



Cisco IOS Voice Commands: E

This chapter contains commands to configure and maintain Cisco IOS voice applications. The commands are presented in alphabetical order. Some commands required for configuring voice may be found in other Cisco IOS command references. Use the command reference master index or search online to find these commands.

For detailed information on how to configure these applications and features, refer to the *Cisco IOS Voice Configuration Guide*.

echo suppressor

To enable echo suppression to reduce initial echo before the echo canceller converges, use the **echo suppressor** command in voice-port configuration mode. To disable echo suppression, use the **no** form of this command.

echo suppressor *seconds*

no echo suppressor

Syntax Description	<i>seconds</i>	Suppressor coverage, in seconds. Range is from 1 to 10. Default is 7.
Defaults	Disabled	
Command Modes	Voice-port configuration	
Command History	Release	Modification
	12.2(13)T	This command was introduced.
Usage Guidelines	This command is used only when the echo canceller is enabled. In case of double-talk in the first number of seconds, the code automatically disables the suppressor.	
Examples	<p>The following example shows echo suppression configured for a suppression coverage of 9 seconds on a Cisco 3620:</p> <pre>Router# configure terminal Enter configuration commands, one per line. End with CNTL/Z. Router(config)# voice-port 1/1:0 Router(config-voiceport)# echo suppressor 9</pre>	
Related Commands	Command	Description
	echo-cancel enable	Enables the cancellation of voice that is sent out and received on the same interface.

echo-cancel comfort-noise

To specify that background noise be generated, use the **echo-cancel comfort-noise** command in controller configuration mode. To disable this feature, use the no form of this command.

echo-cancel comfort-noise

no echo-cancel comfort-noise

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Controller configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced on the Cisco 3600 series.

Usage Guidelines Use the **echo-cancel comfort-noise** command to generate background noise to fill silent gaps during calls if voice activated dialing (VAD) is activated. If comfort noise is not enabled and VAD is enabled at the remote end of the connection, the user hears nothing or silence when the remote party is not speaking.

The configuration of comfort noise affects only the silence generated at the local interface; it does not affect the use of VAD on either end of the connection or the silence generated at the remote end of the connection.

For the OC-3/STM-1 ATM Circuit Emulation Service network module, echo cancellation must be enabled.

Examples The following example enables comfort noise on a T1 controller:

```
controller T1 0/0
echo-cancel enable
echo-cancel comfort-noise
```

Related Commands	Command	Description
	echo-cancel enable (controller)	Enables echo cancellation on a voice port.
	voice port	Specifies which port is used for voice traffic.

echo-cancel compensation

To set attenuation for loud signals, use the **echo-cancel compensation** command in controller configuration. To disable this feature, use the **no** form of this command.

echo-cancel compensation

no echo-cancel compensation

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Controller configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced on the Cisco 2600 series.

Usage Guidelines Use the **echo-cancel compensation** command to add attenuation control to the T1 or E1 controller. When this command is enabled, 6 decibels of attenuation are inserted if the signal level from the receive direction is loud. When loud signals are not received, the attenuation is removed.

For the OC-3/STM-1 ATM Circuit Emulation Service network module, echo cancellation must be enabled.

Examples The following example enables attenuation control on a T1 controller:

```
controller T1 0/0
 echo-cancel enable
 echo-cancel compensation
```

Related Commands	Command	Description
	echo-cancel enable (controller)	Enables echo cancellation on a voice port.
	voice port	Specifies which port is used for voice traffic.

echo-cancel coverage

To adjust the size of the echo canceller (EC) and to select the extended EC when the Cisco default EC is present, use the **echo-cancel coverage** command in voice-port configuration mode. To reset this command to the default value (64 ms), use the **no** form of this command.

echo-cancel coverage { 8 | 16 | 24 | 32 | 48 | 64 }

no echo-cancel coverage

Syntax Description	Value	Description
	8	Specifies an EC size of 8 milliseconds.
	16	Specifies an EC size of 16 milliseconds.
	24	Specifies an EC size of 24 milliseconds.
	32	Specifies an EC size of 32 milliseconds.
	48	Specifies an EC size of 48 milliseconds.
	64	Specifies an EC size of 64 milliseconds. This is the default.

Defaults 64 milliseconds

Command Modes Voice-port configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced on the Cisco 3600 series.
	11.3(1)MA	This command was implemented on the Cisco MC3810.
	12.0(5)XK	The command was modified to add the 8-millisecond option.
	12.0(5)XE	The command was implemented on the Cisco 7200 series.
	12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T.
	12.2(13)T	This command was modified to provide a new set of size options when the extended EC is configured. This command is supported on all T1 Digital Signal Processor (DSP) platforms.

Usage Guidelines Use the **echo-cancel coverage** command to adjust the coverage size of the EC. This command enables cancellation of voice that is sent out the interface and received on the same interface within the configured amount of time. If the local loop (the distance from the interface to the connected equipment that is producing the echo) is greater than this amount of time, the configured value of this command should be increased.

If you configure a greater value for this command, the EC takes longer to converge. In this case, you might hear a slight echo when the connection is initially set up. If the configured value for this command is too short, you might hear some echo for the duration of the call because the EC is not canceling the longer delay echoes.

There is no echo or echo cancellation on the network side (for example, the non-POTS side) of the connection.

**Note**

This command is valid only if the echo cancellation feature has been enabled. For more information, see the **echo-cancel enable** command.

Examples

The following example enables the extended echo cancellation feature and adjusts the size of the echo canceller to 16 milliseconds on the Cisco 3600 series:

```
voice-port 1/0/0
  echo-cancel coverage 16
```

The following example enables the extended echo cancellation feature and adjusts the size of the echo canceller to 16 milliseconds on the Cisco MC3810:

```
voice-port 1/1
  echo-cancel coverage 16
```

Related Commands

Command	Description
echo-cancel enable (controller)	Enables echo cancellation on a controller.
echo-cancel enable	Enables echo cancellation on a voice port.

echo-cancel enable

To enable the cancellation of voice that is sent out the interface and received back on the same interface, use the **echo-cancel enable** command in voice-port configuration mode. To disable echo cancellation, use the **no** form of this command.

echo-cancel enable

no echo-cancel enable

Syntax Description

This command has no arguments or keywords.

Defaults

The Cisco-proprietary G.165 echo canceller (EC) is enabled with the echo suppressor turned off.

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)T	This command was introduced on the Cisco 3600 series.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T and implemented on the Cisco 7200 series and Cisco 7500 series. This command is supported on all TI Digital Signal Processor (DSP) platforms.

Usage Guidelines

The **echo-cancel enable** command enables cancellation of voice that is sent out the interface and received back on the same interface; sound that is received back in this manner is perceived by the listener as an echo. Disabling echo cancellation might cause the remote side of a connection to hear an echo. Because echo cancellation is an invasive process that can minimally degrade voice quality, this command should be disabled if it is not needed.

Typically a hybrid circuit can provide greater than 6 decibels (dB) echo return loss (ERL), so the extended EC is configured to handle 6 dB worst case by default. However, if a measurement shows that a circuit can provide only 6 dB ERL or less, the extended EC can be configured to use this lower rate.

The Cisco G.165 EC is enabled by default with the echo suppressor turned off. The echo suppressor can be turned on only when the default Cisco G.165 EC is used. The **echo suppressor** command used with the Cisco default EC is still visible when the extended EC is selected, but it does not do anything.

The **echo-cancel enable** command does not affect the echo heard by the user on the analog side of the connection.

There is no echo path for a 4-wire receive and transmit interface (also called ear and mouth and abbreviated as E&M). The echo canceller should be disabled for that interface type.



Note

This command is valid only when the **echo-cancel coverage** command has been configured.

Examples

The following example enables the extended echo cancellation feature and adjusts the size of the echo canceller to 16 milliseconds on the Cisco 3600 series:

```
voice-port 1/0:0
  echo-cancel enable
  echo-cancel coverage 16
```

The following example enables the extended echo cancellation feature and adjusts the size of the echo canceller to 16 milliseconds on the Cisco MC3810:

```
voice-port 1/1
  echo-cancel enable
  echo-cancel coverage 16
```

The following example enables the extended echo cancellation feature on the Cisco 1700 series or Cisco ICS7750 in global configuration mode:

```
voice echo-cancel enable
```

Related Commands

Command	Description
echo suppressor	Enables echo suppression to reduce initial echo before the echo canceller converges.
echo-cancel coverage	Specifies the amount of coverage for echo cancellation.
echo-cancel enable (controller)	Enables echo cancellation on a controller.
non-linear	Enables nonlinear processing in the echo canceler.

echo-cancel enable (controller)

To enable the echo cancel feature, use the **echo-cancel enable** command in controller configuration mode. To disable this feature, use the **no** form of this command.

echo-cancel enable

no echo-cancel enable

Syntax Description This command has no arguments or keywords.

Defaults Enabled for all interface types

Command Modes Controller configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced for the OC-3/STM-1 ATM Circuit Emulation Service network module on the Cisco 3600 series.

Usage Guidelines The **echo-cancel enable** command enables cancellation of voice that is sent out of the interface and received back on the same interface. Disabling echo cancellation might cause the remote side of a connection to hear an echo. Because echo cancellation is an invasive process that can minimally degrade voice quality, this command should be disabled if it is not needed.

The **echo-cancel enable** command does not affect the echo heard by the user on the analog side of the connection.



Note This command is valid only if the **echo-cancel coverage** command has been configured.

The following example enables the echo cancel feature on a T1 controller:

```
controller T1 0/0
 echo-cancel enable
 echo-cancel coverage 32
```

Related Commands	Command	Description
	echo-cancel coverage	Specifies the amount of coverage for echo cancellation.
	echo-cancel enable	Enables echo cancellation on a voice port.
	non-linear	Enables nonlinear processing in the echo canceler.
	voice port	Configures the voice port.

echo-cancel erl worst-case

To determine worst-case Echo Return Loss (ERL) in decibels (dB), use the **echo-cancel erl worst-case** command in voice-port configuration mode. To disable the command, use the **no** form.

echo-cancel erl worst-case {6 | 3 | 0}

no echo-cancel erl worst-case {6 | 3 | 0}

Syntax Description	6 3 0	Values of 6, 3, or 0 dB ERL in the extended echo canceller (EC). The default is 6.
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Defaults	Enabled at 6 dB when the extended G.168 EC is used
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Command Modes	Voice-port configuration
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Command History	Release	Modification
	12.2(13)T	This command was introduced.

Usage Guidelines	This command is used only when the extended EC is present and is not supported with the Cisco proprietary-G.165 EC. This command predicts the worst-case ERL that the EC might encounter.
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Examples	The following example shows a worst-case ERL of 3:
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```
Router(config-voiceport)# echo-cancel erl worst-case 3
Router(config-voiceport)# ^Z
Router#
```

To check the configuration, enter the **show voice port** command in privileged EXEC mode:

```
Router# show voice port
.
.
.
Echo Cancel worst case ERL is set to 6 dB
Playout-delay Mode is set to adaptive
.
.
.
```

Related Commands	Command	Description
	echo-cancel enable	Enables the cancellation of voice that is sent out and received on the same interface.

echo-cancel loopback

To place the echo cancellation processor in loopback mode, use the **echo-cancel loopback** command in controller configuration mode. To disable loopback of the echo cancellation processor, use the **no** form of this command.

echo-cancel loopback

no echo-cancel loopback

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Controller configuration

Command History	Release	Modification
	12.1(2)T	This command was introduced on the Cisco 3600 series.

Usage Guidelines Use an **echo-cancel loopback** test on lines to detect and distinguish equipment malfunctions caused by either the line or the interface. If correct echo cancellation is not possible when an interface is in loopback mode, the interface is the source of the problem.

Examples On a Cisco 3600 series routers router, the following example sets up echo cancellation loopback diagnostics:

```
controller T1 0/0
echo-cancel enable
echo-cancel coverage 32
echo-cancel loopback
```

Related Commands	Command	Description
	echo-cancel enable (controller)	Enables echo cancellation on a controller.

element

6 3 0	Values of 0, 3, or 6 dB ERL in the extended echo canceller (EC). The default is 6.
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To define component elements of local or remote clusters, use the **element** command in gatekeeper configuration mode. To disable component elements of local or remote clusters, use the **no** form of this command.

element *gatekeeper-name ip-address [port]*

no element *gatekeeper-name ip-address [port]*

Syntax Description		
<i>gatekeeper-name</i>	Name of the gatekeeper component to be added to the local or remote cluster.	
<i>ip-address</i>	IP address of the gatekeeper to be added to the local or remote cluster.	
<i>port</i>	(Optional) Registration, Admission, and Status (RAS) signaling port number for the remote zone. Range is from 1 to 65535. Default is the well-known RAS port number 1719.	

Defaults No default behavior or values

Command Modes Gatekeeper configuration

Command History	Release	Modification
	12.1(5)XM	This command was introduced.
	12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.
	12.2(2)XB1	This command was implemented on the Cisco AS5850.

Examples The following example places the GenevaGK gatekeeper into the specified local or remote cluster:

```
element GenevaGK 172.16.204.158 1719
```

Related Commands	Command	Description
	zone cluster local	Defines a local grouping of gatekeepers, including the gatekeeper that you are configuring.
	zone cluster remote	Defines a remote grouping of gatekeepers, including the gatekeeper that you are configuring.

emulate cisco h323 bandwidth

To instruct the H.323 gateway to use H.323 version 2 behavior for bandwidth management, use the **emulate cisco h323 bandwidth** command in gateway configuration mode. To instruct the gateway to use H.323 version 3 behavior for bandwidth management, use the **no** form of the command.

emulate cisco h323 bandwidth

no emulate cisco h323 bandwidth

Syntax Description This command has no keywords or arguments.

Defaults No default behaviors or values

Command Modes Gateway configuration

Command History	Release	Modification
	12.2(2)XA	This command was introduced.
	12.2(4)T	This command was integrated into Cisco IOS Release 12.2(4)T.
	12.2(2)XB1	This command was implemented on the Cisco AS5850.
	12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.

Usage Guidelines Prior to Cisco IOS Release 12.2(2)XA, gateway calls were always reported to require a bandwidth of 64 kbps, the unidirectional bandwidth for a Cisco G.711 codec. If the endpoints in the call chose to use a more efficient codec, this was not reported to the Cisco gatekeeper.

In the version of the Cisco H.323 gateway in Cisco IOS Release 12.2(2)XA or later (which conforms with H.323 version 3), the reported bandwidth is bidirectional. Initially, 128 kbps is reserved. If the endpoints in the call select a more efficient codec, the Cisco gatekeeper is notified of the bandwidth change.

For backward compatibility, the **emulate cisco h323 bandwidth** command allows devices running Cisco IOS Release 12.2(2)XA and later to conform to the H.323 version 2 bandwidth reporting implementation.

Examples The following example shows that the router emulates the behavior of a Cisco H.323 Version 2 gateway.

```
Router(config-gateway)# emulate cisco h323 bandwidth
```

Related Commands	Command	Description
	bandwidth	Specifies the maximum aggregate bandwidth for H.323 traffic from a zone to another zone, within a zone, or for a session in a zone.
	bandwidth remote	Specifies the total bandwidth for H.323 traffic between this gatekeeper and any other gatekeeper.
	gateway	Enables gateway configuration commands.

encapsulation atm-ces

To enable circuit emulation service (CES) ATM encapsulation on the Cisco MC3810 multiservice concentrator, use the **encapsulation atm-ces** command in interface configuration mode. To disable CES ATM encapsulation, use the **no** form of this command.

encapsulation atm-ces

no encapsulation atm-ces

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Interface configuration

Command History	Release	Modification
	11.3(1)MA	This command was introduced on the Cisco MC3810.
	12.0	This command was integrated into Cisco IOS Release 12.0.

Usage Guidelines This command applies to ATM configuration on the Cisco MC3810 multiservice concentrator. This command is supported only on serial ports 0 and 1.

Examples The following example enables CES ATM encapsulation on serial port 0 on the Cisco MC3810 multiservice concentrator:

```
interface serial 0
 encapsulation atm-ces
```

Related Commands	Command	Description
	ces cell-loss-integration-period	Sets the CES cell-loss integration period on the Cisco MC3810.
	ces clockmode synchronous	Configures the ATM CES synchronous clock mode on the Cisco MC3810.
	ces connect	Maps the CES service to an ATM PVC on the Cisco MC3810.
	ces initial-delay	Configures the size of the receive buffer of a CES circuit on the Cisco MC3810.
	ces max-buf-size	Configures the send buffer of a CES circuit on the Cisco MC3810.
	ces partial-fill	Configures the number of user octets per cell for the ATM CES on the Cisco MC3810.
	ces service	Configures the ATM CES type on the Cisco MC3810.

encapsulation ftc-trunk

This command was removed in Cisco IOS Release 12.1(2)T and is no longer supported in Cisco IOS Release 12.2.

encryption

To set the algorithm to be negotiated with the provider, use the **encryption** command in settlement configuration mode. To reset to the default encryption method, use the **no** form of this command.

```
encryption { des-cbc-sha | des40-cbc-sha | dh-des-cbc-sha | dh-des40-cbc-sha | null-md5 |
             null-sha | all }
```

```
no encryption { des-cbc-sha | des40-cbc-sha | dh-des-cbc-sha | dh-des40-cbc-sha | null-md5 |
               null-sha | all }
```

Syntax Description	Encryption type
des-cbc-sha	Encryption type ssl_rsa_with_des_cbc_sha cipher suite.
des40-cbc-sha	Encryption type ssl_rsa_export_with_des40_cbc_sha cipher suite.
dh-des-cbc-sha	Encryption type ssl_dh_rsa_with_des_cbc_sha cipher suite.
dh-des40-cbc-sha	Encryption type ssl_dh_rsa_export_with_des40_cbc_sha cipher suite.
null-md5	Encryption type ssl_rsa_with_null_md5 cipher suite.
null-sha	Encryption type ssl_rsa_with_null_sha cipher suite.
all	All encryption methods are used in the Secure Socket Layer (SSL).

Defaults

The default encryption method is **all**. If none of the encryption methods is configured, the system uses all of the encryption methods in the SSL session negotiation.

Command Modes

Settlement configuration

Command History

Release	Modification
12.0(4)XH1	This command was introduced on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco AS5300.
12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T.

Usage Guidelines

For Cisco IOS Release 12.0(4)XH1, only one encryption method is allowed for each provider.

Examples

The following example sets the algorithm to be negotiated with the provider, using the **encryption** command:

```
settlement 0
  encryption des-cbc-sha
```

Related Commands

Command	Description
connection-timeout	Sets the connection timeout.
customer-id	Sets the customer identification.
device-id	Sets the device identification.
max-connection	Sets the maximum number of simultaneous connections.
response-timeout	Sets the response timeout.
retry-delay	Sets the retry delay.
retry-limit	Sets the connection retry limit.
session-timeout	Sets the session timeout.
settlement	Enters settlement configuration mode.
show settlement	Displays the configuration for all settlement server transactions.
shutdown	Disables the settlement provider.
type	Specifies the provider type.
url	Specifies the ISP address.

endpoint alt-ep collect

To configure the collection of alternate routes to endpoints, use the **endpoint alt-ep collect** command in gatekeeper configuration mode. To disable alternate route collection, use the **no** form of this command.

endpoint alt-ep collect *value* [**distribute**]

no endpoint alt-ep collect

Syntax Description	<i>value</i>	Number of alternate routes to endpoints for the gatekeeper to collect before ending the collection process and sending the Location Confirmation (LCF) message to the requesting endpoint. Range for the <i>value</i> argument is from 1 to 20. The default is 0, which indicates that alternate route collection is not enabled.
	distribute	(Optional) Causes the gatekeeper to include alternate routes from as many LCF messages as possible in the consolidated list. Use of this keyword allows the gatekeeper to give fairness to the information of alternate routes present in various LCF messages.
	Note	Identical alternate endpoints are removed from the list. That is, if an alternate endpoint received in an LCF message has an identical IP address or trunk group label or carrier ID as any alternate endpoints received in previous LCF messages, the previous duplicate alternate endpoints are removed from the consolidated list.

Defaults The default value for the *value* argument is 0, which indicates that alternate route collection is not enabled.

Command Modes Gatekeeper configuration

Command History	Release	Modification
	12.2(2)XA	This command was introduced.
	12.2(4)T	This command was integrated into Cisco IOS Release 12.2(4)T.
	12.2(8)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco 7200 series. Support for the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 is not included in this release.
	12.2(11)T	Duplicate alternate endpoints received in an LCF message were removed from the consolidated list of endpoints. This command is supported on the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 in this release.

Usage Guidelines Use this command to force the gatekeeper to collect a specified number of alternate routes to endpoints and to create a consolidated list of those alternate routes to report back to the requesting endpoint.

Examples

The following example shows that 15 alternate routes to endpoints should be collected:

```
Router(config-gk)# endpoint alt-ep collect 15
```

Related Commands

Command	Description
endpoint alt-ep h323id	Configures an alternate endpoint on a gatekeeper, including endpoint ID, IP address, port, and trunk group label or carrier-ID information.
show gatekeeper endpoints alternates	Displays information about alternate endpoints.

endpoint alt-ep h323id

To configure alternate endpoints, use the **endpoint alt-ep h323id** command in gatekeeper configuration mode. To disable alternate endpoints, use the **no** form of this command.

endpoint alt-ep h323id *h323-id ip-address [port-number] [carrier-id carrier-name]*

no endpoint alt-ep h323id

Syntax Description		
<i>h323-id</i>		H.323 name (ID) of the endpoint for which an alternate address is being supplied. This ID is used by a gateway when the gateway communicates with the gatekeeper. Usually, this H.323 ID is the name given to the gateway, with the gatekeeper domain name appended to the end.
<i>ip-address</i>		IP address of an alternate for this endpoint.
<i>port-number</i>		(Optional) Port number associated with the address of the alternate. Default is 1720.
carrier-id <i>carrier-name</i>		(Optional) Trunk group label or carrier ID of the alternate endpoint. It may be added in addition to the IP address of the alternate endpoint. The <i>carrier-name</i> argument is the name of the trunk group label or circuit ID.

Defaults The default port number is 1720.

Command Modes Gatekeeper configuration

Command History	Release	Modification
	12.1(5)XM	This command was introduced.
	12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.
	12.2(2)XB1	This command was implemented on the Cisco AS5850.
	12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T and the carrier-id keyword and <i>carrier-name</i> argument were added.

Usage Guidelines This command defines the IP address for an alternate endpoint for the primary endpoint identified by its H.323 ID. The IP address is returned in the alternate endpoint field whenever the primary endpoint is returned in an Admission Confirmation (ACF) or Location Confirmation (LCF) message. The alternate endpoint provides an alternate address to which a call can be placed if a call to the primary endpoint fails.

This command provides a failover mechanism if a gateway becomes disabled for a period of time before the gatekeeper becomes aware of the problem. After receiving an ACF message from the gatekeeper with an alternate endpoint list, the Cisco gateway may attempt to use an alternate address if a SETUP message results in no reply from the destination. This command causes the alternate endpoints specified in the *h323-id* argument to be sent in all subsequent ACF and LCF messages. Gatekeepers that support the **endpoint alt-ep h323id** command can also send alternate endpoint information in Registration, Admissions, and Status (RAS) messages. The gatekeeper accepts IP, port call signal address, and trunk

group ID and carrier ID information in endpoint Registration Request (RRQ) messages. The gatekeeper list of alternates for a given endpoint includes the configured alternates and the alternates received in RRQ messages from that endpoint and any alternate endpoints received in incoming RAS LCF messages.

Examples

The following example shows that the endpoint at 172.16.53.15 1719 has been configured as an alternate for “GW10”. There are no carrier IDs:

```
endpoint alt-ep h323id GW10 172.16.53.15 1719
```

The following example shows that an alternate endpoint list with different carrier IDs (CARRIER_ABC, CARRIER_DEF, and CARRIER_GHI) has been configured for “gwid”:

```
endpoint alt-ep h323id gwid 1.1.1.1 carrier-id CARRIER_ABC
endpoint alt-ep h323id gwid 2.2.2.2 carrier-id CARRIER_DEF
endpoint alt-ep h323id gwid 1.1.1.1 carrier-id CARRIER_GHI
```

Related Commands

Command	Description
show gatekeeper endpoints	Displays information about alternate endpoints.

endpoint circuit-id h323id

To associate a circuit with a non-Cisco endpoint or on using a Cisco IOS Release older than that on the gatekeeper, use the **endpoint circuit-id h323id** command in gatekeeper configuration mode. To delete the association, use the **no** form of this command.

endpoint circuit-id h323id *endpoint-h323id circuit-id* [**max-calls number**]

no endpoint circuit-id h323id *endpoint-h323id descriptor* [**max-calls number**]

Syntax Description	Parameter	Description
	<i>endpoint-h323id</i>	ID of the H.323 endpoint.
	<i>circuit-id</i>	Circuit assigned to the H.323 endpoint.
	max-calls number	(Optional) Maximum number of calls that this endpoint can handle. Range is from 1 to 10000. There is no default.

Defaults No default behavior or values

Command Modes Gatekeeper configuration

Command History	Release	Modification
	12.2(11)T	This command was introduced.

Usage Guidelines The **endpoint circuit-id h323id** command allows the gatekeeper and GKTMP server application to work with Cisco gateways that are running non-Cisco gateways or Cisco IOS versions that cannot identify incoming circuits. This command permits only one circuit to be associated with the endpoint.

Examples The following example associates a non-Cisco endpoint **first** with a circuit **westcoast**, and assigns a maximum of 2750 calls to the endpoint:

```
Router(config)# gatekeeper
Router(config-gk)# endpoint circuit-id h323-id first westcoast maxcalls 2750
```

Related Commands	Command	Description
	show gatekeeper endpoint circuits	Displays information about all registered endpoints for a gatekeeper.

endpoint max-calls h323id

To set the maximum number of calls that are allowed for an endpoint, use the **endpoint max-calls h323id** command in gatekeeper configuration mode. To disable the number of calls that are set, use the **no** form of the command.

endpoint max-calls h323id *endpoint-h323id maximum-number-of-calls*

no endpoint max-calls h323id

Syntax Description	<i>endpoint-h323id</i>	H.323 ID of the endpoint.
	<i>maximum-number-of-calls</i>	Maximum number of calls that the endpoint can handle. The value is a number from 1 through 100000.

Defaults No default behavior or values

Command Modes Gatekeeper configuration

Command History	Release	Modifications
	12.3(1)	This command was introduced.
	12.3(10)	This command was modified to reject the limit set by the endpoints.

Usage Guidelines You must configure the **endpoint resource-threshold** command and the **arj reject-resource-low** command to start resource monitoring on a gatekeeper before you can configure the **endpoint max-calls h323id** command. The **endpoint resource-threshold** command sets the call capacity threshold of a gateway in the gatekeeper. The **arj reject-resource-low** command allows the endpoint to reject the limit of automatic repeat request message-packet (ARQs) when the endpoint reaches its configured maximum number of calls.

Examples The following example shows that the maximum number of calls that GW-1 can handle is 1000.

```
gatekeeper
 endpoint max-calls h323id GW-1 1000
```

Related Commands	Command	Description
	arj reject-resource-low	Enables the gatekeeper to send an admission reject message-packet (ARJ) to the requesting gateway if destination resources are low.
	endpoint resource-threshold	Sets the call capacity threshold of a gateway in the gatekeeper.

endpoint naming

To customize the T3 endpoint naming convention on a per-MGCP-profile basis, use the **endpoint naming** command in MGCP profile configuration mode. To disable endpoint naming, use the **no** form of this command.

endpoint naming {t1 | t3}

no endpoint naming

Syntax Description	t1	Flat-T3-endpoint naming convention.
	t3	Hierarchical-T3-endpoint naming convention.

Defaults t1

Command Modes MGCP profile configuration

Command History	Release	Modification
	12.2(11)T	This command was introduced.

Usage Guidelines The option to select between a flat-endpoint naming convention and a hierarchical-T3-endpoint naming convention gives call agents flexibility without enforcing one naming convention. Signaling, backhauling, and trunks using SS7 are supported. T3 naming conventions on XCC signaling types, SS7, and ISDN are not supported.

Examples The following example shows the T3 endpoint naming convention on an MGCP profile:

```
Router# configure terminal
Router(config)# mgcp profile default
Router(config-mgcp-profile)# endpoint naming t3
Router(config-mgcp-profile)# end
```

Related Commands	Command	Description
	show mgcp	Displays MGCP configuration information.

endpoint resource-threshold

To set a gateway's call capacity thresholds in the gatekeeper, use the **endpoint resource threshold** command in gatekeeper configuration mode. To delete the thresholds, use the **no** form of this command.

endpoint resource-threshold [*onset high-water-mark* | **abatement** *low-water-mark*]

no endpoint resource-threshold [*onset high-water-mark*] [**abatement** *low-water-mark*]

Syntax Description	onset <i>high-water-mark</i>	(Optional) Maximum call volume usage for the gateway, as a percent. Range is from 1 to 99. The default is 90.
	abatement <i>low-water-mark</i>	(Optional) Minimum call volume usage for the gateway, as a percent. Range is from 1 to 99. The default is 70.

Defaults	High-water-mark: 90 percent
	Low-water-mark: 70 percent

Command Modes	Gatekeeper configuration
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Command History	Release	Modification
		12.2(11)T

Usage Guidelines

The gatekeeper monitors the call volume in each of its gateways. If the call capacity usage in a particular gateway exceeds the high-water-mark threshold, the gatekeeper stops sending calls to that gateway. When the gateway's active call volume falls below the low-water-mark threshold, the gatekeeper resumes sending new calls to the gateway. These thresholds are global values and affect all gateways registered with a given gatekeeper.

If neither threshold is set, the gatekeeper uses the default values.

Examples

The following example sets the high and low call-volume thresholds for all of its gateways:

```
Router(config)# gatekeeper
Router(config-gk)# endpoint resource-threshold onset 85 abatement 65
```

Related Commands	Command	Description
		show gatekeeper endpoint circuits

endpoint ttl

To enable the gatekeeper to assign a time-to-live (TTL) value to the endpoint when it registers with the gatekeeper, use the **endpoint ttl** command in gatekeeper configuration mode. To disable the TTL value, use the **no** form of this command.

endpoint ttl *time-to-live*

no endpoint ttl *time-to-live*

Syntax Description	<i>time-to-live</i>	TTL value, in seconds. Range is from 60 to 3600. The default is 1800.
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Defaults	1800 seconds
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Command Modes	Gatekeeper configuration
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Command History	Release	Modification
	12.1(5)XM	This command was introduced.
12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.	
12.2(2)XB1	This command was implemented on the Cisco AS5850.	

Usage Guidelines	This command specifies endpoint registration. Use this command to set the interval that the gatekeeper requires of an endpoint that does not supply its own value. Use a lower value to make the gatekeeper clear the registration of an unresponsive endpoint more quickly.
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When an endpoint registers with the gatekeeper and does not provide a TTL value, the gatekeeper assigns this value as the time to live. When the TTL expires, the endpoint becomes subject to removal. However, the endpoint is queried a few times in an attempt to communicate with the device. If the device appears active, the registration does not expire. If the device is unresponsive after a few communication attempts, the endpoint is removed.

Examples	The following example enables a time to live value of 60 seconds:
-----------------	-------------------------------------------------------------------

```
endpoint ttl 60
```

Related Commands	Command	Description
	timer cluster-element announce	Specifies the announcement period.
	timer lrq seq delay	Specifies the timer for sequential LRQs.
	timer lrq window	Specifies the window timer for LRQs.

ephone

To enter the Ethernet phone (ephone) configuration mode for an IP phone, use the **ephone** command in global configuration mode. To disable the ephone and remove the IP phone configuration, use the **no** form of this command.

ephone *tag*

no ephone *tag*

Syntax Description	<i>tag</i>	Number of Ethernet phone tag. The maximum number is platform dependent:
		<ul style="list-style-type: none"> • Cisco 1750 routers—24 Cisco IP phones • Cisco 1751 routers—24 Cisco IP phones • Cisco 2600 series—24 Cisco IP phones • Cisco 3620 routers—24 Cisco IP phones • Cisco IAD2420series—24 Cisco IP phones • Cisco 3640 routers—48 Cisco IP phones • Cisco 3660 routers—48 Cisco IP phones • Cisco 3725 routers—48 Cisco IP phones • Cisco 3745 routers—48 Cisco IP phones

Defaults	No Cisco IP phone is configured

Command Modes	Global configuration

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

Examples	The following example shows how to enter ephone configuration mode for phone 4:
	<pre>Router(config)# ephone 4 Router(config-ephone)#</pre>

Related Commands

Command	Description
button	Assigns a button number to the Cisco IP phone directory number.
ephone-dn	Enters ephone-dn configuration mode.
mac-address	Configures the MAC address of a Cisco IP phone.
max-dn	Sets the maximum number of directory numbers that can be supported by a router.
max-ephones	Configures the maximum number of Cisco IP phones that can be supported by a router.
paging-dn	Sets an audio paging directory number for each Cisco IP phone.
reset	Resets the Cisco IP phones in the ephone configuration mode.
speed-dial	Sets speed-dial buttons on a Cisco IP phone.
telephony-service	Enables Cisco IOS Telephony Service and enters telephony-service configuration mode.
username	Assigns a phone user login account username and password to permit user login to the Cisco IOS Telephony Service router through a web browser.
vm-device-id	Defines a voice-mail ID string.

ephone-dn

To configure directory numbers for Cisco IP phone lines, voice-mail ports, and the message waiting indicator (MWI) code, and to enter ephone-dn configuration mode, use the **ephone-dn** command in global configuration mode. To delete the directory numbers for the Cisco IP phone lines, use the **no** form of this command.

ephone-dn *dn-tag*

no ephone-dn *dn-tag*

Syntax Description	<i>dn-tag</i>	Unique sequence number that identifies a particular ephone-dn during configuration tasks. Range is from 1 to the number set by the max-dn command.
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Defaults	No directory number is configured
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Command Modes	Global configuration
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Command History	Release	Modification
	12.1(5)YD	This command was introduced on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco IAD2420 series.
	12.2(2)XT	This command was implemented on the Cisco 1750 and Cisco 1751.
	12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the Cisco 3725 and Cisco 3745.
	12.2(8)T1	This command was implemented on the Cisco 2600-XM and Cisco 2691.
	12.2(11)T	This command was implemented on the Cisco 1760.

Usage Guidelines This is a top-level command used to configure Cisco IP phones on the Cisco IOS Telephony Service router. By default, no directory number is configured.

Before using the **ephone-dn** command, you must set the maximum number of ephone-dns to appear in your system by using the **max-dn** command. 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. For the maximum number of ephone-dns and recommended memory for each platform, see the [Cisco CallManager Express Supported Firmware, Platforms, Memory, and Voice Products](#) for your Cisco CME version.

Examples The following example shows how to configure the directory numbers for the Cisco IP phone lines and enter ephone-dn configuration mode:

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

Related Commands	Command	Description
	application	Selects session-level application for each Cisco IP phone directory number.
	caller-id block	Configures caller-ID blocking for outbound calls.
	call-forward all	Configures call forwarding for all the incoming calls on one of the lines of a Cisco IP phone.
	call-forward busy	Configures call forwarding to another number when a Cisco IP phone is busy.
	call-forward noan	Configures call forwarding to another number when no answer is received from the Cisco IP phone.
	cor	Configures a class of restriction (COR) on the dial peers associated with a directory number.
	ephone	Enters ephone configuration mode.
	hold-alert	Sets audible alert notification on the Cisco IP phone for alerting the user about on-hold calls.
	huntstop	Sets the huntstop attribute for the dial peers associated with the Cisco IP phone lines.
	intercom	Defines the directory number for the Cisco IP phone that connects with another IP phone for the intercom feature.
	max-dn	Sets the maximum number of directory numbers that can be supported by a router.
	max-ephones	Configures the maximum number of Cisco IP phones that can be supported by a router.
	mwi	Configures specific Cisco IP phone directory numbers to receive MWI notification from an external voice-mail system.
	mwi sip	Subscribes an extension in a Cisco IOS Telephony Service router to receive message waiting indication (MWI) notification from a SIP MWI server.
	name	Configures a username associated with a directory number.
	number	Configures a valid number for a Cisco IP phone.
	paging	Sets paging numbers that can be called in order to broadcast an audio page to a group of Cisco IP phones.
	paging group	Sets audio paging directory number for a large combined group.
	preference	Sets preference for the attached dial peer for a directory number.
	telephony-service	Enables Cisco IOS Telephony Service and enters telephony-service configuration mode.
	translate	Selects a translation rule to numbers dialed by Cisco IP phone users.

erase vfc

To erase the Flash memory of a specified voice feature card (VFC), use the **erase vfc** command in privileged EXEC mode.

erase vfc *slot*

Syntax Description	<i>slot</i>	Slot on the Cisco AS5300 in which the specified VFC resides. Range is from 0 to 2. There is no default.
Defaults	No default behavior or values	
Command Modes	Privileged EXEC	
Command History	Release	Modification
	11.3(1)MA	This command was introduced on the Cisco AS5300.
Usage Guidelines	Use the erase vfc command to erase the contents of Flash memory for a specified VFC (thereby freeing space in VFC Flash memory) including the default file list and the capability file list.	
Examples	<p>The following example erases the Flash memory on the VFC located in slot 0:</p> <pre>Router# erase vfc 0</pre>	
Related Commands	Command	Description
	delete vfc	Deletes a file from VFC Flash memory.

expect-factor

To specify when the router generates an alarm to the network manager, indicating that the expected quality of voice has dropped, use the **expect-factor** command in dial-peer configuration mode. To reset to the default, use the **no** form of this command.

expect-factor *value*

no expect-factor *value*

Syntax Description	<i>value</i>	Integers that represent the International Telecommunication Union (ITU) specification for quality of voice as described in G.113. Range is from 0 to 20, with 0 representing toll quality. Default is 0.
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Defaults	0
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Command Modes	Dial-peer configuration
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Command History	Release	Modification
	11.3(1)T	This command was introduced on the Cisco 3600 series.
	12.2(8)T	The <i>value</i> default entry for this command was changed from 10 to 0.

Usage Guidelines	<p>This command applies to Voice over IP (VoIP) dial peers.</p> <p>Use the expect-factor command to specify when the router generates a Simple Network Management Protocol (SNMP) trap to the network manager.</p>
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Examples	The following example configures toll quality of voice for a dial peer:
-----------------	-------------------------------------------------------------------------

```
dial-peer voice 10 voip
  expect-factor 0
```

extsig mgcp

To configure external signaling control by Media Gateway Control Protocol (MGCP) for a T1 or E1 trunk controller card, use the **extsig mgcp** command in controller configuration mode. To discontinue MGCP control for this controller, use the **no** form of this command.

extsig mgcp

no extsig mgcp

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values

Command Modes Controller configuration

Command History	Release	Modification
	12.2(2)XB	This command was introduced.
	12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T and implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco 7200 series. Support for the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 is not included in this release.
	12.2(11)T	This command is supported on the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 in this release.

Usage Guidelines For T3 lines, each logical T1 trunk controller card must be configured using the **extsig mgcp** command.

Examples The following example shows MGCP signaling control being configured for T1 controller 7/0:

```
controller T1 7/0
 framing esf
 extsig mgcp
 guard-timer 10 on-expiry reject
 linecode b8zs
 ds0-group 1 timeslots 1-24 type none service mgcp
```

Related Commands	Command	Description
	dialer extsig	Configures an interface to initiate and terminate calls using an external signaling protocol.