Cisco IOS Voice Commands: G

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*.

g729 annexb-all

To configure Cisco IOS Session Initiation Protocol (SIP) gateway to treat the G.729br8 codec as superset of G.729r8 and G.729br8 codecs to interoperate with the Cisco Unified Communications Manager, use the **g729 annexb-all** command in voice service SIP configuration mode. To return to the default global setting for the gateway, where G.729br8 codec represents only the G.729br8 codec, use the **no** form of this command.

g729 annexb-all

no g729 annexb-all

Syntax Description

annexb-all	Specifies that the G.729br8 codec is treated as a superset of G.729r8 and G.729br8 codecs to communicate with Cisco Unified Communications Manager.

Command Default

G.729br8 codec is not viewed as superset of G.729r8 and G.729br8 codecs.

Command Modes

Voice service SIP configuration (conf-serv-sip)

Command History

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

Usage Guidelines

There are four variations of the G.729 coder-decoder (codec), which fall into two categories:

High Complexity

- G.729 (g729r8)—a high complexity algorithm codec on which all other G.729 codec variations are based.
- G.729 Annex-B (g729br8 or G.729B)—a variation of the G.729 codec that allows the DSP to detect and measure voice activity and convey suppressed noise levels for re-creation at the other end. Additionally, the Annex-B codec includes Internet Engineering Task Force (IETF) voice activity detection (VAD) and comfort noise generation (CNG) functionality.

Medium Complexity

- G.729 Annex-A (g729ar8 or G.729A)—a variation of the G.729 codec that sacrifices some voice quality to lessen the load on the DSP. All platforms that support G.729 also support G.729A.
- G.729A Annex-B (g729abr8 or G.729AB)—a variation of the G.729 Annex-B codec that, like G.729B, sacrifices voice quality to lessen the load on the DSP. Additionally, the G.729AB codec also includes IETF VAD and CNG functionality.

The VAD and CNG functionality is what causes the instability during communication attempts between two DSPs where one DSP is configured with Annex-B (G.729B or G.729AB) and the other without (G.729 or G.729A). All other combinations interoperate. To configure a Cisco IOS SIP gateway for

interoperation with Cisco Unified Communications Manager (formerly known as the Cisco CallManager, or CCM), use the **g729-annexb-all** command in voice service SIP configuration mode to allow connection of calls between two DSPs with incompatible G.729 codecs. Use the **voice-class sip g729 annexb-all** command in dial peer voice configuration mode to configure G.729 codec interoperation settings for a dial peer that override global settings for the Cisco IOS SIP gateway.

Examples

The following example configures a Cisco IOS SIP gateway (globally) to be able to connect calls between otherwise incompatible G.729 codecs:

```
Router> enable
Router# configure terminal
Router(config)# voice service voip
Router(conf-voi-serv)# sip
Router(conf-serv-sip)# g729 annexb-all
```

Related Commands

Command	Description
voice-class sip g729 annexb-all	Configures an individual dial peer on a Cisco IOS SIP gateway to view a G.729br8 codec as superset of G.729r8 and G.729br8 codecs.

g732 ber

To enable G.732 processing and reporting for the E1 controller, use the **g732 ber** command in controller configuration mode. To disable processing and reporting, use the **no** form of this command.

g732 ber

no g732 ber

Syntax Description

This command has no arguments or keywords.

Command Default

G.732 is disabled.

Command Modes

Controller configuration

Command History

Release	Modification
12.2(2)T	This command was introduced on the Cisco 2611.
12.2(15)T	This command was implemented on the Cisco AS5350 and Cisco AS5400 network access server (NAS) platforms.

Usage Guidelines

By default, G.732 reporting is disabled to prevent a change in E1 behavior for sites that do not want G.732 reporting.

Once ITU-T G.732 is enabled, the E1 controller is placed in the DOWN state if the bit error rate (BER) on the line is greater than 10e-3. The controller is restored to the UP state if the BER drops below 10e-4 for longer than two seconds. When the G.732 alarm is declared, the transmitter sends a remote alarm indication (RAI) yellow alarm.

You can restore ITU-T G.732 functionality by performing a power cycle or a software reload.

Examples

The following example applies to a Cisco 2611 and shows enabled G.732 processing and reporting for E1 controller 0/0:

```
controller e1 0/0
 g732 ber
```

The following example applies to a Cisco AS5400 with an 8-PRI E1 dial feature card (DFC) in slot 4:

```
controller e1 4/0
 g732 ber
```

Related Commands

Command	Description
show controllers e1	Displays information about E1 links.

gatekeeper

To enter gatekeeper configuration mode, use the **gatekeeper** command in global configuration mode.

gatekeeper

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Global configuration

Command History

Release	Modification
11.3(2)NA	This command was introduced on the Cisco 2500 series and Cisco 3600 series.
12.0(3)T	This command was integrated into Cisco IOS Release 12.0(3)T and implemented on the Cisco MC3810.

Usage Guidelines

Press **Ctrl-Z** or use the **exit** command to exit gatekeeper configuration mode.

Examples

The following example brings the gatekeeper online:

```
gatekeeper
 no shutdown
```

gateway

To enable the H.323 VoIP gateway, use the **gateway** command in global configuration mode. To disable the gateway, use the **no** form of this command.

gateway

no gateway

Syntax Description

This command has no arguments or keywords.

Command Default

The gateway is unregistered

Command Modes

Global configuration

Command History

Release	Modification
11.3(6)NA2	This command was introduced on the following platforms: Cisco 3600 series, Cisco AS5300, and Cisco AS5800.
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

Use this command to enable H.323 VoIP gateway functionality. After you enable the gateway, it attempts to discover a gatekeeper by using the H.323 RAS GRQ message. If you enter **no gateway voip**, the VoIP gateway unregisters with the gatekeeper via the H.323 RAS URQ message.

Examples

The following example enables the gateway:

```
gateway
```

gcid

To enable Global Call ID (Gcid) for every call on an outbound leg of a VoIP dial peer for a SIP endpoint, use the **gcid** command in voice-service configuration mode. To return to the default, use the **no** form of this command.

gcid

no gcid

Syntax Description

This command has no arguments or keywords.

Command Default

Gcid is disabled.

Command Modes

Voice-service configuration (config-voi-serve)

Command History

Cisco IOS Release	Cisco Product	Modification
12.4(11)XW2	Cisco Unified CME 4.2	This command was introduced.
12.4(15)XY	Cisco Unified CME 4.2 (1)	This command was introduced.
12.4(15)XZ	Cisco Unified CME 4.3	This command was introduced.
12.4(20)T	—	This command was integrated into Cisco IOS Release 12.4(20)T.

Usage Guidelines

This command in voice-service configuration mode enables Global Call ID (Gcid) in the SIP header for every call on an outbound leg of a VoIP dial peer for a SIP endpoint.

When a call moves around and between the SIP endpoint and the target on a VoIP network because of redirect, transfer, and conference, the SIP Call-ID continues to change. For call control purposes, a unique Gcid is issued for every outbound call leg. A single Gcid remains the same for the same call in the system, and is valid for redirect, transfer, and conference events, including 3-party conferencing when a call center phone acts as a conference host. A SIP header, Cisco_GCID, is added into SIP Invite and REFER requests and to certain other responses to pass the Gcid to the target.

Examples

The following partial output shows the configuration for the **gcid** command:

```
router# show running-configuration
!
!
!
voice service voip
 gcid
 callmonitor
 allow-connections h323 to h323
 allow-connections h323 to sip
 allow-connections sip to h323
 allow-connections sip to sip
 no supplementary-service sip moved-temporarily
 sip
 registrar server expires max 120 min 60
```

global (application configuration)

To enter application configuration global mode, use the **global** command in application configuration mode.

global

Syntax Description

No arguments or keywords

Command Default

No default behavior or values

Command Modes

Application configuration

Command History

Release	Modification
12.3(14)T	This command was introduced.

Usage Guidelines

Use this command to enter application configuration global mode. You can then configure applications for a dial peer to use for incoming calls when it does not have an explicit application configured.

If an application is defined on the dial peer, that application always takes precedence over the global application configured in application configuration global mode. The applications configured in this mode execute only when a dial peer has no application configured.

Examples

The following example shows the clid_authen_collect application is configured as the default global application for all inbound dial peers that do not have a specific application configured:

```
application
    global
    service default clid_authen_collect
```

Related Commands

Command	Description
call application global	Configures an application to use for incoming calls whose incoming dial peer does not have an explicit application configured.

groundstart auto-tip

To configure a timing delay on an FXO groundstart voice port, use the **groundstart auto-tip** command in voice-port configuration mode. To disable the configured timeout, use the **no** form of this command.

groundstart auto-tip [**delay** *timer*]

no groundstart auto-tip [**delay** *timer*]

Syntax Description

delay	Indicates that a specific delay time will be configured.
timer	Specifies the wait time in milliseconds that the FXO groundstart voice port will wait for a tip ground acknowledgment.

Command Default

This command is disabled by default. If the command is used without the optional keyword, the default time of 200 ms is activated.

Command Modes

Voice-port configuration

Command History

Release	Modification
12.3(11)T2	This command was introduced into Cisco IOS Release 12.3(11)T2. This command is not supported on the Cisco 1700 series platform.

Usage Guidelines

This command should only be used after you encounter call setup problems involving FXO groundstart analog voice ports. If these problems occur, first load the latest image for your Cisco IOS Release (for example, if you are running Release 12.3(11)T, you should replace this image with Release 12.3(11)T2. Upgrading the software image should eliminate the problem. If not, then use this command as a troubleshooting measure—it should be enabled in a configuration only if you encounter problems in connecting outgoing calls. After the **groundstart auto-tip** command is configured, the problem should not occur again.

Use the **groundstart auto-tip** command only for voice ports configured for FXO groundstart signaling.

The following example sets the delay wait time for tip ground acknowledgment to 250 ms:

```
Router# configure terminal
Router(config)# voice-port 2/0/0
Router(config-voiceport)# shutdown
Router(config-voiceport)# groundstart auto-tip delay 250
Router(config-voiceport)# no shutdown
Router(config-voiceport)# exit
```

Related Commands

Command	Description
voice-port	Specifies that a voice port will be used in the connection.

group

To configure the maximum number of segments that are received in a session group or to associate the group with a specified session set, use the **group** command in backhaul-session-manager configuration mode. To restore the default number, use the **no** form of this command.

group {*group-name* **cumulative ack** *count* | **out-of-sequence** *count* | **receive** *count* | **retransmit** *count* | **set** *set-name*}

no group {*group-name* **cumulative ack** | **out-of-sequence** | **receive** | **retransmit** | **set**}

Caution Do not change this command or the keywords unless instructed to do so by Cisco technical support. There are relationships between group parameters that can cause sessions to fail if not set correctly.

Syntax Description

group-name	Session-group name.
cumulative ack *count*	Maximum number of segments received before acknowledgment. Range is from 0 to 255. Default is 3 segments.
out-of-sequence *count*	Maximum number of out-of-sequence segments that can be received in a session group before an ACK is sent. Range is from 0 to 255. Default is 3 segments.
receive *count*	Maximum number of segments in the receive window of the media gateway. This is the maximum number of segments the media gateway is allowed to receive before it sends an ACK. Range is from 1 to 64. Default is 32 segments.
retransmit *count*	Maximum number of retransmits allowed in a session group. Range is from 0 to 255. Default is 2 retransmits.
set *set-name*	Session-set name.

Command Default

For the **cumulative ack** and **out-of-sequenc**e keywords, the default is 3 segments.
For the **receive** keyword, the default is 32 segments.
For the **retransmit** keyword, the default is 2 retransmits.
The **set** keyword has no default behavior or values.

Command Modes

Backhaul-session-manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810.
12.2(2)XB1	This command was implemented on the Cisco AS5850.

Release	Modification
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T. This command was implemented on the Cisco IAD2420 series. This command does not support the access servers in this release.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example configures the session group named group5 to send an acknowledgment after four segments have been received:

```
group group5 cumulative-ack 4
```

The following example configures the session group named group5 to send an acknowledgment after four out-of-sequence segments have been received:

```
group group5 out-of-sequence 4
```

The following example configures the session group named group5 to receive a maximum of 10 segments:

```
group group5 receive 10
```

The following example configures the session group named group5 to allow as many as 3 retransmits:

```
group group5 retransmit 3
```

The following example associates the session group named group5 with the session set named set1:

```
group group5 set set1
```

Related Commands

Command	Description
group auto-reset	Specifies the maximum number of auto-resets for a session group.
group cumulative-ack	Specifies maximum cumulative acknowledgments.
group out-of-sequence	Specifies maximum out-of-sequence segments that are received before an EACK is sent.
group receive	Specifies maximum receive segments.
group retransmit	Specifies maximum retransmits.
group timer	Specifies timeouts.

group auto-reset

To specify the maximum number of auto-resets for a session group, use the **group auto-reset** command in backhaul session manager configuration mode. To restore the default number, use the **no** form of this command.

group *group-name* **auto-reset** *count*

no group *group-name* **auto-reset**

Caution Do not change the auto-reset number unless instructed to do so by Cisco technical support. There are relationships between group parameters that can cause sessions to fail if not set correctly.

Syntax Description

group-name	Name of session group.
count	Maximum number of auto-resets before the connection is considered failed. Range is from 0 to 255. The default is 5.

Command Default

5 auto-resets

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(2)XB1	This command was implemented on the Cisco AS5850.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T and was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example specifies a maximum of six auto-resets for the session group named “group5”:

```
Router(config-bsm)# group group5 auto-reset 6
```

Related Commands

Command	Description
group cumulative-ack	Configures the maximum number of segments that are received in a session group before an acknowledgment is sent.
group out-of-sequence	Configures the maximum out-of-sequence segments that are received before an EACK is sent.
group receive	Configures the maximum number of segments in the receive window of a session group.
group retransmit	Configures the maximum number of retransmits.

group cumulative-ack

To configure the maximum number of segments that are received before an acknowledgment is sent, use the **group cumulative-ack** command in backhaul session manager configuration mode. To set the value to the default, use the **no** form of this command.

group *group-name* **cumulative-ack** *count*

no group *group-name* **cumulative-ack** *count*

Caution Do not change this parameter unless instructed to do so by Cisco technical support. Incorrectly set parameters can cause sessions to fail.

Syntax Description

group-name	Name of session group.
count	Maximum number of segments that are received before acknowledgment. Range is from 0 to 255. The default is 3.

Command Default

3 segments

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200 series.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(8)T	This command was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example sets the cumulative acknowledgment maximum to 4 for the group named "group1":

```
Router(config-bsm)# group group5 cumulative-ack 4
```

Related Commands

Command	Description
group auto-reset	Configures the maximum auto-reset value.
group out-of-sequence	Configures the maximum number of out-of-sequence segments that are received before an EACK is sent.

group receive	Configures the maximum number of receive segments.
group retransmit	Configures the maximum number of retransmits.

group out-of-sequence

To configure the maximum number of out-of-sequence segments that are received before an error acknowledgement (EACK) is sent, use the **group out-of-sequence** command in backhaul session manager configuration mode. To set the value to the default, use the **no** form of this command.

group *group-name* **out-of-sequence** *count*

no group *group-name* **out-of-sequence** *count*

Caution Do not change this parameter unless instructed to do so by Cisco technical support. Incorrectly set parameters can cause sessions to fail.

Syntax Description

group-name	Name of the session group.
count	Maximum number of out-of-sequence segments. Range is from 0 to 255. The default is 3.

Command Default

3 segments

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200 series.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(8)T	This command was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example sets the out-of-sequence maximum to 4 for the group named “group5”:

```
Router(config-bsm)# group group5 out-of-sequence 4
```

Related Commands

Command	Description
group auto-reset	Configures the maximum auto-reset value.
group cumulative-ack	Configures the maximum number of cumulative acknowledgments.
group receive	Configures the maximum number of receive segments.
group retransmit	Configures the maximum number of retransmits.

group receive

To configure the maximum number of receive segments, use the **group receive** command in backhaul session manager configuration mode. To set the value to the default, use the **no** form of this command.

group *group-name* **receive** *count*

no group *group-name* **receive** *count*

Caution Do not change this parameter unless instructed to do so by Cisco technical support. Incorrectly set parameters can cause sessions to fail.

Syntax Description

group-name	Name of the session group.
count	Maximum number of segments in a receive window. The far end should send no more than this number of segments before receiving an acknowledgment for the oldest outstanding segment. Range is 1 to 64. The default is 32.

Command Default

32 segments

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200 series.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(8)T	This command was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example sets the receive maximum to 10 for the group named “group5”:

```
Router(config-bsm)# group group5 receive 10
```

Related Commands

Command	Description
group auto-reset	Configures the maximum auto-reset value.
group cumulative-ack	Configures the maximum number of cumulative acknowledgments.

group out-of-sequence	Configures the maximum number of out-of-sequence segments that are received before an EACK is sent.
group retransmit	Configures the maximum number of retransmits.

group retransmit

To configure the maximum number of retransmits, use the **group retransmit** command in backhaul session manager configuration mode. To set the value to the default, use the **no** form of this command.

group *group-name* **retransmit** *count*

no group *group-name* **retransmit** *count*

Caution Do not change this parameter unless instructed to do so by Cisco technical support. Incorrectly set parameters can cause sessions to fail.

Syntax Description

group-name	Name of the session group.
count	Maximum number of retransmits. Range is 0 to 255. The default is 2.

Command Default

2 retransmits

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200 series.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(8)T	This command was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Examples

The following example sets the retransmit maximum to 3 for the group named “group5”:

```
Router(config-bsm)# group group5 retrans 3
```

Related Commands

Command	Description
group auto-reset	Configures the maximum auto-reset value.
group cumulative-ack	Configures the maximum number of cumulative acknowledgments.
group out-of-sequence	Configures the maximum number of out-of-sequence segments that are received before an EACK is sent.
group receive	Configures the maximum number of receive segments.

group set

To create a session group and associate it with a specified session set, use the **group** command in backhaul session manager configuration mode. To delete the group, use the **no** form of this command.

group *grp-name* **set** *set-name*

no group *grp-name*

Syntax Description

grp-name	Name of the session group.
set-name	Name of the session set.

Command Default

No default behavior or values

Command Modes

Backhaul session manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced on the Cisco AS5300.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810 series.
12.2(2)XB1	This command was implemented on the Cisco AS5850.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T and was implemented on the Cisco IAD2420 series.

Examples

The following example shows session group **group5** being associated with session set **set1**:

```
Router(config-bsm)# group group5 set set1
```

Related Commands

Command	Description
group auto-reset	Specifies the maximum number of auto-resets for a session group.
group cumulative-ack	Configures the maximum number of segments that are received in a session group before an acknowledgment is sent.
group out-of-sequence	Configures the maximum out-of-sequence segments that are received before an EACK is sent.
group receive	Configures the maximum number of segments in the receive window of a session group.
group retransmit	Configures the maximum number of retransmits.
group timer cumulative-ack	Configures cumulative acknowledgment timeout.
group timer keepalive	Configures keepalive (or null segment) timeout.
group timer retransmit	Configures retransmission timeout.

Command	Description
group timer transfer	Configures state transfer timeout.
group auto-reset	Specifies the maximum number of auto-resets for a session group.

group timer

To configure the maximum number of milliseconds for which the Reliable User Datagram Protocol (RUDP) delays before sending an acknowledgment for a received segment, sending a keepalive segment, retransmitting a segment, or transferring a segment, use the **group timer** command in backhaul-session-manager configuration mode. To restore the default values, use the **no** form of this command.

group *group-name* **timer** {**cumulative ack** *time* | **keepalive** *time* | **retransmit** *time* | **transfer** *time*}

no group *group-name* **timer** {**cumulative ack**}

Caution Do not change the group timer parameters unless instructed to do so by Cisco technical support. There are relationships between group parameters that can cause sessions to fail if not set correctly.

Syntax Description

group-name	Name of session group.
cumulative ack *time*	Number of milliseconds for which RUDP delays before sending an acknowledgment for a received segment. Range is 100 to 65535. The default is 100.
keepalive *time*	Number of milliseconds before RUDP sends a keepalive segment when no RUDP packets are received or sent. Range is 100 to 65535. The default is 1000.
retransmit *time*	Number of milliseconds for which RUDP waits before retransmitting the segment. Range is 100 to 65535. The default is 300.
transfer *time*	Number of milliseconds for which RUDP waits to receive a selection of a new session from the application during a transfer state. Range is 0 to 65535. The default is 2000.

Command Default

cumulative ack: 100 milliseconds
keepalive: 1000 milliseconds
retransmit: 300 milliseconds
transfer: 2000 milliseconds

Command Modes

Backhaul-session-manager configuration

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(2)T	This command was implemented on the Cisco 7200.
12.2(4)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3600 series, and Cisco MC3810.
12.2(2)XB1	This command was implemented on the Cisco AS5850.

Release	Modification
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T and was implemented on the Cisco IAD2420 series.
12.2(11)T	This command was implemented on the following platforms: Cisco AS5350, Cisco AS5400, and Cisco AS5850.

Usage Guidelines

The retransmit timer must be greater than the cumulative-ack timer.

Cumulative acknowledgment timeout is the maximum number of milliseconds for which RUDP delays before sending an acknowledgment for a received segment.

Examples

The following example specifies 325 milliseconds as the maximum acknowledgment delay for the session group named "group5":

```
group group5 timer cumulative-ack 325
```

The following example configures RUDP to send keepalive segments if no RUDP packets are received or sent for 2.5 seconds (2500 milliseconds) in the session group named "group5".

```
group group5 timer keepalive 2500
```

The following example sets a retransmit time of 650 milliseconds for the session group named "group5":

```
group group5 timer retransmit 650
```

Related Commands

Command	Description
group	Specifies the maximum number of segments that are received in a session group.

group-params

To define groups of parameters that can be used by applications, use the **group-params** command in application configuration mode.

group-params *groupname*

Syntax Description

groupname	Name of the parameter group you are creating.

Command Modes

Application configuration

Command History

Release	Modification
12.3(14)T	This command was introduced.

Usage Guidelines

This command allows you to define groups of parameters so that a group of parameters can be used by multiple services or packages (applications). Parameter groups are defined globally and once a group is defined, it is available for another service or package to use. Groups can contain parameters under multiple parameterspaces. In cases where a parameter is defined individually and in a parameter group, the individual parameter definition is given precedence.

Examples

The following example shows a parameter group named “fax,” that contains two parameters:

```
application
group-params fax
  paramspace fax_detect2 pin-len 9
  paramspace fax_detect1 retry-count 9
```

gw-accounting

To enable an accounting method for collecting call detail records (CDRs), use the **gw-accounting** command in global configuration mode. To disable an accounting method, use the **no** form of this command.

gw-accounting {**aaa** | **file** | **syslog** [**stats**] }

no gw-accounting {**aaa** | **file** | **syslog** [**stats**] }

Cisco IOS Release 12.2(8)T and Earlier Releases

gw-accounting {**h323** [**vsa**] | **syslog** | **voip**}

no gw-accounting {**h323** [**vsa**] | **syslog** | **voip**}

Syntax Description

aaa	Enables accounting through the AAA system and sends call detail records to the RADIUS server in the form of vendor-specific attributes (VSAs).
file	Enables the file accounting method to store call detail records in .csv format.
syslog	Enables the system logging facility to output accounting information in the form of a system log message.
stats	(Optional) Enables voice quality statistics to be sent to the system log.
h323	Enables standard H.323 accounting using Internet Engineering Task Force (IETF) RADIUS attributes.
vsa	(Optional) Enables H.323 accounting using RADIUS VSAs.
voip	Enables generic gateway-specific accounting.

Command Default

No accounting method is enabled.

Command Modes

Global configuration (config)

Command History

Release	Modification
11.3(6)NA2	This command was introduced.
12.0(7)T	This command was integrated into Cisco IOS Release 12.0(7)T. The **vsa** keyword was added.
12.1(1)T	The **voip** keyword was added.
12.2(11)T	The **h323**, **vsa**, and **voip** keywords were replaced by the **aaa** keyword.
12.4(11)XW	The **stats** keyword was added.
12.4(15)XY	The **file** keyword was added.
12.4(20)T	This command was integrated into Cisco IOS Release 12.4(20)T.

Usage Guidelines

This command enables you to output accounting data in one of the following ways:

Using RADIUS Vendor-Specific Attributes

The IETF draft standard specifies a method for communicating vendor-specific information between the network access server and the RADIUS server by using the vendor-specific attribute (attribute 26). Vendor-specific attributes (VSAs) allow vendors to support their own extended attributes not appropriate for general use. The Cisco RADIUS implementation supports one vendor-specific option using the format recommended in the specification. The Cisco vendor ID is 9, and the supported option has vendor-type 1, which is named "cisco-avpair." The value is a string of the format:

```
protocol: attribute sep value *
```

"Protocol" is a value of the Cisco "protocol" attribute for a particular type of authorization. "Attribute" and "value" are an appropriate attribute-value (AV) pair defined in the Cisco TACACS+ specification, and "sep" is "=" for mandatory attributes and "*" for optional attributes. This allows the full set of features available for TACACS+ authorization to also be used for RADIUS. For a list of VSA fields and their ASCII values, see the *Cisco IOS Security Configuration Guide* for your Cisco IOS release.

Use the **gw-accounting aaa** command to enable the VSA method of accounting.

Note Releases earlier than Cisco IOS Release 12.2(11)T use the **gw-accounting h323 vsa** command.

Using File Format

This method stores CDRs in comma separated values (CSV) format. These CDR records can be stored in a file on external or internal flash or on a file on a FTP server.

Each CDR has a fixed number of fields whose names and position order are predefined. Ten generic fields capture feature-related information. The CDR has feature fields representing the basic feature and feature fields representing the supplementary services.

Use the **gw-accounting file** command to enable the .csv file method of accounting.

Using syslog Records

The syslog accounting option exports the information elements associated with each call leg through a system log message, which can be captured by a syslog daemon on the network. The syslog output consists of the following:

```
<server timestamp> <gateway id> <message number> : <message label> : <list of AV pairs>
```

Use the **gw-accounting syslog** command to enable the syslog method of gathering accounting data.

Table 26 describes the syslog message fields.

Table 26 syslog Message Output Fields

Field	Description
server timestamp	Time stamp created by the server when it receives the message to log.
gateway id	Name of the gateway that sends the message.
message number	Number assigned to the message by the gateway.
message label	String used to identify the message category.
list of AV pairs	String that consists of <attribute name> <attribute value> pairs separated by commas.

You can enable **aaa**, **file**, or **syslog** simultaneously; call detail records are generated using all methods that you enable.

Overloading the Acct-Session-ID field

Attributes that cannot be mapped to standard RADIUS are packed into the Acct-Session-ID field as ASCII strings separated by the character "/". The Acct-Session-ID attribute definition contains the RADIUS account session ID, which is a unique identifier that links accounting records associated with the same login session for a user. To support additional fields, the following string format is defined for this field:

```
<session id>/<call leg setup time>/<gateway id>/<connection id>/<call origin>/
<call type>/<connect time>/<disconnect time>/<disconnect cause>/<remote ip address>
```

Table 27 describes the field attributes that are used with the overloaded acct-session-ID method.

Table 27 Field Attributes in Overloaded Acct-Session-ID

Field Attribute	Description
Session-Id	Standard RADIUS account session ID.
Setup-Time	Q.931 setup time for this connection in Network Time Protocol (NTP) format: hour, minutes, seconds, milliseconds, time zone, day of week, month, day of month, and year.
Gateway-Id	Name of the underlying gateway in the form "gateway.domain_name."
Call-Origin	Origin of the call relative to the gateway. Possible values are **originate** and **answer**.
Call-Type	Call leg type. Possible values are **telephony** and **VoIP**.
Connection-Id	Unique global identifier used to correlate call legs that belong to the same end-to-end call. The field consists of 4 long words (128 bits). Each long word displays as a hexadecimal value separated by a space character.
Connect-Time	Q.931 connect time for this call leg, in NTP format.
Disconnect-Time	Q.931 disconnect time for this call leg, in NTP format.
Disconnect-Cause	Reason that a call was taken offline as defined in the Q.931 specification.
Remote-Ip-Address	Address of the remote gateway port where the call is connected.

Because of the limited size of the Acct-Session-ID string, it is impossible to include many information elements in it. Therefore, this feature supports only a limited set of accounting information elements.

Use the **attribute acct-session-id overloaded** command to configure the overloaded session ID method of applying H.323 gateway-specific accounting.

Note Releases earlier than Cisco IOS Release 12.2(11)T use the **gw-accounting h323** command.

Examples

The following example shows accounting enabled using RADIUS VSA attributes:

```
gw-accounting aaa
```

The following example shows accounting enabled using the syslog method:

```
gw-accounting syslog
```

The following example shows accounting enabled using the file method:

```
gw-accounting file
```

Related Commands

Command	Description
acct-template	Selects a group of voice accounting attributes to collect.
attribute acct-session-id overloaded	Overloads the acct-session-id attribute with call detail records.
radius-server vsa send	Enables the voice gateway to recognize and use VSAs.

gw-type-prefix

To configure a technology prefix in the gatekeeper, use the **gw-type-prefix** command in gatekeeper configuration mode. To remove the technology prefix, use the **no** form of this command.

gw-type-prefix *type-prefix* [[**hopoff** *gkid1*] [**hopoff** *gkid2*] [**hopoff** *gkidn*] [**seq** | **blast**]] [**default-technology**] [[**gw ipaddr** *ipaddr* [*port*]]]

no gw-type-prefix *type-prefix* [[**hopoff** *gkid1*] [**hopoff** *gkid2*] [**hopoff** *gkidn*] [**seq** | **blast**]] [**default-technology**] [[**gw ipaddr** *ipaddr* [*port*]]]

Syntax Description

type-prefix	A technology prefix is recognized and is stripped before checking for the zone prefix. It is strongly recommended that you select technology prefixes that do not lead to ambiguity with zone prefixes. Do this by using the # character to terminate technology prefixes, for example, 3#.
hopoff *gkid*	(Optional) Use this option to specify the gatekeeper where the call is to hop off, regardless of the zone prefix in the destination address. The *gkid* argument refers to a gatekeeper previously configured using the zone local or zone remote comment. You can enter this keyword and argument multiple times to configure redundant gatekeepers for a given technology prefix.
seq | **blast**	(Optional) If you list multiple hopoffs, this indicates that the LRQs should be sent sequentially or simultaneously (blast) to the gatekeepers according to the order in which they were listed. The default is to send them sequentially.
default-technology	(Optional) Gateways registering with this prefix option are used as the default for routing any addresses that are otherwise unresolved.
gw ipaddr *ipaddr* [*port*]	(Optional) Use this option to indicate that the gateway is incapable of registering technology prefixes. When it registers, it adds the gateway to the group for this type prefix, just as if it had sent the technology prefix in its registration. This parameter can be repeated to associate more than one gateway with a technology prefix.

Command Default

By default, no technology prefix is defined, and LRQs are sent sequentially to all the gatekeepers listed.

Command Modes

Gatekeeper configuration

Command History

Release	Modification
11.3(6)NA2	This command was introduced on the following platforms: Cisco 2500 series, Cisco 3600 series, and Cisco AS5300.
12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T. This command was modified to allow the user to specify multiple hopoffs.
12.1(2)T	This command was modified to allow the user to specify whether LRQs should be sent simultaneously or sequentially to the gatekeepers.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco MC3810, and Cisco 7200 series.

Usage Guidelines

More than one gateway can register with the same technology prefix. In such cases, a random selection is made of one of them.

You do not have to define a technology prefix to a gatekeeper if there are gateways configured to register with that prefix and if there are no special flags (**hopoff** *gkid* or **default-technology**) that you want to associate with that prefix.

You need to configure the gateway type prefix of all remote technology prefixes that are routed through this gatekeeper.

Examples

The following example defines two gatekeepers for technology zone 3:

```
gw-type-prefix 3#* hopoff c2600-1-gk hopoff c2514-1-gk
```

Related Commands

Command	Description
show gatekeeper gw-type-prefix	Displays the list of currently defined technology zones and the gatekeepers responsible for each.
zone prefix	Configures the gatekeeper with knowledge of its own prefix and the prefix of any remote zone.