specify when making an MLPP call.
preemption tone timer	Defines the expiry time for the preemption tone for the call being preempted.

mlpp service-domain

To set the service domain and maximum precedence (priority) level for Multilevel Precedence and Preemption (MLPP) calls, use the **mlpp service-domain** command in ephone-template or voice-port configuration mode. To reset to the default, use the **no** form of this command.

mlpp service-domain {**drsn**| **dsn**} **identifier** *domain-number* **max-precedence** *level*

no mlpp service-domain

Syntax Description

drsn	Phone belongs to Defense Red Switched Network (DRSN).
dsn	Phone belongs to Defense Switched Network (DSN).
domain-number	Number to identify the domain, in three-octet format. Range: 0x000000 to 0xFFFFFF.
level	Number representing the maximum precedence level, where 0 is the highest priority. Range is 0 to 4 (DSN) or 0 to 5 (DRSN).

Command Default

Phone uses global default configured with the **service-domain** command.

Command Modes

Ephone-template configuration (config-ephone-template) Voice-port configuration (config-voiceport)

Command History

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

Usage Guidelines

This command sets the MLPP domain type and number for the phone, and the maximum precedence level that a user can select when making MLPP calls from the phone.

The phone user can select a precedence level that is less than or equal to the value set with this command. Cisco Unified CME rejects the call if a user selects a precedence level that is higher than the level set with this command and the user receives an error tone.

If this command and the **service-domain** command are not enabled, the phone cannot make MLPP calls.

Emergency 911 calls are automatically assigned precedence level 0.

To apply a template to an SCCP phone, use the **ephone-template** command.

Examples

The following example shows the precedence level set to 1 in template 5 and applied to phone 15:

```
ephone-template  5
 mlpp service-domain dsn identifier 000010 max-precedence 1
!
!
ephone  15
 mac-address 000F.9054.31BD
 ephone-template 5
 type 7960
 button  1:15
```

Related Commands

Command	Description
access-digit	Defines the access digit that phone users dial to request a precedence call.
ephone-template (ephone)	Applies an ephone template to an SCCP phone.
mlpp indication	Enables MLPP indication on an SCCP phone or analog FXS port.
mlpp preemption	Enables the preemption capability on an SCCP phone or analog FXS port.
service-domain	Sets the global MLPP domain name and number.

mobility (ephone-dn)

To enable the Mobility feature on an extension of an SCCP IP phone, use the **mobility** command in ephone-dn configuration mode. To disable mobility on the extension, use the **no** form of this command.

mobility

no mobility

Syntax Description

This command has no arguments or keywords.

Command Default

Mobility is not enabled for the extension.

Command Modes

Ephone-dn configuration (config-ephone-dn)

Command History

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

Usage Guidelines

This command enables the Mobility feature on the extension, which is required to enable the Single Number Reach (SNR) feature.

Examples

The following example shows extension 1001 is enabled for SNR. After a call rings at this number for 5 seconds, the call also rings at the remote number 4085550133. If the call is not answered after 20 seconds, the call no longer rings the phone and is forwarded to the voice-mail number 2001.

```
ephone-dn 10
 number 1001
 mobility
 snr 4085550133 delay 5 timeout 15 cfwd-noan 2001
```

Related Commands

Command	Description
number	Associates a telephone or extension number with an ephone-dn.
snr	Enables Single Number Reach on an extension of an SCCP IP phone.

Command	Description
softkeys connected	Modifies the order and type of soft keys that display on an IP phone during the connected call state.
softkeys idle	Modifies the order and type of soft keys that display on an IP phone during the idle call state.

mobility (voice register dn)

To enable the Mobility feature on an extension of a Cisco Unified SIP IP phone, use the **mobility** command in voice register dn configuration mode. To disable the Mobility feature on the extension, use the **no** form of this command.

mobility

no mobility

Syntax Description

This command has no arguments or keywords.

Command Default

The Mobility feature is not enabled on the extension of a Cisco Unified SIP IP phone.

Command Modes

Voice register dn configuration (config-register-dn)

Command History

Release	Modification
15.2(2)T	This command was introduced.

Usage Guidelines

Use the **mobility** command to enable a Cisco Unified SIP IP phone to receive calls on an extension, which is required to enable the Single Number Reach (SNR) feature.

Examples

The following example shows how to enable the Mobility feature on directory number 25:

```
Router(config)# voice register dn 25
Router(config-register-dn)# mobility
```

Related Commands

Command	Description
snr (voice register dn)	Enables the SNR feature on an extension of a Cisco Unified SIP IP phone.

mode cme

To enable the mode for configuring SIP phones in a Cisco Unified CallManager Express (Cisco Unified CME) system, use the **mode cme** command in voice register global configuration mode. To return to the default, use the **no** form of this command.

mode cme

no mode

Syntax Description

cme	Only valid keyword is **cme**. This mode determines the commands that are available to configure SIP phones.
esrst	Changes to the esrst mode and this mode determines the commands that are available to configure SIP phones.

Command Default

Default is SIP SRST mode.

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	This command was introduced.
15.3(3)M	Cisco CME 10.0	This command was modified to add the **esrst** mode.
Cisco IOS XE Everest 16.5.1b	Unified CME 11.7 Unified SRST 11.7	The behavior of **no** form of this command was modified, to clear all voice register pools and voice register dns, along with mode specific configurations.

Usage Guidelines

This command enables Cisco Unified CME on the router for configuration purposes. The router is enabled for Cisco SIP SRST by default. Enable this command before configuring SIP phones in Cisco Unified CME to ensure that all required commands are available.

For releases prior to Unified CME/SRST 11.7, the **no** form of this command clears only the mode specific configurations (For example, **source-address** under voice register global configuration, and user credentials configured under voice register pool configuration). From Cisco IOS XE Everest 16.5.1 (Unified CME/SRST

Release 11.7) onwards, the **no** form of this command clears all the voice register pools and voice register dns, along with mode specific configurations.

Examples

The following example shows how to set the mode to Cisco CME:

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

Related Commands

	Description
show voice register global	Displays all global configuration information associated with SIP phones.

moh (ephone-dn)

To enable music on hold (MOH) from an external live audio feed (standard line-level audio connection) connected directly to the router by an foreign office exchange (FXO) or an E&M analog voice port, use the **moh** command in ephone-dn configuration mode. To disable MOH from a live feed or to disable the outcall number or multicast capability, use the **no** form of this command.

moh [**out-call** *outcall-number*] [**ip** *ip-address* **port** *port-number* [**route** *ip-address*]]

no moh [**out-call** *outcall-number*| **ip**]

Syntax Description

out-call *outcall-number*	(Optional) Sets up a call to the outcall number in order to connect to the MOH feed. If this keyword is not used, the live feed is assumed to derive from an incoming call to the ephone-dn under which this command is used.
ip *ip-address*	(Optional) Indicates that this audio stream is to be used as a multicast source as well as the MOH source and specifies the destination IP address for multicast.
port *port-number*	(Optional) Specifies the media port for multicast. Range is from 2000 to 65535. Port 2000 is recommended because this port is already used for normal Real-Time Transport Protocol (RTP) media transmissions between IP phones and the Cisco CallManager Express router.
route *ip-address*	(Optional) Indicates the specific router interface on which to transmit the IP multicast packets. The default is that the MOH multicast stream is automatically output on the interface that corresponds to the address that was configured with the **ip source-address** command.

Command Default

MOH is disabled on an extension.

Command Modes

Ephone-dn configuration (config-ephone)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(11)YT	Cisco ITS 2.1	This command was introduced.

Cisco IOS Release	Cisco Product	Modification
12.2(15)T	Cisco ITS 2.1	This command was integrated into Cisco IOS Release 12.2(15)T.
12.2(15)ZJ	Cisco CME 3.0	The **ip**, **port**, and **route** keywords were added.
12.3(4)T	Cisco CME 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.

Usage Guidelines

This command takes the specified live-feed audio stream and uses it as MOH for a Cisco Unified CME system. The connection for the live-feed audio stream is established as an automatically connected voice call. If the **out-call** keyword is used, the type of connection can include VoIP calls if voice activity detection (VAD) is disabled. The typical operation is for the MOH ephone-dn to establish a call to a local router E&M voice port.

Connection via E&M is the recommended mechanism because it requires minimal external components. The E&M port must be placed in 4-wire operation, using E&M immediate signaling and with the **auto-cut-through** option enabled. You directly connect a line-level audio feed (standard audio jack) to pins 3 and 6 of an E&M RJ-45 connector. The E&M WAN interface card (WIC) has a built-in audio transformer that provides appropriate electrical isolation for the external audio source. (The audio connection on the E&M port does not require loop current.) The **signal immediate** and **auto-cut-through** commands disable E&M signaling on this voice port. A G.711 audio packet stream is generated by the digital signal processor (DSP) on the E&M port.

If you are using an FXO voice port for live-feed MOH instead of an E&M port, connect the MOH source to the FXO voice port. This connection requires an external adapter to supply normal telephone company (telco) battery voltage with the correct polarity to the tip-and-ring leads of the FXO port. The adapter must also provide transformer-based isolation between the external audio source and the tip-and-ring leads of the FXO port.

Music from a live feed is continuously fed into the MOH playout buffer instead of being read from an audio file in flash memory. There is typically a two-second delay with live-feed MOH.

If the **out-call** keyword is used, an outbound call to the MOH live-feed source is attempted (or reattempted) every 30 seconds until the call is connected to the ephone-dn (extension) that has been configured for MOH. Note that this ephone-dn is not associated with any physical phone.

If the **moh** (ephone-dn) command is used without any keywords or arguments, the ephone-dn will accept an incoming call and use the audio stream from the call as the source for the MOH stream, displacing any audio stream that is available from a flash file. To accept an incoming call, the ephone-dn must have an extension or phone number configured for it. A typical usage would be for an external H.323-based server device to call the ephone-dn to deliver an audio stream to the Cisco CME system. Normally, only a single ephone-dn would be configured like this. If there is more than one ephone configured to accept incoming calls for MOH, the first ephone-dn that is successfully connected to a call (incoming or outgoing) is the MOH source for the system.

MOH can also be derived from an audio file when you use the **moh** command in telephony-service configuration mode with the *filename* argument. There can be only one MOH stream at a time in a Cisco CME system, and if both an audio file and a live feed have been specified for the MOH stream, the router seeks the live feed from the **moh (ephone-dn)** command first. If the live feed is found, the router displaces the audio file source. If the live feed is not found or fails at any time, the router falls back to the audio file source that was specified in the **moh (telephony-service)** command.

If you use the **ip** keyword to specify a multicast address in this command, the audio stream is sent to the multicast address in addition to serving as the MOH source. Additionally, if you specify a different multicast address using the **multicast moh** command under telephony-service configuration mode, the audio stream is also sent to the multicast address that you named in that command. It is therefore possible to send the live-feed audio stream to MOH and to two different multicast addresses: the one that is directly configured under the **moh (ephone-dn)** command and the one that is indirectly configured under the **multicast moh** (telephony-service) command.

A related command, the **feed** command, provides the ability to multicast an audio stream that is not the MOH audio stream.

Note IP phones do not support multicast at 224.x.x.x addresses.

Examples

The following example establishes a live music-on-hold source by setting up a call to extension 7777:

```
Router(config)# ephone-dn 55
Router(config-ephone-dn)# moh out-call 7777
```

Related Commands

	Description
auto-cut-through	Enables call completion when an M-lead response is not provided.
ephone-dn	Enters ephone-dn configuration mode to set directory numbers and parameters for individual Cisco IP phone extensions.
feed	Enables multicast of an audio stream that is different from the music-on-hold audio stream.
ip source-address	Identifies the IP address and port through which IP phones communicate with a Cisco CME router.
moh (telephony-service)	Enables music on hold from an audio file.
multicast moh	Enables multicast of the music-on-hold audio stream.
signal	Specifies the type of signaling for a voice port.

moh (telephony-service)

To generate an audio stream from a file for music on hold (MOH) in a Cisco CallManager Express (Cisco CME) system, use the **moh** command in telephony-service configuration mode. To disable the MOH audio stream from this file, use the **no** form of this command.

moh *filename*

no moh

Syntax Description

filename	Name of the audio file to use for the MOH audio stream. The file must be copied to flash memory on the Cisco CME router.

Command Default

Tone on hold (a periodic beep is played to the caller)

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

This command enables MOH from .au and .wav format music files. MOH is played for G.711 callers and on-net VoIP and PSTN callers who are on hold in a Cisco CME system. Local callers within a Cisco CME system hear a repeating tone while they are on hold.

Audio files that are used for MOH must be copied to the Cisco CME router flash memory. A MOH file can be in .au or .wav file format; however, the file format must contain 8-bit 8-kHz data in A-law or mu-law data format. We recommend using a moh-file size greater than 100 KB.

If you want to replace or modify the audio file that is currently specified, you must first disable the MOH capability using the **no moh** command. The following example replaces file1 with file2:

```
Router(config-telephony)# moh file1
Router(config-telephony)# no moh
Router(config-telephony)# moh file2
```

If you specify a second file without first removing the original file, the MOH mechanism stops working and may require a router reboot to clear the problem.

A related command, the **moh** command in ephone-dn configuration mode, can be used to establish a MOH audio stream from a live feed. If you configure both commands, MOH falls back to playing music from the audio file if the live music feed is interrupted.

The **multicast moh** command allows you to use the MOH stream for a multicast broadcast.

When the **multicast moh** and **debug ephone moh** commands are both enabled, if you also use the **no moh** command, the debug output can be excessive and flood the console. Multicast MOH should be disabled before using the **no moh** command when the **debug ephone moh** command is enabled.

Examples

The following example enables music on hold and specifies a music file:

```
Router(config)# telephony-service
Router(config-telephony)# moh minuet.wav
```

Related Commands

	Description
debug ephone moh	Displays diagnostic information for music on hold.
moh (ephone-dn)	Enables music on hold from a live audio feed.
multicast moh	Enables multicast of the music-on-hold audio stream.

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

filename	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

voice moh-group	Enters voice moh-group configuration mode.
extension-range	Defines extension range for a clients calling a voice-moh-group.
moh	Enables music on hold from a flash audio file.
multicast moh	Enables multicast of the music-on-hold audio stream.

moh-file-buffer

To specify a MOH file buffer size, use the **moh-file-buffer** command in telephony-service 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

file-size	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

Telephony-service configuration (config-telephony-service)

Command History

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

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 180 KB assigned for future moh files under the telephony-service configuration mode.

```
!
!
!
telephony service
 max-conferences 8 gain -6
```

```
 transfer-system full-consult
 moh-file-buffer 180
!
!
line con 0
 exec-timeout 0 0
line aux 0
```

Related Commands

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

moh-group (ephone-dn)

To assign a MOH group to a directory number, use the **moh-group** command in ephone-dn configuration mode. To remove the MOH group, use the **no** form of this command.

moh-group *tag*

no moh-group *tag*

Syntax Description

tag	A unique number that identifies a MOH group. Range is from 1 to 5.

Command Default

No MOH group is configured.

Command Modes

Ephone-dn configuration (config-ephone-dn)

Command History

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

Usage Guidelines

Use this command to assign a MOH group to a directory number in ephone-dn configuration mode. Use the number tag from 1 to 5 to specify the MOH group that you want to assign to this directory number.

Examples

The following example shows how to assign a MOH group to a directory number under ephone-dn mode.

```
Router(config)# ephone-dn 98
Router(config-ephone-dn)#moh-group 1
Router(config-ephone-dn)#
```

Related Commands

description	Displays a brief description about a voice moh-group in use.
extension-range	Defines extension range for a clients calling a voice-moh-group.
moh	Enables music on hold from a flash audio feed.

multicast moh	Enables multicast of the music-on-hold audio stream.

mtp

To send voice packets from an IP phone to the Cisco Unified CME router, use the **mtp** command in ephone or ephone-template configuration mode. To return to the default, use the **no** form of this command.

mtp { **video-only | both** }

no mtp { **video-only | both** }

Syntax Description

video-only	Specifies that the video streams must be sent through the Cisco Unified CME route.
both	Specifies that both voice and video streams must be sent through the Cisco Unified CME route.

Command Default

If no arguments are given, only voice packets are sent to the router.

An IP phone in a call with another IP phone in the same Cisco Unified CME system sends voice and video packets directly to the other phone.

Command Modes

Ephone configuration (config-ephone) Ephone-template configuration (config-ephone-template)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.
15.1(4)M	Cisco Unified CME 8.6	Support for choosing video streams was added.

Usage Guidelines

Normally, media packets (RTP packets) that are sent between IP phones in the same Cisco Unified CME system go directly to the other phone and do not travel through the Cisco Unified CME router. When these packets are sent from a remote IP phone to another IP phone in the same Cisco Unified CME system, they may be obstructed by a firewall. The **mtp** command instructs a phone to always send its media packets to the Cisco Unified CME router, which acts as a proxy and forwards the packets to the destination. Firewalls can then be easily configured to pass the RTP packets because the router uses a specified UDP port for media packets. In this way, RTP packets from remote IP phones can be delivered to IP phones on the same system. The default is that this function is off and that RTP packets that are sent from one IP phone to another IP phone in the same Cisco Unified CME system go directly to the other phone.

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

Examples

The following example sends video and audio packets from ephone 437 to the Cisco Unified CME router for all calls:

```
ephone 437
 button 1:29
 mtp both
```

Related Commands

Command	Description
ephone-template (ephone)	Applies template to ephone being configured.

mtu (vpn-profile)

To enter the mtu value in bytes, use the **mtu** command in vpn-profile configuration mode.

mtu bytes

Syntax Description

bytes	Mtu value, in bytes. Range: 256 to 1406. Default: 1290.

Command Default

Default is 1290 bytes.

Command Modes

Vpn-profile configuration (conf-vpn-profile)

Command History

Cisco IOS Release	Cisco Product	Modification
15.1(3)T	Cisco Unified CME 8.5	This command was introduced.

Usage Guidelines

Use the mtu command to define a value in bytes.. The mtu value ranges from 256 to 1406 bytes. The defaul value is 1290 bytes.

Examples

The following example shows the mtu value set to 1300 bytes in vpn-profile 2:

```
Router# show run
!
!
!
!
voice service voip
 ip address trusted list
  ipv4 20.20.20.1
 vpn-group 1
  vpn-gateway 1 https://9.10.60.254/SSLVPNphone
  vpn-trustpoint 1 trustpoint cme_cert root
  vpn-hash-algorithm sha-1
 vpn-profile 1
  keepalive 50
  host-id-check disable
 vpn-profile 2
  mtu 1300
  password-persistent enable
  host-id-check enable
 sip
!
voice class media 10
 media flow-around
!
!
```

```
voice register global
 max-pool 10
```

Related Commands

Command	Description
vpn-profile	Defines a VPN-profile.

multicast moh

To use the music-on-hold (MOH) audio stream as a multicast source for Cisco Unified CME or for a MOH group, use the **multicast moh** command in telephony-service configuration mode or in voice-moh-group configuration modep. To disable multicast use of the MOH stream, use the **no** form of this command.

multicast moh *ip-address* **port** *port-number* [**route** *ip-address-list*]

no multicast moh

Syntax Description

ip-address	Specifies the destination IP address for multicast.
port *port-number*	Specifies the media port for multicast. Range is from 2000 to 65535. Port 2000 is recommended because this port is already used for normal Real-Time Transport Protocol (RTP) media transmissions between IP phones and the Cisco CME router.
route *ip-address-list*	(Optional) Indicates specific router interfaces over which to transmit the IP multicast packets. Up to four IP addresses can be listed, each separated from the other by a space. The default is that the MOH multicast stream is automatically output on the interfaces that correspond to the address that was configured with the **ip source-address** command.

Command Default

No multicast is enabled.

Command Modes

Telephony-service configuration (config-telephony) Voice-moh-group configuration (config-voice-moh-group)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(15)ZJ	Cisco CME 3.0	This command was introduced.
12.3(4)T	Cisco CME 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
15.0(1)XA	Cisco Unified CME 8.0	This command was modified. Multicast MOH was enabled under voice moh-group configuration mode.
15.1(1)T	Cisco Unified CME 8.0	This command was integrated into Cisco IOS Release 15.1(1)T.

Usage Guidelines

This command enables multicast of the audio stream that is designated for MOH in a Cisco CME system. Use this command in voice moh-group configuration mode to enable multicast of audio stream for a specific MOH group.

A related command, the **moh (ephone-dn)** command, creates a MOH audio stream from an external live feed and optionally enables multicast on that stream. These two commands can be used concurrently to provide multicast of a live-feed MOH audio stream to two different multicast addresses.

Another related command, the **feed** command, enables multicast of an audio stream that is not the MOH audio stream.

When the **multicast moh** and **debug ephone moh** commands are both enabled, if you also use the **no moh** command, the debug output can be excessive and flood the console. Multicast MOH should be disabled before using the **no moh** command when the **debug ephone moh** command is enabled.

Note IP phones do not support multicast at 224.x.x.x addresses.

Note Multicast for live feed is not support in MOH groups.

Examples

The following example enables multicast of the MOH audio stream at multicast address 239.10.16.4 and names two router interfaces over which to send the multicast packets.

Example 1: Multicast enabled for MOH audio stream under telephony service.

```
Router(config)# telephony-service
Router(config-telephony)# moh minuet.au
Router(config-telephony)# multicast moh 239.10.16.4 port 2000 route 10.10.29.17 10.10.29.33
```

Example 2: Multicast enabled for MOH audio stream under voice moh-group configuration mode.

```
Router(config)# voice-moh-group 1
Router(config-voice-moh-group)# moh minuet.au
Router(config-voice-moh-group)# multicast moh 239.10.16.4 port 2000 route 10.10.29.17
10.10.29.33
```

Related Commands

Command	Description
feed	Enables multicast of an audio stream that is not the music-on-hold audio stream.
ip source-address	Identifies the IP address and port through which IP phones communicate with a Cisco CME router.
moh (ephone-dn)	Enables music on hold from a live audio feed.
moh (telephony-service)	Enables music on hold from an audio file.

Command	Description
voice moh-group	Enters voice moh-group configuration mode

mwi (ephone-dn and ephone-dn-template)

To enable a specific Cisco Unified IP phone extension to receive message-waiting indication (MWI) notification from an external voice-messaging system, use the **mwi** command in ephone-dn or ephone-dn-template configuration mode. To disable this feature, use the **no** form of this command.

mwi {**off**| **on**| **on-off**}

no mwi {**off**| **on**| **on-off**}

Syntax Description

off	Sets a Cisco Unified IP phone extension to process MWI to OFF, using either the main or secondary phone number.
on	Sets a Cisco Unified IP phone extension to process MWI to ON, using either the main or secondary phone number.
on-off	Sets a Cisco Unified IP phone extension to process MWI to both ON and OFF, using either the main or secondary phone number.

Command Default

MWI notification is disabled on an extension.

Command Modes

Ephone-dn configuration (config-ephone-dn) Ephone-dn-template configuration (config-ephone-dn-template)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.4(4)XC	Cisco Unified CME 4.0	This command was made available in ephone-dn-template configuration mode.
12.4(9)T	Cisco Unified CME 4.0	This command in ephone-dn-template configuration mode was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

This command enables a Cisco Unified IP phone extension to receive MWI notification from an external voice-messaging system for all the Cisco Unified IP phones connected to the Cisco Unified CME router. This

extension is a “dummy” extension and is not associated with any physical phone. The external voice-messaging system is able to communicate MWI status by making telephone calls to the dummy extension number, with the MWI information embedded in either the called or calling-party IP phone number.

This command cannot be used unless the **number** command is already configured for this extension (ephone-dn).

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

Examples

The following example sets MWI to on:

```
Router(config)# ephone-dn 1
Router(config-ephone-dn) number 8000
Router(config-ephone-dn) mwi on
```

The following example sets MWI to off:

```
Router(config)# ephone-dn 2
Router(config-ephone-dn) number 8001
Router(config-ephone-dn) mwi off
```

The following example sets MWI to both on and off for the primary and secondary number, where the MWI information is embedded in the calling-party number. A call placed by the voice-mail system to 8002 turns on the MWI light for the extension number indicated by the calling-party number for the MWI call. A call placed to 8003 turns off the MWI light.

```
Router(config)# ephone-dn 3
Router(config-ephone-dn) number 8002 secondary 8003
Router(config-ephone-dn) mwi on-off
```

The following example sets MWI to both on and off for the primary and secondary number, where the MWI information is embedded in the called-party number. A call placed by the voice-mail system to 8000*5001*1 turns on the MWI light for extension 5001. A call placed to 8000*5001*2 turns off the MWI light.

```
Router(config)# ephone-dn 20
Router(config-ephone-dn) number 8000*....*1 secondary 8000*....*2
Router(config-ephone-dn) mwi on-off
```

The following example uses an ephone-dn-template to set MWI to on:

```
Router(config)# ephone-dn-template 4
Router(config-ephone-dn-template) mwi on
Router(config-ephone-dn-template)# exit
Router(config)# ephone-dn 1
Router(config-ephone-dn)# number 8000
Router(config-ephone-dn)# ephone-dn-template 4
```

Related Commands

	Description
ephone-dn-template (ephone-dn)	Applies template to ephone-dn being configured.
mwi expires	Sets the expiration timer for registration for either the client or the server.

	Description
mwi sip (ephone-dn)	Subscribes an extension in a Cisco Unified CME router to receive MWI notification from a SIP MWI server.
mwi sip-server (telephony-service)	Configures the IP address and port number for an external SIP-based MWI server.
number	Associates a telephone or extension number with an extension (ephone-dn) in a Cisco Unified CME system.

mwi (voice register dn)

To enable a specific Cisco IP phone extension (directory number) associated with a SIP phone to receive message-waiting indication (MWI) notification, use the **mwi** command in voice register dn configuration mode. To return to the default, use the **no** form of this command.

mwi

no mwi

Syntax Description

This command has no arguments or keywords.

Command Default

This command is disabled

Command Modes

Voice register dn configuration (config-register-dn)

Command History

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

Usage Guidelines

This command enables a particular extension on a SIP IP phone to receive MWI notification.

For Cisco Unified CME 4.1 and later versions, MWI requires that SIP phones must be configured with a directory number by using the **number** (voice register pool) command with the dn keyword; direct line numbers are not supported.

Examples

The following example shows how to enable MWI for a particular extension number associated with a SIP IP phone:

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

Related Commands

	Description
number (voice register pool)	Configures number patterns for a voice register pool.

mwi expires

To set the expiration timer for registration for the message-waiting indication (MWI) client or server, use the **mwi expires** command in telephony-service configuration mode. To disable the timer, use the **no** form of this command.

mwi expires *seconds*

no mwi expires *seconds*

Syntax Description

seconds	Expiration time, in seconds. Range is from 600 to 99999. Default is 86400 (24 hours).

Command Default

Default is 86400 seconds (24 hours).

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples

The following example sets the expiration timer to 1000 seconds:

```
Router(config)# telephony-service
Router(config-telephony)# mwi expires 1000
```

Related Commands

	Description
mwi relay (telephony-service)	Enables the Cisco CME router to relay MWI information to remote Cisco IP phones.
mwi sip-server (telephony-service)	Configures the IP address and port number for the external SIP-based MWI server.

mwi prefix

To specify a prefix for an extension that will receive unsolicited message-waiting indication (MWI) from an external SIP-based MWI server, use the **mwi prefix** command in telephony-service configuration mode. To return to the default, use the **no** form of this command.

mwi prefix *prefix-string*

no mwi prefix

Syntax Description

prefix-string	Digits at the beginning of a number that will be recognized as a prefix before a Cisco Unified CME extension number. The maximum prefix length is 32 digits.

Command Default

A prefix is not defined.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

Central voice-messaging servers that provide mailboxes for several Cisco Unified CME sites may use site codes or prefixes to distinguish among similarly numbered ranges of extensions at different sites. In Cisco Unified CME 4.0 and later versions, you can specify that your Cisco Unified CME system should accept unsolicited SIP Notify messages for message-waiting indication (MWI) that include a prefix string as a site identifier.

For example, an MWI message might indicate that the central mailbox number 5551234 has a voice message. In this example, the digits 555 are set as the prefix string or site identifier using the **mwi prefix** command. The local Cisco Unified CME system is able to convert 5551234 to 1234 and deliver the MWI to the correct phone. Without this prefix string manipulation, the system would reject an MWI indication for 5551234 as not matching the local Cisco Unified CME extension 1234.

Examples

The following example identifies the SIP server for MWI notification at the IP address 172.16.14.22. It states that the Cisco Unified CME system will accept unsolicited SIP Notify messages for known mailbox numbers (extension numbers) that are prefixed with the digits 555.

```
sip-ua
 mwi-server 172.16.14.22 unsolicited
telephony-service
 mwi prefix 555
```

Related Commands

	Description
mwi (ephone-dn and ephone-dn-template)	Configures specific Cisco Unified IP phone directory numbers to receive MWI notification from an external voice-mail system.
mwi-server	Configures MWI server parameters.
mwi sip (ephone-dn)	Subscribes an extension in a Cisco Unified CME router to receive MWI notification from a SIP MWI server.

mwi qsig

To enable Cisco Unified CME to interrogate a QSIG message center for the message-waiting indication (MWI) status of an IP phone extension, use the **mwi qsig** command in ephone-dn or ephone-dn-template configuration mode. To return to the default, use the **no** form of this command.

mwi qsig

no mwi qsig

Syntax Description

This command has no arguments or keywords.

Command Default

An extension is not subscribed to receive MWI using QSIG.

Command Modes

Ephone-dn configuration (config-ephone-dn) Ephone-dn-template configuration (config-ephone-dn-template)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

The **transfer-system** command must be used with the **full-consult** or **full-blind** keyword to enable H.450 call forwarding.

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

Examples

In the following example, a voice mail extension (7000) and a normal extension (7582) are defined. Calls are forwarded to voice mail when extension 7582 is busy or does not answer. The message-waiting indicator (MWI) on extension 7582's phone is subscribed to receive notifications from the QSIG message center.

```
ephone-dn 25
 number 7582
 mwi qsig
 call-forward busy 7000
 call-forward noan 7000 timeout 20
telephony-service
 voicemail 7000
 transfer-system full-consult
```

Related Commands

	Description
ephone-dn-template (ephone-dn)	Applies a template to ephone-dn being configured.
transfer-system	Specifies the call transfer method for Cisco Unified CME extensions.
voicemail	Defines the telephone number that is speed-dialed when the Messages button on a Cisco Unified IP phone is pressed.

mwi reg-e164

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 telephony-service 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

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.3(11)T7 12.4	Cisco CME 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:

```
telephony-service
 mwi reg-e164
```

Related Commands

	Description
mwi-server (SIP user-agent)	Specifies voice-mail server settings on a voice gateway or user agent (UA).

mwi relay

To enable a Cisco CallManager Express (Cisco CME) router to relay message-waiting indication (MWI) notification to remote Cisco IP phones, use the **mwi relay** command in telephony-service configuration mode. To disable MWI relay, use the **no** form of this command.

mwi relay

no mwi relay

Syntax Description

This command has no arguments or keywords.

Command Default

MWI relay is disabled.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced command.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T command.

Usage Guidelines

Use this command to enable the Cisco CME 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.

Examples

The following example enables MWI relay:

```
Router(config)# telephony-service
Router(config-telephony)# mwi relay
```

Related Commands

	Description
mwi expires	Sets the expiration timer for registration for the client or the server.
show mwi relay clients	Displays registration information for MWI relay clients.

mwi sip

To subscribe an extension in a Cisco Unified CME system to receive message-waiting indication (MWI) from a SIP-based MWI server, use the **mwi sip** command in ephone-dn or ephone-dn-template configuration mode. To remove the configuration, use the **no** form of this command.

mwi sip

no mwi sip

Syntax Description

This command has no arguments or keywords.

Command Default

An extension is not subscribed to receive MWI.

Command Modes

Ephone-dn configuration (config-ephone-dn) Ephone-dn-template configuration (config-ephone-dn-template)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.4(4)XC	Cisco Unified CME 4.0	This command was made available in ephone-dn-template configuration mode.
12.4(9)T	Cisco Unified CME 4.0	This command in ephone-dn-template configuration mode was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

Use this command to subscribe an extension in a Cisco Unified CME router to receive MWI notification from a SIP-based MWI server, and use the **mwi sip-server** command to specify the IP address and port number for the external SIP-based MWI server. This function integrates a Cisco Unified CME router with a SIP-protocol-based MWI service.

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

Examples

The following example subscribes extension 5001 to receive MWI notification from an external Session Initiation Protocol (SIP) MWI server and requests the SIP MWI server to send MWI notification messages through SIP to the Cisco Unified CME router for extension 5001:

```
Router(config) ephone-dn 1
```

```
Router(config-ephone-dn) number 5001
Router(config-ephone-dn) name MWI
Router(config-ephone-dn) mwi sip

Router(config) telephony-service
Router(config-telephony) mwi sip-server 172.30.0.5
```

Related Commands

	Description
ephone-dn	Enters ephone-dn configuration mode.
ephone-dn-template (ephone-dn)	Applies a template to an ephone-dn configuration.
mwi sip-server (telephony-service)	Configures the IP address and port number for the external SIP-based MWI server.
show mwi relay clients	Displays registration information for MWI relay clients.

mwi sip-server

To configure parameters associated with an external SIP-based message-waiting indication (MWI) server, use the **mwi sip-server** command in telephony-service configuration mode. To disable 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** [**prefix** *prefix-string*]]

no mwi sip-server *ip-address* [**transport tcp**| **transport udp**] [**port** *port-number*] **[reg-e164]** [**unsolicited** [**prefix** *prefix-string*]]

Syntax Description

ip-address	IP address of the MWI server.
transport tcp	(Optional) Selects TCP as the transport layer protocol. This is the default transport protocol.
transport udp	(Optional) Selects UDP as the transport layer protocol. The default if these keywords are not used is TCP.
port port-number	(Optional) Specifies port number for the MWI server. Range is from 2000 to 9999. Default is 5060 (SIP standard port).
reg-e164	(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.
unsolicited	(Optional) Sends SIP Notify message for MWI without any need to send a Subscribe message from the Cisco Unified CME router.
prefix *prefix-string*	(Optional) Allows the specified digits to be present before a recognized Cisco Unified CME extension number. The maximum prefix length is 32 digits.

Command Default

An external SIP-based MWI server is not defined.

Command Modes

Telephony-service configuration (config-telephony)

Command History

Cisco IOS Release	Cisco Product	Modification
12.2(2)XT	Cisco ITS 2.0	This command was introduced.
12.2(8)T	Cisco ITS 2.0	This command was integrated into Cisco IOS Release 12.2(8)T.
12.2(15)ZJ	Cisco CME 3.0	The **unsolicited** keyword was added.
12.3(4)T	Cisco CME 3.0	This command was integrated into Cisco IOS Release 12.3(4)T.
12.4(4)XC	Cisco Unified CME 4.0	The **prefix** *prefix-string* keyword-argument pair was added.
12.4(9)T	Cisco Unified CME 4.0	This command with the **prefix** *prefix-string* keyword-argument pair was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

Use this command to configure the IP address of an external SIP MWI server. This IP address is used with the **mwi sip** (ephone-dn) command to subscribe individual ephone-dn extension numbers to the notification list of the MWI SIP server. A SIP MWI client runs TCP by default.

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.

Central voice-messaging servers that provide mailboxes for several Cisco Unified CME sites may use site codes or prefixes to distinguish among similarly numbered ranges of extensions at different sites. In Cisco CME 3.2.3 and later versions, you can specify that your Cisco Unified CME system should accept unsolicited SIP Notify messages for message-waiting indication (MWI) that include a prefix string as a site identifier.

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) ephone-dn 1
Router(config-ephone-dn) number 5001
Router(config-ephone-dn) name Accounting
Router(config-ephone-dn) mwi sip
Router(config-ephone-dn) exit
Router(config) telephony-service
Router(config-telephony) mwi sip-server 192.168.0.5 transport udp
```

The following example identifies the SIP server for MWI notification at the IP address 172.16.14.22. It states that the Cisco Unified CME system will accept unsolicited SIP Notify messages that include the prefix 555 as a site identifier.

```
telephony-service
```

```
mwi sip-server 172.16.14.22 unsolicited prefix 555
```

Related Commands

	Description
mwi (ephone-dn)	Configures specific Cisco Unified IP phone directory numbers to receive MWI notification from an external voice-mail system.
mwi expires	Sets the expiration timer for registration for the client or the server.
mwi sip (ephone-dn)	Subscribes an extension in a Cisco Unified CME router to receive MWI notification from a SIP MWI server.
show mwi relay clients	Displays the registration information for MWI relay clients.

mwi stutter (voice register global)

To generate a stutter tone for message-waiting indication (MWI) in a Cisco CallManager Express (Cisco CME) system using SIP, use the **mwi stutter** command in voice register global configuration mode. To disable MWI stutter, use the **no** form of this command.

mwi stutter

no mwi stutter

Syntax Description

This command has no arguments or keywords.

Command Default

Stutter tone for MWI is disabled.

Command Modes

Voice register global configuration (config-register-global)

Command History

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

Examples

The following example shows how to enable MWI stutter:

```
Router(config)# voice register global
Router(config-register-global)# mwi stutter
```

Related Commands

	Description
mwi reg-e164	Registers full E.164 number to the MWI server in Cisco Unified CME and enables MWI.

mwi-line

To designate a line other than the primary line of an ephone to be associated with the ephone's message waiting indicator (MWI) lamp, use the **mwi-line** command in ephone configuration mode. To return to the default, use the **no** form of this command.

mwi-line *line-number*

no mwi-line

Syntax Description

line-number	Line number to be associated with the MWI lamp. Range is from 1 to 34.

Command Default

A phone's MWI lamp is lit only when there is a message waiting for the phone's primary line (line 1).

Command Modes

Ephone configuration (config-ephone)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(4)XC	Cisco Unified CME 4.0	This command was introduced.
12.4(9)T	Cisco Unified CME 4.0	This command was integrated into Cisco IOS Release 12.4(9)T.

Usage Guidelines

This command designates a phone line other than the primary line to activate the MWI lamp on the phone. When a message is waiting for an ephone-dn associated with the designated line, the MWI lamp is turned on. When the message is heard, the MWI lamp is turned off. For phone lines other than the line that is designated to receive MWI, an envelope icon is displayed next to them when there is a message waiting.

Note that a logical phone "line" is not the same as a phone button. A line is a button that has one or more ephone-dns assigned to it. A button that has no ephone-dns assigned to it does not count as a line.

In most cases, one ephone-dn is assigned to one button on an ephone. When you set the **mwi-line** command to that button, the MWI lamp is turned on when there is a message waiting for that ephone-dn. When you set the **mwi-line** command to a button with a more complex configuration, the following rules apply:

- When a button has a single ephone-dn with primary and secondary numbers, the MWI lamp is turned on only when there is a message waiting for the primary number.
- When a button has several ephone-dns overlaid on it, the MWI lamp is turned on only when there is a message waiting for the first number in the list of ephone-dns.

- When a button is an overflow button for an overlay button, the MWI lamp is not turned on for any extension that might overflow to this button. If you set the **mwi-line** command to this button, the command is ignored.

Examples

The following example enables MWI on ephone 18 for line 2 (button 2), which has overlaid ephone-dns. The MWI lamp on this phone will be lit only if there is a message waiting for extension 2021. Button 4 is unused. The line numbers in this example are as follows:

- Line 1—Button 1—Extension 2020
- Line 2—Button 2—Extension 2021, 2022, 2023, 2024, 2025
- Line 3—Button 3—Extension 2021, 2022, 2023, 2024, 2025 (rollover line)
- Button 4—Unused
- Line 4—Button 5—Extension 2026

```
ephone-dn 20
 number 2020
ephone-dn 21
 number 2021
ephone-dn 22
 number 2022
ephone-dn 23
 number 2023
ephone-dn 24
 number 2024
ephone-dn 25
 number 2025
ephone-dn 26
 number 2026
ephone 18
 button 1:20 2o21,22,23,24,25 3x2 5:26
 mwi-line 2
```

The following example enables MWI on ephone 17 for line 3 (extension 609). In this case, the button numbers do not match the line numbers because buttons 2 and 4 are not used.

- Line 1—Button 1—Extension 607
- Button 2—Unused
- Line 2—Button 3—Extension 608
- Button 4—Unused
- Line 3—Button 5—Extension 609

```
ephone-dn 17
 number 607
ephone-dn 18
 number 608
ephone-dn 19
 number 609
ephone 25
 button 1:17 3:18 5:19
 mwi-line 3
```

Related Commands

	Description
button	Associates ephone-dns with individual buttons on an SCCP phone and to specify line type or ring behavior.

mwi-type

To specify the type of message-waiting indication (MWI) notification that a directory number can receive and process, use the **mwi-type** command in ephone-dn or ephone-dn-template configuration mode. To disable this feature, use the **no** form of this command.

mwi-type {**visual| audio| both**}

no mwi-type {**visual| audio| both**}

Syntax Description

visual	Sets a directory number to process visual MWI, using either the main or secondary phone number.
audio	Sets a directory number to process audible MWI (AMWI), using either the main or secondary phone number.
both	Sets a directory number to process both visual and audible MWI, using either the main or secondary phone number.

Command Default

If MWI is enabled for a directory number, directory number will receive visual MWI.

Command Modes

Ephone-dn configuration (config-ephone-dn) Ephone-dn-template configuration (config-ephone-dn-template)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(6)XE	Cisco Unified CME 4.0(2)	This command was introduced.
12.4(4)XC4	Cisco Unified CME 4.0(3)	This command was introduced.
12.4(11)T	Cisco Unified CME 4.0(3)	This command was integrated into Cisco IOS Release 12.4(11)T.

Usage Guidelines

This command enables a directory number to receive audible, visual, or both audible and visual MWI notification from an external voice-messaging system. The external voice-messaging system is able to communicate MWI status by making telephone calls to the dummy extension, with the MWI information embedded in either the called or calling-party IP phone number.

Based on the capabilities of the IP phone and how the **mwi-type** command is configured, Message Waiting is communicated as follows:

- If the phone supports (visual) MWI and MWI is configured for the phone, Message Waiting light is lit.

- If the phone supports (visual) MWI only, Message Waiting light is lit regardless of the configuration.
- If the phone supports AMWI and AMWI is configured for the phone, stutter dial tone is sent to the phone when it goes off-hook.
- If the phone supports AMWI only and AMWI is configured, stutter dial tone is sent to the phone when it goes off hook regardless of the configuration.
- If a phone supports (visual) MWI and AMWI and both options are configured for the phone, the Message Waiting light is lit and a stutter dial tone is sent to the phone when it goes off-hook.

Before using this command:

- Create the directory number to be configured by using the **number**
- Enable MWI on this directory number by using the **mwi** command.

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

Examples

The following example shows how to enable AMWI on extension 8000, assuming that the phone to which this directory number is assigned supports AMWI. Otherwise, a call placed by the voice-mail system to 8001 turns on the MWI light for the extension number indicated by the calling-party number for the MWI call.

```
Router(config)# ephone-dn 1
Router(config-ephone-dn) number 8000
Router(config-ephone-dn) MWI on
Router(config-ephone-dn) MWI-type audible
```

The following example shows how to enable both audible and visual MWI. A call placed by the voice-mail system to 8001 turns on the MWI light for the extension number indicated by the calling-party number for the MWI call. When the phone user takes the phone off hook, they hear a stutter dial tone:

```
Router(config)# ephone-dn 2
Router(config-ephone-dn) number 8001
Router(config-ephone-dn) MWI on
Router(config-ephone-dn) MWI-type both
```

The following example shows how to use an ephone-dn-template to set MWI type:

```
Router(config)# ephone-dn-template 4
Router(config-ephone-dn-template) MWI-type both
Router(config-ephone-dn-template)# exit
Router(config)# ephone-dn 1
Router(config-ephone-dn)# number 8000
Router(config-ephone-dn)# ephone-dn-template 4
```

Related Commands

	Description
ephone-dn-template (ephone-dn)	Applies a template to an ephone-dn configuration.
mwi (ephone and ephone template)	Enables a directory number to receive MWI.
number	Associates a telephone or extension number with a directory number in a Cisco Unified CME system.