



Cisco IOS Voice Commands:

I

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 master index of commands 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 Library*.

icpif

To specify the Calculated Planning Impairment Factor (ICPIF) for calls sent by a dial peer, use the **icpif** command in dial peer configuration mode. To reset to the default, use the **no** form of this command.

icpif *number*

no icpif

Syntax Description	<i>number</i>	Integer, expressed in equipment impairment factor units, that specifies the ICPIF value. Range is 0 to 55. The default is 20.
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Command Default	20
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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.
12.0(7)XK	This command was implemented on the Cisco MC3810.	
12.1(2)T	This command was integrated into Cisco IOS Release 12.1(2)T.	
12.2(8)T	The <i>number</i> default value for this command was changed from 30 to 20.	

Usage Guidelines	<p>This command is applicable only to VoIP dial peers.</p> <p>Use this command to specify the maximum acceptable impairment factor for the voice calls sent by the selected dial peer.</p>
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Examples	The following example disables the icpif command:
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```
dial-peer voice 10 voip
 icpif 0
```

id

To configure the local identification (ID) for a neighboring border element (BE), use the **id** command in Annex G neighbor border element (BE) configuration mode. To remove the local ID, use the **no** form of this command.

id *neighbor-id*

no id *neighbor-id*

Syntax Description

<i>neighbor-id</i>	ID for a neighboring BE. The identification ID must be an International Alphabet 5 (IA5) string and cannot include spaces. This identifier is local and is not related to the border element ID.
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Command Default

No default behavior or values

Command Modes

Annex G neighbor BE 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. This command is not supported on the Cisco AS5300, Cisco AS5350, and Cisco AS5400 in this release.
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.

Examples

The following example configures the local ID for a neighboring BE. The identifier is 2333.

```
Router(config-annexg-neigh)# id 2333
```

Related Commands

Command	Description
advertise (annex G)	Controls the type of descriptors that the BE advertises to its neighbors.
port	Configures the port number of the neighbor that is used for exchanging Annex G messages.
query-interval	Configures the interval at which the local BE queries the neighboring BE.

idle-voltage

To specify the idle voltage on an Foreign Exchange Station (FXS) voice port, use the **idle-voltage** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

idle-voltage {high | low}

no idle-voltage

Syntax Description	high	The talk-battery (tip-to-ring) voltage is high (–48V) when the FXS port is idle.
	low	The talk-battery (tip-to-ring) voltage is low (–24V) when the FXS port is idle.

Command Default The idle voltage is –24V

Command Modes Voice-port configuration

Command History	Release	Modification
	12.0(4)T	This command was introduced on the Cisco MC3810.

Usage Guidelines Some fax equipment and answering machines require a –48V idle voltage to be able to detect an off-hook condition in a parallel phone.

If the idle voltage setting is **high**, the talk battery reverts to –24V whenever the voice port is active (off hook).

Examples The following example sets the idle voltage to –48V on voice port 1/1:

```
voice-port 1/1
 idle-voltage high
```

The following example restores the default idle voltage (–24V) on voice port 1/1:

```
voice-port 1/1
 no idle-voltage
```

Related Commands	Command	Description
	show voice port	Displays voice port configuration information.

ignore

To configure the North American E&M or E&M MELCAS voice port to ignore specific receive bits, use the **ignore** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

```
ignore {rx-a-bit | rx-b-bit | rx-c-bit | rx-d-bit}
```

```
no ignore {rx-a-bit | rx-b-bit | rx-c-bit | rx-d-bit}
```

Syntax Description

rx-a-bit	Ignores the receive A bit.
rx-b-bit	Ignores the receive B bit.
rx-c-bit	Ignores the receive C bit.
rx-d-bit	Ignores the receive D bit.

Command Default

The default is mode-dependent:

- North American E&M:
 - The receive B, C, and D bits are ignored
 - The receive A bit is not ignored
- E&M MELCAS:
 - The receive A bit is ignored
 - The receive B, C, and D bits are not ignored

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)MA	This command was introduced on the Cisco MC3810.
12.0(7)XK	This command was implemented on the Cisco 2600 series and Cisco 3600 series.
12.1(2)T	This command was integrated into Cisco IOS Release 12.1(2)T.

Usage Guidelines

The **ignore** command applies to E&M digital voice ports associated with T1/E1 controllers. Repeat the command for each receive bit to be configured. Use this command with the **define** command.

Examples

To configure voice port 1/1 to ignore receive bits A, B, and C and to monitor receive bit D, enter the following commands:

```
voice-port 1/1
 ignore rx-a-bit
 ignore rx-b-bit
 ignore rx-c-bit
 no ignore rx-d-bit
```

To configure voice port 1/0/0 to ignore receive bits A, C, and D and to monitor receive bit B, enter the following commands:

```
voice-port 1/0/0
 ignore rx-a-bit
 ignore rx-c-bit
 ignore rx-d-bit
 no ignore rx-b-bit
```

Related Commands

Command	Description
condition	Manipulates the signaling bit pattern for all voice signaling types.
define	Defines the transmit and receive bits for North American E&M and E&M MELCAS voice signaling.
show voice port	Displays configuration information for voice ports.

ignore (interface)

To configure the serial interface to ignore the specified serial signals as the line up/down indicator, use the **ignore** command in interface configuration mode. To restore the default, use the **no** form of this command.

DCE Asynchronous Mode

ignore [dtr | rts]

no ignore [dtr | rts]

DCE Synchronous Mode

ignore [dtr | local-loopback | rts]

no ignore [dtr | local-loopback | rts]

DTE Asynchronous Mode

ignore [cts | dsr]

no ignore [cts | dsr]

DTE Synchronous Mode

ignore [cts | dcd | dsr]

no ignore [cts | dcd | dsr]

Syntax Description

dtr	Specifies that the DCE ignores the Data Terminal Ready (DTR) signal.
rts	Specifies that the DCE ignores the Request To Send (RTS) signal.
local-loopback	Specifies that the DCE ignores the local loopback signal.
cts	Specifies that the DTE ignores the Clear To Send (CTS) signal.
dsr	Specifies that the DTE ignores the Data Set Ready (DSR) signal.
dcd	Specifies that the DTE ignores the Data Carrier Detect (DCD) signal.

Command Default

The **no** form of this command is the default. The serial interface monitors the serial signal as the line up/down indicator.

Command Modes

Interface configuration

■ ignore (interface)

Command History

Release	Modification
12.2(15)ZJ	This command was introduced on the following platforms: Cisco 2610XM, Cisco 2611XM, Cisco 2620XM, Cisco 2621XM, Cisco 2650XM, Cisco 2651XM, Cisco 2691, Cisco 3631, Cisco 3660, Cisco 3725, and Cisco 3745 routers.
12.3(2)T	This command was integrated into Cisco IOS Release 12.3(2)T.

Usage Guidelines**Serial Interfaces in DTE Mode**

When the serial interface is operating in DTE mode, it monitors the DCD signal as the line up/down indicator. By default, the attached DCE device sends the DCD signal. When the DTE interface detects the DCD signal, it changes the state of the interface to up.

SDLC Multidrop Environments

In some configurations, such as a Synchronous Data Link Control (SDLC) multidrop environment, the DCE device sends the DSR signal instead of the DCD signal, which prevents the interface from coming up. Use this command to tell the interface to monitor the DSR signal instead of the DCD signal as the line up/down indicator.

Examples

The following example shows how to configure serial interface 0 to ignore the DCD signal as the line up/down indicator:

```
Router(config)# interface serial 0
Router(config-if)# ignore dcd
```

Related Commands

Command	Description
debug serial lead-transition	Activates the leads status transition debug capability for all capable ports.
show interfaces serial	Displays information about a serial interface.

image encoding

To specify an encoding method for fax images associated with a Multimedia Mail over IP (MMoIP) dial peer, use the **image encoding** command in dial peer configuration mode. To reset to the default, use the **no** form of this command.

image encoding {mh | mr | mmr | passthrough}

no image encoding {mh | mr | mmr | passthrough}

Syntax Description

mh	Modified Huffman image encoding. This is the IETF standard.
mr	Modified Read image encoding.
mmr	Modified Modified Read image encoding.
passthrough	The image is not modified by an encoding method.

Command Default

Passthrough encoding

Command Modes

Dial peer configuration

Command History

Release	Modification
12.0(4)XJ	This command was introduced.
12.0(4)T	This command was integrated into Cisco IOS Release 12.0(4)T.
12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T.
12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
12.2(4)T	This command was implemented on the Cisco 1750.
12.2(8)T	This command was implemented on the following platforms: Cisco 1751, Cisco 2600 series, Cisco 3600 series, Cisco 3725, and Cisco 3745.

Usage Guidelines

Use this command to specify an encoding method for e-mail fax TIFF images for a specific MMoIP dial peer. This command applies primarily to the on-ramp MMoIP dial peer. Although you can optionally create an off-ramp dial peer and configure a particular image encoding value for that off-ramp call leg, store-and-forward fax ignores the off-ramp MMoIP setting and sends the file using Modified Huffman encoding.

There are four available encoding methods:

- **Modified Huffman (MH)**—One-dimensional data compression scheme that compresses data in only one direction (horizontal). Modified Huffman compression does not allow the transmission of redundant data. This encoding method produces the largest image file size.
- **Modified Read (MR)**—Two-dimensional data compression scheme (used by fax devices) that handles the data compression of the vertical line and that concentrates on the space between lines and within given characters.

- **Modified Modified Read (MMR)**—Data compression scheme used by newer Group 3 fax devices. This encoding method produces the smallest possible image file size and is slightly more efficient than Modified Read.
- **Passthrough**—No encoding method is applied to the image—meaning that the image is encoded by whatever encoding method is used by the fax device.

The IETF standard for sending fax TIFF images is Modified Huffman encoding with fine or standard resolution. RFC 2301 requires that compliant receivers support TIFF images with MH encoding and fine or standard resolution. If a receiver supports features beyond this minimal requirement, you might want to configure the Cisco AS5300 universal access server to send enhanced-quality documents to that receiver.

The primary reason to use a different encoding scheme from MH is to save network bandwidth. MH ensures interoperability with all Internet fax devices, but it is the least efficient of the encoding schemes for sending fax TIFF images. For most images, MR is more efficient than MH, and MMR is more efficient than MR. If you know that the recipient is capable of receiving more efficient encodings than just MH, store-and-forward fax allows you to send the most efficient encoding that the recipient can process. For end-to-end closed networks, you can choose any encoding scheme because the off-ramp gateway can process MH, MR, and MMR.

Another factor to consider is the viewing software. Many viewing applications (for example, those that come with Windows 95 or Windows NT) are able to display MH, MR, and MMR. Therefore you should decide, on the basis of the viewing application and the available bandwidth, which encoding scheme is right for your network.

This command applies to both on-ramp and off-ramp store-and-forward fax functions.

Examples

The following example selects Modified Modified Read as the encoding method for fax TIFF images sent by MMoIP dial peer 10:

```
dial-peer voice 10 mmoip
  image encoding mmr
```

Related Commands

Command	Description
image resolution	Specifies a particular fax image resolution for a specific MMoIP dial peer.

image resolution

To specify a particular fax image resolution for a specific multimedia mail over IP (MMoIP) dial peer, use the **image resolution** command in dial peer configuration mode. To reset to the default, use the **no** form of this command.

image resolution { **fine** | **standard** | **superfine** | **passthrough** }

no image resolution { **fine** | **standard** | **superfine** | **passthrough** }

Syntax Description	fine	standard	superfine	passthrough
	Configures the fax TIFF image resolution to be 204-by-196 pixels per inch.	Configures the fax TIFF image resolution to be 204-by-98 pixels per inch.	Configures the fax TIFF image resolution to be 204-by-391 pixels per inch.	Indicates that the resolution of the fax TIFF image is not altered.

Command Default passthrough

Command Modes Dial peer configuration

Command History	Release	Modification
	12.0(4)XJ	This command was introduced.
	12.0(4)T	This command was integrated into Cisco IOS Release 12.0(4)T.
	12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T.
	12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
	12.2(4)T	This command was implemented on the Cisco 1750 access router.
	12.2(8)T	This command was implemented on the following platforms: Cisco 1751, Cisco 2600, Cisco 3600, Cisco 3725, and Cisco 3745.

Usage Guidelines Use this command to specify a resolution (in pixels per inch) for e-mail fax TIFF images sent by the specified MMoIP dial peer. This command applies primarily to the on-ramp MMoIP dial peer. Although you can optionally create an off-ramp dial peer and configure a particular image resolution value for that off-ramp call leg, store-and-forward fax ignores the off-ramp MMoIP setting and sends the file using fine resolution.

This command enables you to increase or decrease the resolution of a fax TIFF image, thereby changing not only the resolution but also the size of the fax TIFF file. The IETF standard for sending fax TIFF images is Modified Huffman encoding with fine or standard resolution. The primary reason to configure a different resolution is to save network bandwidth.

This command applies to both on-ramp and off-ramp store-and-forward fax functions.

■ image resolution

Examples

The following example selects fine resolution (204-by-196 pixels per inch) for e-mail fax TIFF images associated with MMoIP dial peer 10:

```
dial-peer voice 10 mmoip
  image encoding mh
  image resolution fine
```

Related Commands

Command	Description
image encoding	Specifies an encoding method for fax images associated with an MMoIP dial peer.

impedance

To specify the terminating impedance of a voice-port interface, use the **impedance** command in voice-port configuration mode. To reset to the default, use the **no** form of this command.

impedance { **600c** | **600r** | **900c** | **900r** | **complex1** | **complex2** | **complex3** | **complex4** | **complex5** | **complex6** }

no impedance { **600c** | **600r** | **900c** | **900r** | **complex1** | **complex2** | **complex3** | **complex4** | **complex5** | **complex6** }

Syntax Description	
600c	600 ohms + 2.15uF ¹ .
600r	Resistive 600-ohm termination.
900c	900 ohms + 2.15uF ¹ .
900r	Resistive 900-ohm termination.
complex1	220 ohms + (820 ohms 115 nF) ¹ .
complex2	270 ohms + (750 ohms 150 nF) ¹ .
complex3	370 ohms + (620 ohms 310 nF) ¹ .
complex4	600r, line = 270 ohms + (750 ohms 150 nF) ¹ .
complex5	320 + (1050 ohms 230 nF), line = 12 Kft ¹ .
complex6	600r, line = 350 + (1000 ohms 210 nF) ¹ .

1. The plus symbol (+) indicates serial. The double pipe (||) indicates parallel.



Note

This table represents the full set of impedances. Not all modules support the full set of impedance values shown here. To determine which impedance values are available on your modules, enter `impedance ?` in the command-line interface to see a list of the values you can configure.

Command Default 600r

Command Modes Voice-port configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced on Cisco 3600 series.
	12.3(7)T	This command was integrated into Cisco IOS Release 12.3(7)T and support was added for the complex3 , complex4 , complex5 , and complex6 keywords on the Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3662 (telco models), Cisco 3700 series, and Cisco 3800 series.

Usage Guidelines

Use this command to specify the terminating impedance of analog telephony interfaces. The impedance value must match the specifications from the telephony system to which it is connected. Different countries often have different standards for impedance. CO switches in the United States are predominantly 600r. PBXs in the United States are 600r or 900c.

If the impedance is set incorrectly (if there is an impedance mismatch), a significant amount of echo is generated (which could be masked if the **echo-cancel** command has been enabled). In addition, gains might not work correctly if there is an impedance mismatch.

Configuring the impedance on a voice port changes the impedance on both voice ports of a VPM card. This voice port must be shut down and then opened for the new value to take effect.

Examples

The following example configures an FXO voice port on the Cisco 3600 series router for an impedance of 600 ohms (real):

```
voice-port 1/0/0
impedance 600r
shutdown/no shutdown
```

The following example configures an E&M voice port on a Cisco 2800 for an impedance of complex3:

```
voice-port 1/1
impedance complex3
shutdown/no shutdown
```

Related Commands

Command	Description
voice-port	Enters voice-port configuration mode.
echo-cancel enable	Enables the cancellation of voice that is sent out the interface and received back on the same interface.

inband-alerting

To enable inband alerting, use the **inband-alerting** command in the SIP user agent configuration mode. To disable inband alerting, use the **no** form of this command.

inband-alerting

no inband-alerting

Syntax Description This command has no arguments or keywords.

Command Default Enabled

Command Modes SIP user agent configuration

Command History	Release	Modification
	12.1(1)T	This command was introduced.
	12.1(3)T	This command was limited to enabling and disabling inband alerting.
	12.2(2)XA	This command was implemented on the Cisco AS5350 and Cisco AS5400.
	12.2(2)XB1	This command was introduced on the Cisco AS5850.
	12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.

Usage Guidelines If inband alerting is enabled, the originating gateway can open an early media path (upon receiving a 180 or 183 message with a SDP body). Inband alerting allows the terminating gateway or switch to feed tones or announcements before a call is connected. If inband alerting is disabled, local alerting is generated on the originating gateway.

To reset this command to the default value, use the **default** command.

Examples The following example disables inband alerting:

```
Router(config)# sip-ua
Router(config-sip-ua)# no inband-alerting
```

Related Commands	Command	Description
	default	Sets a command to its default.
	exit	Exits the SIP user agent configuration mode.
	max-forwards	Specifies the maximum number of hops for a request.
	no	Negates a command or set its defaults.
	retry	Configures the SIP signaling timers for retry attempts.

Command	Description
timers	Configures the SIP signaling timers.
transport	Enables SIP UA transport for TCP/UDP.

inbound ttl

To set the inbound time-to-live value, use the **inbound ttl** command in Annex G neighbor service configuration mode. To reset to the default, use the **no** form of this command.

inbound ttl *ttl-value*

no inbound ttl

Syntax Description	<i>ttl-value</i>	Inbound time-to-live (TTL) value, in seconds. Range is 0 to 4294967295. When set to 0, the service relationship does not expire. The default is 120.
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Command Default	120 seconds
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Command Modes	Annex G neighbor service configuration
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Command History	Release	Modification
	12.2(11)T	This command was introduced.

Usage Guidelines	Service relationships are defined to be unidirectional. Establishing a service relationship between border element A and border element B entitles A to send requests to B and expect responses. For B to send requests to A and expect responses, a second service relationship must be established. From A's perspective, the service relationship that B establishes with A is designated the "inbound" service relationship. Use this command to indicate the duration of the relationship between border elements that participate in a service relationship.
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Examples	The following example sets the inbound time-to-live value to 420 seconds (7 minutes):
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```
Router(config-nxg-neigh-svc)# inbound ttl 420
```

Related Commands	Command	Description
	access-policy	Requires that a neighbor be explicitly configured.
	outbound retry-interval	Defines the retry period for attempting to establish the outbound relationship between border elements.
	retry interval	Defines the time between delivery attempts.
	retry window	Defines the total time that a border element attempts delivery.
	service-relationship	Establishes a service relationship between two border elements.
	shutdown	Enables or disables the border element.

incoming alerting

To instruct an FXO ground-start voice port to modify its means of detecting an incoming call, use the **incoming alerting** command in voice-port configuration mode. To return to the default call detection method, use the **no** form of this command.

incoming alerting {ring-only}

no incoming alerting

Syntax Description	ring-only	Count incoming rings to detect incoming calls to the voice port that should be answered by the router.
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Command Default	The FXO ground-start voice port detects an incoming call either by detecting the ring voltage applied to the line by the PSTN central office (CO) or by detecting that tip-ground is present for greater than about 7 seconds.
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Command Modes	Voice-port configuration
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Command History	Cisco IOS Release	Modification
	12.4(4)XC	This command was introduced.

Usage Guidelines	<p>This command is valid only on FXO ports that have been configured with the signal ground-start command.</p> <p>This command is necessary when two Cisco Unified CallManager Express (Cisco Unified CME) routers are used to provide redundant failover for incoming PSTN FXO ground-start lines. The voice ports for these trunk lines are wired in parallel between the two routers. The primary router is set to answer incoming calls after the first ring by default. The secondary router is set to answer incoming calls after 2 or 3 rings using the ring number command in voice-port configuration mode. As long as the primary router is operating, then the secondary router will not see enough rings to trigger it to answer the call. When the primary router is not operating, the secondary router has to be able to detect incoming ring signals so that it can answer calls. The default method of incoming call detection is not appropriate for voice ports on a secondary Cisco Unified CME router. The incoming alerting ring-only command must be used to modify the incoming call detection logic so that the voice port counts the number of incoming call rings instead of using the default call detection method.</p>
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Examples	The following example sets ring-only as the detection method for incoming calls on voice port 3/0/0, which is an FXO ground-start voice port.
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```
Router(config)# voice-port 3/0/0
Router(config-voiceport)# signal ground-start
Router(config-voiceport)# incoming alerting ring-only
```

Related Commands	Command	Description
	ring number	Specifies the maximum number of rings to be detected before an incoming call is answered by the router.
	signal	Specifies the type of signaling for a voice port.


incoming called-number (call filter match list)

To configure debug filtering for incoming called numbers, use the **incoming called-number** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming called-number [+]*string*[**T**]

no incoming called-number [+]*string*[**T**]

Syntax Description

+	(Optional) Character that indicates an E.164 standard number.
<i>string</i>	<p>Series of digits that specify a pattern for the E.164 or private dialing plan telephone number. Valid entries are the digits 0 through 9, the letters A through D, and the following special characters:</p> <ul style="list-style-type: none"> The asterisk (*) and pound sign (#) that appear on standard touch-tone dial pads. Comma (,), which inserts a pause between digits. Period (.), which matches any entered digit (this character is used as a wildcard). Percent sign (%), which indicates that the preceding digit occurred zero or more times; similar to the wildcard usage. Plus sign (+), which indicates that the preceding digit occurred one or more times. <p> Note The plus sign used as part of a digit string is different from the plus sign that can be used in front of a digit string to indicate that the string is an E.164 standard number.</p> <ul style="list-style-type: none"> Circumflex (^), which indicates a match to the beginning of the string. Dollar sign (\$), which matches the null string at the end of the input string. Backslash symbol (\), which is followed by a single character, and matches that character. Can be used with a single character with no other significance (matching that character). Question mark (?), which indicates that the preceding digit occurred zero or one time. Brackets ([]), which indicate a range. A range is a sequence of characters enclosed in the brackets; only numeric characters from 0 to 9 are allowed in the range. Parentheses (()), which indicate a pattern and are the same as the regular expression rule.
T	(Optional) Control character that indicates that the destination-pattern value is a variable-length dial string. Using this control character enables the router to wait until all digits are received before routing the call.

Command Default No default behavior or values

Command Modes Call filter match list configuration

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming called number 5550123:

```
call filter match-list 1 voice
  incoming called-number 5550123
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming calling-number	Configure debug filtering for incoming calling numbers.
	incoming dialpeer	Configure debug filtering for the incoming dial peer.
	incoming secondary-called-number	Configure debug filtering for incoming called numbers from the second stage of a two-stage scenario.
	outgoing called-number	Configure debug filtering for outgoing called numbers.
	outgoing calling-number	Configure debug filtering for outgoing calling numbers.
	outgoing dialpeer	Configure debug filtering for the outgoing dial peer.
	show call filter match-list	Display call filter match lists.


incoming called-number (dial peer)

To specify a digit string that can be matched by an incoming call to associate the call with a dial peer, use the **incoming called-number** command in dial peer configuration mode. To reset to the default, use the **no** form of this command.

incoming called-number *[+]*string[T]

no incoming called-number *[+]*string[T]

Syntax Description

+	(Optional) Character that indicates an E.164 standard number.
<i>string</i>	<p>Series of digits that specify a pattern for the E.164 or private dialing plan telephone number. Valid entries are the digits 0 through 9, the letters A through D, and the following special characters:</p> <ul style="list-style-type: none"> The asterisk (*) and pound sign (#) that appear on standard touch-tone dial pads. Comma (,), which inserts a pause between digits. Period (.), which matches any entered digit (this character is used as a wildcard). Percent sign (%), which indicates that the preceding digit occurred zero or more times; similar to the wildcard usage. Plus sign (+), which indicates that the preceding digit occurred one or more times. <p> Note The plus sign used as part of a digit string is different from the plus sign that can be used in front of a digit string to indicate that the string is an E.164 standard number.</p> <ul style="list-style-type: none"> Circumflex (^), which indicates a match to the beginning of the string. Dollar sign (\$), which matches the null string at the end of the input string. Backslash symbol (\), which is followed by a single character, and matches that character. Can be used with a single character with no other significance (matching that character). Question mark (?), which indicates that the preceding digit occurred zero or one time. Brackets ([]), which indicate a range. A range is a sequence of characters enclosed in the brackets; only numeric characters from 0 to 9 are allowed in the range. Parentheses (()), which indicate a pattern and are the same as the regular expression rule.
T	(Optional) Control character that indicates that the destination-pattern value is a variable-length dial string. Using this control character enables the router to wait until all digits are received before routing the call.

Command Default No incoming called number is defined

Command Modes Dial peer configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced on the Cisco 3600 series.
	11.3NA	This command was implemented on the Cisco AS5800.
	12.0(4)XJ	This command was modified for store-and-forward fax.
	12.0(4)T	This command was integrated into Cisco IOS Release 12.0(4)T.
	12.0(7)XK	This command was implemented on the Cisco MC3810.
	12.1(2)T	This command was integrated into Cisco IOS Release 12.1(2)T.
	12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
	12.2(4)T	This command was implemented on the Cisco 1750.
	12.2(8)T	This command was implemented on the following platforms: Cisco 1751, Cisco 2600 series, Cisco 3600 series, Cisco 3725, and Cisco 3745.

Usage Guidelines

When a Cisco device is handling both modem and voice calls, it needs to be able to identify the service type of the call—meaning whether the incoming call to the server is a modem or a voice call. When the access server handles only modem calls, the service type identification is handled through modem pools. Modem pools associate calls with modem resources based on the dialed number identification service (DNIS). In a mixed environment, in which the server receives both modem and voice calls, you need to identify the service type of a call by using this command.

If you do not use this command, the server attempts to resolve whether an incoming call is a modem or voice call on the basis of the interface over which the call arrives. If the call comes in over an interface associated with a modem pool, the call is assumed to be a modem call; if a call comes in over a voice port associated with a dial peer, the call is assumed to be a voice call.

By default, there is no called number associated with the dial peer, which means that incoming calls are associated with dial peers by matching calling number with answer address, call number with destination pattern, or calling interface with configured interface.

Use this command to define the destination telephone number for a particular dial peer. For the on-ramp POTS dial peer, this telephone number is the DNIS number of the incoming fax call. For the off-ramp MMoIP dial peer, this telephone number is the telephone number of the destination fax machine.

This command applies to both VoIP and POTS dial peers and to on-ramp and off-ramp store-and-forward fax functions.

This command is also used to provide a matching VoIP dial peer on the basis of called number when fax or modem pass-through with named service events (NSEs) is defined globally on a terminating gateway.

You can ensure that all calls will match at least one dial peer by using the following commands:

```
Router(config)# dial-peer voice tag voip
Router(config-dial-peer)# incoming called-number.
```

Examples

The following example configures calls that come into the router with a called number of 555-0163 as being voice calls:

```
dial-peer voice 10 pots
  incoming called-number 5550163
```

The following example sets the number (310) 555-0142 as the incoming called number for MMoIP dial peer 10:

```
dial-peer voice 10 mmoip
  incoming called-number 3105550142
```


incoming calling-number (call filter match list)

To configure debug filtering for incoming calling numbers, use the **incoming calling-number** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming calling-number [**+**]*string*[**T**]

no incoming calling-number [**+**]*string*[**T**]

Syntax Description

+	(Optional) Character that indicates an E.164 standard number.
<i>string</i>	<p>Series of digits that specify a pattern for the E.164 or private dialing plan telephone number. Valid entries are the digits 0 through 9, the letters A through D, and the following special characters:</p> <ul style="list-style-type: none"> • The asterisk (*) and pound sign (#) that appear on standard touch-tone dial pads. • Comma (,), which inserts a pause between digits. • Period (.), which matches any entered digit (this character is used as a wildcard). • Percent sign (%), which indicates that the preceding digit occurred zero or more times; similar to the wildcard usage. • Plus sign (+), which indicates that the preceding digit occurred one or more times. <p> Note The plus sign used as part of a digit string is different from the plus sign that can be used in front of a digit string to indicate that the string is an E.164 standard number.</p> <ul style="list-style-type: none"> • Circumflex (^), which indicates a match to the beginning of the string. • Dollar sign (\$), which matches the null string at the end of the input string. • Backslash symbol (\), which is followed by a single character, and matches that character. Can be used with a single character with no other significance (matching that character). • Question mark (?), which indicates that the preceding digit occurred zero or one time. • Brackets ([]), which indicate a range. A range is a sequence of characters enclosed in the brackets; only numeric characters from 0 to 9 are allowed in the range. • Parentheses (()), which indicate a pattern and are the same as the regular expression rule.
T	(Optional) Control character that indicates that the destination-pattern value is a variable-length dial string. Using this control character enables the router to wait until all digits are received before routing the call.

incoming calling-number (call filter match list)

Command Default No default behavior or values

Command Modes Call filter match list configuration

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming calling number 5550125:

```
call filter match-list 1 voice
  incoming calling-number 5550125
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming called-number (call filter match list)	Configure debug filtering for incoming called numbers.
	incoming dialpeer	Configure debug filtering for the incoming dial peer.
	incoming secondary-called-number	Configure debug filtering for incoming called numbers from the second stage of a two-stage scenario.
	outgoing called-number	Configure debug filtering for outgoing called numbers.
	outgoing calling-number	Configure debug filtering for outgoing calling numbers.
	outgoing dialpeer	Configure debug filtering for the outgoing dial peer.
	show call filter match-list	Display call filter match lists.

incoming dialpeer

To configure debug filtering for the incoming dial peer, use the **incoming dialpeer** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming dialpeer *tag*

no incoming dialpeer *tag*

Syntax Description	<i>tag</i>	Digits that define a specific dial peer. Valid entries are 1 to 2,147,483,647.
---------------------------	------------	--

Command Default	No default behavior or values
------------------------	-------------------------------

Command Modes	Call filter match list configuration
----------------------	--------------------------------------

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming dial peer 12:

```
call filter match-list 1 voice
  incoming dialpeer 12
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming called-number (call filter match list)	Configure debug filtering for incoming called numbers.
	incoming calling-number	Configure debug filtering for incoming calling numbers.
	incoming port	Configure debug filtering for the incoming port.
	incoming secondary-called-number	Configure debug filtering for incoming called numbers from the second stage of a two-stage scenario.
	outgoing called-number	Configure debug filtering for outgoing called numbers.
	outgoing calling-number	Configure debug filtering for outgoing calling numbers.
	outgoing dialpeer	Configure debug filtering for the outgoing dial peer.
	outgoing port	Configure debug filtering for the outgoing port.
	show call filter match-list	Display call filter match lists.

incoming media local ipv4

To configure debug filtering for the incoming media local IPv4 addresses for the voice gateway receiving the media stream, use the **incoming media local ipv4** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming media local ipv4 *ip_address*

no incoming media local ipv4 *ip_address*

Syntax Description	<i>ip_address</i>	IP address of the local voice gateway
---------------------------	-------------------	---------------------------------------

Command Default	No default behavior or values	
------------------------	-------------------------------	--

Command Modes	Call filter match list configuration	
----------------------	--------------------------------------	--

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming media on the local voice gateway, which has IP address 192.168.10.255:

```
call filter match-list 1 voice
  incoming media local ipv4 192.168.10.255
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming media remote ipv4	Configure debug filtering for the incoming media IPv4 addresses for calls to the IP side from the remote IP device.
	incoming port	Configure debug filtering for the incoming port.
	outgoing media local ipv4	Configure debug filtering for the outgoing media IPv4 addresses for calls to the IP side from the local voice gateway.
	outgoing media remote ipv4	Configure debug filtering for the outgoing media IPv4 addresses for calls to the IP side from the remote IP device.
	outgoing port	Configure debug filtering for the outgoing port.
	show call filter match-list	Display call filter match lists.

incoming media remote ipv4

To configure debug filtering for the incoming media remote IPv4 addresses for the voice gateway receiving the media stream, use the **incoming media remote ipv4** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming media remote ipv4 *ip_address*

no incoming media remote ipv4 *ip_address*

Syntax Description

<i>ip_address</i>	IP address of the remote IP device
-------------------	------------------------------------

Command Default

No default behavior or values

Command Modes

Call filter match list configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.

Examples

The following example shows the voice call debug filter set to match incoming media on the remote IP device, which has IP address 192.168.10.255:

```
call filter match-list 1 voice
  incoming media remote ipv4 192.168.10.255
```

Related Commands

Command	Description
call filter match-list voice	Create a call filter match list for debugging voice calls.
debug condition match-list	Run a filtered debug on a voice call.
incoming media local ipv4	Configure debug filtering for the incoming media IPv4 addresses for calls to the IP side from the local voice gateway.
incoming port	Configure debug filtering for the incoming port.
outgoing media local ipv4	Configure debug filtering for the outgoing media IPv4 addresses for calls to the IP side from the local voice gateway
outgoing media remote ipv4	Configure debug filtering for the outgoing media IPv4 addresses for calls to the IP side from the remote IP device.
outgoing port	Configure debug filtering for the outgoing port.
show call filter match-list	Display call filter match lists.

incoming port

To configure debug filtering for the incoming port, use the **incoming port** command in call filter match list configuration mode. To disable, use the **no** form of this command.

Cisco 2600, Cisco 3600, and Cisco 3700 Series

incoming port { *slot-number/subunit-number/port* | *slot/port:ds0-group-no* }

no incoming port { *slot-number/subunit-number/port* | *slot/port:ds0-group-no* }

Cisco 2600 and Cisco 3600 Series with a High-Density Analog Network Module (NM-HDA)

incoming port { *slot-number/subunit-number/port* }

no incoming port { *slot-number/subunit-number/port* }

Cisco AS5300

incoming port *controller-number:D*

no incoming port *controller-number:D*

Cisco AS5400

incoming port *card/port:D*

no incoming port *card/port:D*

Cisco AS5800

incoming port { *shelf/slot/port:D* | *shelf/slot/parent:port:D* }

no incoming port { *shelf/slot/port:D* | *shelf/slot/parent:port:D* }

Cisco MC3810

incoming port *slot/port*

no incoming port *slot/port*

Syntax Description

Cisco 2600, Cisco 3600 Series and Cisco 3700 Series

<i>slot-number</i>	Number of the slot in the router in which the VIC is installed. Valid entries are 0 to 3, depending on the slot in which it has been installed.
<i>subunit-number</i>	Subunit on the VIC in which the voice port is located. Valid entries are 0 or 1.
<i>port</i>	Voice port number. Valid entries are 0 and 1.
<i>slot</i>	The router location in which the voice port adapter is installed. Valid entries are 0 to 3.

<i>port:</i>	Indicates the voice interface card location. Valid entries are 0 and 3.
<i>ds0-group-no</i>	Indicates the defined DS0 group number. Each defined DS0 group number is represented on a separate voice port. This allows you to define individual DS0s on the digital T1/E1 card.

Cisco AS5300

<i>controller-number</i>	T1 or E1 controller.
:D	D channel associated with ISDN PRI.

Cisco AS5400

<i>card</i>	Specifies the T1 or E1 card. Valid entries for the <i>card</i> argument are 1 to 7.
<i>port</i>	Specifies the voice port number. Valid entries are 0 to 7.
:D	Indicates the D channel associated with ISDN PRI.

Cisco AS5800

<i>shelf</i>	Specifies the T1 or E1 controller on the T1 card, or the T1 controller on the T3 card. Valid entries for the <i>shelf</i> argument are 0 to 9999.
<i>slot</i>	Specifies the T1 or E1 controller on the T1 card, or the T1 controller on the T3 card. Valid entries for the <i>slot</i> argument are 0 to 11.
<i>port</i>	Specifies the voice port number. <ul style="list-style-type: none"> • T1 or E1 controller on the T1 card—Valid entries are 0 to 11. • T1 controller on the T3 card—Valid entries are 1 to 28.
<i>:port</i>	Specifies the value for the <i>parent</i> argument. The valid entry is 0.
:D	Indicates the D channel associated with ISDN PRI.

Cisco MC3810

<i>slot</i>	The <i>slot</i> argument specifies the number slot in the router in which the VIC is installed. The only valid entry is 1.
<i>port</i>	The <i>port</i> variable specifies the voice port number. Valid interface ranges are as follows: <ul style="list-style-type: none"> • T1—ANSI T1.403 (1989), Telcordia TR-54016. • E1—ITU G.703. • Analog Voice—Up to six ports (FXS, FXO, E & M). • Digital Voice—Single T1/E1 with cross-connect drop and insert, CAS and CCS signaling, PRI QSIG. • Ethernet—Single 10BASE-T. • Serial—Two five-in-one synchronous serial (ANSI EIA/TA-530, EIA/TA-232, EIA/TA-449; ITU V.35, X.21, Bisync, Polled async).

Command Default

No default behavior or values

■ incoming port

Command Modes Call filter match list configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.

Examples

The following example shows the voice call debug filter set to match incoming port 1/1/1 on a Cisco 3660 voice gateway:

```
call filter match-list 1 voice
  incoming port 1/1/1
```

Related Commands

Command	Description
call filter match-list voice	Create a call filter match list for debugging voice calls.
debug condition match-list	Run a filtered debug on a voice call.
outgoing port	Configure debug filtering for the outgoing port.
show call filter match-list	Display call filter match lists.

incoming secondary-called-number

To configure debug filtering for incoming called numbers from the second stage of a two-stage scenario, use the **incoming secondary-called-number** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming secondary-called-number *string*

no incoming secondary-called-number *string*

Syntax Description

string

Series of digits that specify a pattern for the E.164 or private dialing plan telephone number. Valid entries are the digits 0 to 9, the letters A to D, and the following special characters:

- The asterisk (*) and pound sign (#) that appear on standard touchtone dial pads. On the Cisco 3600 series routers only, these characters cannot be used as leading characters in a string (for example, *650).
- Comma (,), which inserts a pause between digits.
- Period (.), which matches any entered digit (this character is used as a wildcard). On the Cisco 3600 series routers, the period cannot be used as a leading character in a string (for example, .650).
- Percent sign (%), which indicates that the preceding digit occurred zero or more times; similar to the wildcard usage.
- Plus sign (+), which indicates that the preceding digit occurred one or more times.

Note The plus sign used as part of a digit string is different from the plus sign that can be used in front of a digit string to indicate that the string is an E.164 standard number.

- Circumflex (^), which indicates a match to the beginning of the string.
- Dollar sign (\$), which matches the null string at the end of the input string.
- Backslash symbol (\), which is followed by a single character; matches that character. Can be used with a single character with no other significance (matching that character).
- Question mark (?), which indicates that the preceding digit occurred zero or one time.
- Brackets ([]), which indicate a range. A range is a sequence of characters enclosed in the brackets; only numeric characters 0 to 9 are allowed in the range.
- Parentheses (), which indicate a pattern and are the same as the regular expression rule.

Command Default

No default behavior or values

incoming secondary-called-number

Command Modes Call filter match list configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.

Usage Guidelines

Two-stage dialing occurs when the voice gateway presents a dial-tone before accepting digits. When a voice call comes into the Cisco IOS voice gateway, the voice port on the router is seized inbound by a PBX or CO switch. The voice gateway then presents a dial tone to the caller and collects digits until it can identify an outbound dial-peer. Dial-peer matching is done digit-by-digit whether the digits are dialed with irregular intervals by humans or in a regular fashion by telephony equipment sending the precollected digits. The voice gateway attempts to match a dial-peer after each digit is received.

Examples

The following example shows the voice call debug filter set to match incoming secondary called number 8288807:

```
call filter match-list 1 voice
  incoming secondary-called-number 8288807
```

Related Commands

Command	Description
call filter match-list voice	Create a call filter match list for debugging voice calls.
debug condition match-list	Run a filtered debug on a voice call.
incoming called-number (call filter match list)	Configure debug filtering for incoming called numbers.
incoming calling-number	Configure debug filtering for incoming calling numbers.
incoming dialpeer	Configure debug filtering for the incoming dial peer.
outgoing called-number	Configure debug filtering for outgoing called numbers.
outgoing calling-number	Configure debug filtering for outgoing calling numbers.
outgoing dialpeer	Configure debug filtering for the outgoing dial peer.
show call filter match-list	Display call filter match lists.

incoming signaling local ipv4

To configure debug filtering for the incoming signaling local IPv4 addresses for the gatekeeper managing the signaling, use the **incoming signaling local ipv4** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming signaling local ipv4 *ip_address*

no incoming signaling local ipv4 *ip_address*

Syntax Description	<i>ip_address</i>	IP address of the local voice gateway
---------------------------	-------------------	---------------------------------------

Command Default	No default behavior or values
------------------------	-------------------------------

Command Modes	Call filter match list configuration
----------------------	--------------------------------------

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming signaling on the local voice gateway, which has IP address 192.168.10.255:

```
call filter match-list 1 voice
  incoming signaling local ipv4 192.168.10.255
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming port	Configure debug filtering for the incoming port.
	incoming signaling remote ipv4	Configure debug filtering for the incoming signaling IPv4 addresses for calls to the IP side from the remote IP device.
	outgoing port	Configure debug filtering for the outgoing port.
	outgoing signaling local ipv4	Configure debug filtering for the outgoing signaling IPv4 addresses for calls to the IP side from the local voice gateway.
	outgoing signaling remote ipv4	Configure debug filtering for the outgoing signaling IPv4 addresses for calls to the IP side from the remote IP device.
	show call filter match-list	Display call filter match lists.

incoming signaling remote ipv4

To configure debug filtering for the incoming signaling remote IPv4 addresses for the gatekeeper managing the signaling, use the **incoming signaling remote ipv4** command in call filter match list configuration mode. To disable, use the **no** form of this command.

incoming signaling remote ipv4 *ip_address*

no incoming signaling remote ipv4 *ip_address*

Syntax Description	<i>ip_address</i>	IP address of the remote IP device
---------------------------	-------------------	------------------------------------

Command Default	No default behavior or values
------------------------	-------------------------------

Command Modes	Call filter match list configuration
----------------------	--------------------------------------

Command History	Release	Modification
	12.3(4)T	This command was introduced.

Examples The following example shows the voice call debug filter set to match incoming signaling on the remote IP device, which has IP address 192.168.10.255:

```
call filter match-list 1 voice
  incoming signaling remote ipv4 192.168.10.255
```

Related Commands	Command	Description
	call filter match-list voice	Create a call filter match list for debugging voice calls.
	debug condition match-list	Run a filtered debug on a voice call.
	incoming port	Configure debug filtering for the incoming port.
	incoming signaling local ipv4	Configure debug filtering for the incoming signaling IPv4 addresses for calls to the IP side from the local voice gateway.
	outgoing port	Configure debug filtering for the outgoing port.
	outgoing signaling local ipv4	Configure debug filtering for the outgoing signaling IPv4 addresses for calls to the IP side from the local voice gateway.
	outgoing signaling remote ipv4	Configure debug filtering for the outgoing signaling IPv4 addresses for calls to the IP side from the remote IP device.
	show call filter match-list	Display call filter match lists.

incoming uri

To specify the voice class used to match a VoIP dial peer to the uniform resource identifier (URI) of an incoming call, use the **incoming uri** command in dial peer configuration mode. To remove the URI voice class from the dial peer, use the **no** form of this command.

H.323 Session Protocol

incoming uri { **called** | **calling** } *tag*

no incoming uri { **called** | **calling** }

SIP Session Protocol

incoming uri { **from** | **request** | **to** } *tag*

no incoming uri { **from** | **request** | **to** }

Syntax Description

called	Destination URI in the H.225 message of an H.323 call.
calling	Source URI in the H.225 message of an H.323 call.
from	From header in an incoming SIP Invite message.
request	Request-URI in an incoming SIP Invite message.
to	To header in an incoming SIP Invite message.
<i>tag</i>	Alphanumeric label that uniquely identifies the voice class. This tag must be configured with the voice class uri command.

Command Default

No default behavior or values

Command Modes

Dial peer configuration

Command History

Release	Modification
12.3(4)T	This command was introduced.

Usage Guidelines

- Before you use this command, configure the voice class by using the **voice class uri** command.
- The keywords depend on whether the dial peer is configured for SIP with the **session protocol sipv2** command. The **from**, **request**, and **to** keywords are available only for SIP dial peers. The **called** and **calling** keywords are available only for dial peers using H.323.
- This command applies new rules for dial peer matching. [Table 27](#) and [Table 28](#) show the rules and the order in which they are applied when the **incoming uri** command is used. The gateway compares the dial-peer command to the call parameter in its search to match an inbound call to a dial peer. All dial peers are searched based on the first match criteria. Only if no match is found does the gateway move on to the next criteria.

Table 27 Dial-Peer Matching Rules for Inbound URI in SIP Calls

Match Order	Cisco IOS Command	Incoming Call Parameter
1	incoming uri request	Request-URI
2	incoming uri to	To URI
3	incoming uri from	From URI
4	incoming called-number	Called number
5	answer-address	Calling number
6	destination-pattern	Calling number
7	carrier-id source	Carrier-is associated with the call

Table 28 Dial-Peer Matching Rules for Inbound URI in H.323 Calls

Match Order	Cisco IOS Command	Incoming Call Parameter
1	incoming uri called	Destination URI in H.225 message
2	incoming uri calling	Source URI in H.225 message
3	incoming called-number	Called number
4	answer-address	Calling number
5	destination-pattern	Calling number
6	carrier-id source	Source carrier-id associated with the call

**Note**

Calls using an E.164 number, rather than a URI, use the previously existing dial-peer matching rules. For information, refer to the [Dial Peer Configuration on Voice Gateway Routers](#) document, Cisco IOS Voice Configuration Library, Release 12.3.

- You can use this command multiple times in the same dial peer with different keywords. For example, you can use **incoming uri called** and **incoming uri calling** in the same dial peer. The gateway then selects the dial peer based on the matching rules described in [Table 27](#) and [Table 28](#).

Examples

The following example matches on the destination TEL URI in incoming H.323 calls by using the ab100 voice class:

```
dial-peer voice 100 voip
  incoming uri called ab100
```

Related Commands

Command	Description
answer-address	Specifies calling number to match for a dial peer.
debug voice uri	Displays debugging messages related to URI voice classes.

Command	Description
destination-pattern	Specifies telephone number to match for a dial peer.
dial-peer voice	Enters dial peer configuration mode to create or modify a dial peer.
incoming called-number	Incoming called number matched to a dial peer.
session protocol	Specifies the session protocol in the dial peer for calls between the local and remote router.
show dialplan incall uri	Displays which dial peer is matched for a specific URI in an incoming voice call.
voice class uri	Creates or modifies a voice class for matching dial peers to calls containing a SIP or TEL URI.

index (voice class)

To define one or more numbers for a voice class called number, or a range of numbers for a voice class called number pool, use the **index** command in voice class configuration mode. To remove the number or range of numbers, use the **no** form of this command.

index *number called-number*

no index *number called-number*

Syntax Description	<i>number</i>	Digits that identify this index. Range is 1 to 2147483647.
	<i>called-number</i>	Specifies a called number, or a range of called numbers, in E.164 format.

Command Default No index is configured.

Command Modes Voice class configuration

Command History	Release	Modification
	12.4(11)T	This command was introduced.

Usage Guidelines Use this command to define one or more numbers for a voice class called number, or a range of numbers for a voice class called number pool. You can define multiple indexes for any inbound or outbound voice class called number or voice class called number pool.

When defining a range of numbers for a called number pool:

- The range of numbers must be in E.164 format.
- The beginning number and ending number must be the same length.
- The last digit of each number must be 0 to 9.
- Leading '+' (if used) must be defined from in the range of called numbers.

Examples

The following example shows the configuration for indexes in voice class called number pool 100:

```
voice class called number pool 100
  index 1 4085550100 - 4085550111 (Range of called numbers are 4085550100 up to 4085550111)
  index 2 +3227045000
```

The following example shows configuration for indexes in voice class called number outbound 222:

```
voice class called number outbound 222
  index 1 4085550101
  index 2 4085550102
  index 2 4085550103
```

Related Commands	Command	Description
	voice class called number	One or more called numbers configured for a voice class.

info-digits

To automatically prepend two information digits to the beginning of a dialed number associated with the given POTS dial peer, use the **info-digits** command in dial peer configuration mode. To keep the router from automatically prepending the two-digit information numbers to the beginning of the POTS dial peer, use the **no** form of this command.

info-digits *string*

no info-digits

Syntax Description	string	Specifies the two-digit prefix that the router will automatically prepend to the dialed number for the given POTS dial peer.
	Note	This string cannot contain any more or any less than two digits.

Command Default No default behavior or values.

Command Modes Dial peer configuration

Command History	Release	Modification
	12.2(1)T	This command was introduced on Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series routers, and Cisco AS5300 series universal access servers.

Usage Guidelines This command is designed to prepend a pair of information digits to the beginning of the dialed number string for the POTS dial peer that will enable you to dynamically redirect the outgoing call. The **info-digits** command is only available for POTS dial peers.

Examples The following example prepends the information number string 91 to the beginning of the dialed number for POTS dial peer 10:

```
dial-peer voice 10 pots
  info-digits 91
```

information-type

To select a specific information type for a Voice over IP (VoIP) or plain old telephone service (POTS) dial peer, use the **information-type** command in dial peer configuration mode. To remove the current information type setting, use the **no** form of this command. To return to the default configuration, use the **no** form of this command.

information-type { fax | voice | video }

no information-type

Syntax Description	Command	Description
	fax	The information type is set to store-and-forward fax.
	voice	The information type is set to voice. This is the default.
	video	The information type is set to video.

Command Default Voice

Command Modes Dial peer configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced on the Cisco 3600 series.
	12.0(4)XJ	This command was modified for store-and-forward fax.
	12.0(4)T	This command was integrated into Cisco IOS Release 12.0(4)T.
	12.1(1)T	This command was integrated into Cisco IOS Release 12.1(1)T.
	12.1(5)T	This command was integrated into Cisco IOS Release 12.1(5)T.
	12.2(4)T	This command was implemented on the Cisco 1750.
	12.2(8)T	This command was implemented on the following platforms: Cisco 1751, Cisco 2600 series, Cisco 3600 series, Cisco 3725, and Cisco 3745.
	12.4(11)T	The video keyword was added.

Usage Guidelines The **fax** keyword applies to both on-ramp and off-ramp store-and-forward fax functions.

Examples The following example shows the configuration for information type fax for VoIP dial peer 10:

```
dial-peer voice 10 voip
  information-type fax
```

The following example shows the configuration for information type video for POTS dial peer 22:

```
dial-peer voice 22 pots
  information-type video
```

■ information-type

Related Commands	Command	Description
	isdn integrate calltype all	Enables integrated mode (for data, voice, and video) on ISDN BRI or PRI interfaces.

inject guard-tone

To play out a guard tone with the voice packet, use the **inject guard-tone** command in voice-class configuration mode. To remove the guard tone, use the **no** form of this command.

inject guard-tone *frequency amplitude* [**idle**]

no inject guard-tone *frequency amplitude* [**idle**]

Syntax Description	frequency	Amplitude, in Hz, of the tone to be injected. Range is integers from 1 to 4000.
	amplitude	Amplitude, in dBm, of the tone to be injected. Range is integers from -50 to -3.
	idle	(Optional) Play out the inverse of the guard tone when there are no voice packets. Idle tone and guard tone are mutually exclusive.

Command Default No guard tone is injected.

Command Modes Voice-class configuration

Command History	Release	Modification
	12.3(4)XD	This command was introduced.
	12.3(7)T	This command was integrated into Cisco IOS Release 12.3(7)T.

Usage Guidelines The **inject guard-tone** command has an effect on an ear and mouth (E&M) analog or digital voice port only if the signal type for that port is Land Mobile Radio (LMR). The guard tone is played out with the voice packet to keep the radio channel up. Guard tones of 1950 Hz and 2175 Hz can be filtered out before the voice packet is sent from the digital signal processor (DSP) to the network using the **digital-filter** command.

Examples The following example configures a guard tone of 1950 Hz and -10 dBm to be played out with voice packets:

```
voice class tone-signal tone1
  inject guard-tone 2175 -30
```

Related Commands	Command	Description
	digital-filter	Specifies the digital filter to be used before the voice packet is sent from the DSP to the network.

inject pause

To specify a pause between injected tones, use the **inject pause** command in voice-class configuration mode. To remove the pause, use the **no** form of this command.

inject pause *index milliseconds*

no inject pause *index milliseconds*

Syntax Description		
	<i>index</i>	Order of pauses and tones. Range is integers from 1 to 10.
	<i>milliseconds</i>	Duration, in milliseconds, of the pause between injected tones. Range is integers from 10 to 500.

Command Default *milliseconds*: 0 milliseconds

Command Modes Voice-class configuration

Command History	Release	Modification
	12.3(4)XD	This command was introduced.
	12.3(7)T	This command was integrated into Cisco IOS Release 12.3(7)T.

Usage Guidelines The **inject pause** command has an effect on an ear and mouth (E&M) voice port only if the signal type for that port is Land Mobile Radio (LMR). Use this command to specify the pause between injected tones specified with the **inject tone** command. Use the *index* argument of this command in conjunction with the *index* argument of the inject tone command to specify the order of the pauses and tones.

Examples The following example configures a pause of 100 milliseconds after the injected tone:

```
voice class tone-signal 100
  inject tone 1 2000 0 200
  inject pause 2 100
```

Related Commands	Command	Description
	inject tone	Specifies a wakeup or frequency selection tone to be played out before the voice packet.

inject tone

To specify a wakeup or frequency selection tone to be played out before the voice packet, use the **inject tone** command in voice-class configuration mode. To remove the tone, use the **no** form of this command.

inject tone *index frequency amplitude duration*

no inject tone *index frequency amplitude duration*

Syntax Description		
<i>index</i>		Order of pauses and tones. Range is integers from 1 to 10.
<i>frequency</i>		Frequency, in Hz, of the tone to be injected. Range is integers from 1 to 4000.
<i>amplitude</i>		Amplitude, in dBm, of the tone to be injected. Range is integers from -30 to 3.
<i>duration</i>		Duration, in milliseconds, of the tone to be injected. Range is integers from 10 to 500.

Command Default No tone is injected.

Command Modes Voice-class configuration

Command History	Release	Modification
	12.3(4)XD	This command was introduced.
	12.3(7)T	This command was integrated into Cisco IOS Release 12.3(7)T.

Usage Guidelines The **inject tone** command has an effect on an ear and mouth (E&M) voice port only if the signal type for that port is Land Mobile Radio (LMR). Use this command with the **inject pause** command to configure wakeup and frequency selection tones. Use the *index* argument of this command in conjunction with the *index* argument of the **inject pause** command to specify the order of the pauses and tones.

If you configure injected tones with this command, be sure to use the **timing delay-voice tdm** command to configure a delay before the voice packet is played out. The delay must be equal to the sum of the durations of the injected tones and pauses in the tone-signal voice class.

Examples The following example configures a frequency selection tone to be played out before the voice packet:

```
voice class tone-signal 100
  inject tone 1 1950 3 150
  inject tone 2 2000 0 60
  inject pause 3 60
  inject tone 4 2175 3 150
  inject tone 5 1000 0 50
```

■ inject tone

Related Commands	Command	Description
	inject pause	Specifies a pause between injected tones.
	timing delay-voice tdm	Specifies the delay before a voice packet is played out.

input gain

To configure a specific input gain value or enable automatic gain control, use the **input gain** command in voice-port configuration mode. To disable the selected amount of inserted gain, use the **no** form of this command.

```
input gain {decibels | auto-control [auto-dbm]}
```

```
no input gain {decibels | auto-control [auto-dbm]}
```

Syntax Description

<i>decibels</i>	Gain, in decibels (dB), to be inserted at the receiver side of the interface. Range is integers from –27 to 16. The default is 0.
auto-control	Enable automatic gain control.
<i>auto-dbm</i>	(Optional) Target speech level, in decibels per milliwatt (dBm), to be achieved at the receiver side of the interface. Range is integers from –30 to 3. The default is –9.

Command Default

decibels: 0 decibels
auto-dbm: –9 dBm

Command Modes

Voice-port configuration

Command History

Release	Modification
11.3(1)T	This command was introduced.
11.3(1)MA	This command was implemented on the Cisco MC3810.
12.3(4)XD	The range of values for the <i>decibels</i> argument was increased.
12.3(7)T	This command was integrated into Cisco IOS Release 12.3(7)T.
12.3(14)T	This command was implemented on the Cisco 2800 series and Cisco 3800 series.
12.4(2)T	The auto-control keyword and <i>auto-dbm</i> argument were added.

Usage Guidelines

A system-wide loss plan must be implemented using both the **input gain** and **output attenuation** commands. You must consider other equipment (including PBXs) in the system when creating a loss plan. The default value for this command assumes that a standard transmission loss plan is in effect, meaning that there is typically a minimum attenuation of –6 dB between phones, especially if echo cancellers are present. Connections are implemented to provide 0 dB of attenuation when the **input gain** and **output attenuation** commands are configured with the default value of 0 dB.

You cannot increase the gain of a signal to the public switched telephone network (PSTN), but you can decrease it. If the voice level is too high, you can decrease the volume by either decreasing the input gain or increasing the output attenuation.

You can increase the gain of a signal coming into the router. If the voice level is too low, you can increase the input gain by using the **input gain** command.

Typical Land Mobile Radio (LMR) signaling systems send 0 dB out and expect –10 dB in. Setting output attenuation to 10 dB is typical. Output attenuation should be adjusted to provide the voice level required by the radio to produce correct transmitter modulation.

The **auto-control** keyword and *auto-dbm* argument are available on an ear and mouth (E&M) voice port only if the signal type for that port is LMR. The **auto-control** keyword enables automatic gain control, which is performed by the digital signal processor (DSP). Automatic gain control adjusts speech to a comfortable volume when it becomes too loud or too soft. Because of radio network loss and other environmental factors, the speech level arriving at a router from an LMR system could be very low. You can use automatic gain control to ensure that the speech is played back at a more comfortable level. Because the gain is inserted digitally, the background noise can also be amplified. Automatic gain control is implemented as follows:

- Output level: –9 dB
- Gain range: –12 dB to 20 dB
- Attack time (low to high): 30 milliseconds
- Attack time (high to low): 8 seconds

Examples

The following example inserts a 3-dB gain at the receiver side of the interface in the Cisco 3600 series router:

```
port 1/0/0
input gain 3
```

Related Commands

Command	Description
output attenuation	Configures a specific output attenuation value or enables automatic gain control for a voice port.

interface (RLM server)

To define the IP addresses of the Redundant Link Manager (RLM) server, use the **interface** command in interface configuration mode. To disable this function, use the **no** form of this command.

```
interface name-tag
```

```
no interface name-tag
```

Syntax Description	<i>name-tag</i>	Name to identify the server configuration so that multiple entries of server configuration can be entered.
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Command Default	Disabled
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Command Modes	Interface configuration
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Command History	Release	Modification
	11.3(7)	This command was introduced.

Usage Guidelines	Each server can have multiple entries of IP addresses or aliases.
-------------------------	---

Examples The following example configures the access-server interfaces for RLM servers “Loopback1” and “Loopback2”:

```
interface Loopback1
 ip address 10.1.1.1 255.255.255.255
 interface Loopback2
 ip address 10.1.1.2 255.255.255.255
 rlm group 1
 server r1-server
 link address 10.1.4.1 source Loopback1 weight 4
 link address 10.1.4.2 source Loopback2 weight 3
```

Related Commands	Command	Description
		clear interface
	clear rlm group	Clears all RLM group time stamps to zero.
	link (RLM)	Specifies the link preference.
	protocol rlm port	Reconfigures the port number for the basic RLM connection for the whole rlm-group.
	retry keepalive	Allows consecutive keepalive failures a certain amount of time before the link is declared down.

Command	Description
server (RLM)	Defines the IP addresses of the server.
show rlm group statistics	Displays the network latency of the RLM group.
show rlm group status	Displays the status of the RLM group.
show rlm group timer	Displays the current RLM group timer values.
shutdown (RLM)	Shuts down all of the links under the RLM group.
timer	Overwrites the default setting of timeout values.

interface Dchannel

To specify an ISDN D-channel interface and enter interface configuration mode, use the **interface Dchannel** command in global configuration mode.

interface Dchannel *interface-number*

Syntax Description

interface-number

Specifies the ISDN interface number.



Note

The *interface-number* argument depends on which controller the **rlm-group** subkeyword in the **pri-group timeslots** controller configuration command uses. For example, if the Redundant Link Manager (RLM) group is configured using the **controller e1 2/3** command, the D-channel interface command will be **interface Dchannel 2/3**.

Command Default

No D-channel interface is specified.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)B	This command was introduced.
12.2(15)T	This command was integrated into Cisco IOS Release 12.2(15)T.

Usage Guidelines

This command is used specifically in Voice over IP (VoIP) applications that require release of the ISDN PRI signaling time slot for RLM configurations.

Examples

The following example configures a D-channel interface for a Signaling System 7 (SS7)-enabled shared T1 link:

```
controller T1 1
  pri-group timeslots 1-3 nfas_d primary nfas_int 0 nfas_group 0 rlm-group 0
  channel group 23 timeslot 24
end

! D-channel interface is created for configuration of ISDN parameters:
interface Dchannel1
  isdn T309 4000
end
```

■ interface Dchannel

Related Commands

Command	Description
pri-group timeslots	Specifies an ISDN PRI group on a channelized T1 or E1 controller, and releases the ISDN PRI signaling time slot for environments that require that SS7-enabled VoIP applications share all slots in a PRI group.

interface event-log dump ftp

To enable the gateway to write the contents of the interface event log buffer to an external file, use the **interface event-log dump ftp** command in application configuration monitor mode. To reset to the default, use the **no** form of this command.

```
interface event-log dump ftp server[:port]/file username username password [encryption-type]
password
```

```
no interface event-log dump ftp server[:port]/file username username password
[encryption-type] password
```

Syntax Description

<i>server</i>	Name or IP address of FTP server where the file is located.
<i>port</i>	(Optional) Specific port number on server.
<i>file</i>	Name and path of file.
<i>username</i>	Username required to access file.
<i>encryption-type</i>	(Optional) The Cisco proprietary algorithm used to encrypt the password. Values are 0 or 7. To disable encryption enter 0; to enable encryption enter 7. If you specify 7, you must enter an encrypted password (a password already encrypted by a Cisco router).
<i>password</i>	Password required to access file.

Command Default

Interface event log buffer is not written to an external file.

Command Modes

Application configuration monitor

Command History

Release	Modification
12.3(14)T	This command was introduced to replace the call application interface event-log dump ftp command.

Usage Guidelines

This command enables the gateway to automatically write the interface event log buffer to the named file when the buffer becomes full. The default buffer size is 4 KB. To modify the size of the buffer, use the **interface event-log max-buffer-size** command. To manually flush the event log buffer, use the **interface dump event-log** command in privileged EXEC mode.

**Note**

- Enabling the gateway to write event logs to FTP could adversely impact gateway memory resources in some scenarios, for example, when:
 - The gateway is consuming high processor resources and FTP does not have enough processor resources to flush the logged buffers to the FTP server.
 - The designated FTP server is not powerful enough to perform FTP transfers quickly
 - Bandwidth on the link between the gateway and the FTP server is not large enough
 - The gateway is receiving a high volume of short-duration calls or calls that are failing

You should enable FTP dumping only when necessary and not enable it in situations where it might adversely impact system performance.

Examples

The following example specifies that interface event log are written to an external file named int_elogs.log on a server named ftp-server:

```
application
  monitor
  interface event-log dump ftp ftp-server/elogs/int_elogs.log username myname password 0
  mypass
```

The following example specifies that application event logs are written to an external file named int_elogs.log on a server with the IP address of 10.10.10.101:

```
application
  monitor
  interface event-log dump ftp 10.10.10.101/elogs/int_elogs.log username myname password
  0 mypass
```

Related Commands

Command	Description
call application interface event-log dump ftp	Enable the gateway to write the contents of the interface event log buffer to an external file.
interface dump event-log	Flushes the event log buffer for application interfaces to an external file.
interface event-log	Enables event logging for external interfaces used by voice applications.
interface event-log max-buffer-size	Sets the maximum size of the event log buffer for each application interface.
interface max-server-records	Sets the maximum number of application interface records that are saved.
show call application interface	Displays event logs and statistics for application interfaces.

interface event-log error only

To restrict event logging to error events only for application interfaces, use the **interface event-log error-only** command in application configuration monitor mode. To reset to the default, use the **no** form of this command.

interface event-log error-only

no interface event-log error-only

Syntax Description This command has no arguments or keywords.

Command Default All events are logged.

Command Modes Application configuration monitor

Command History	Release	Modification
	12.3(14)T	This command was introduced to replace the call application interface event-log error only command.

Usage Guidelines This command limits the severity level of the events that are logged; it does not enable logging. You must use this command with the **interface event-log** command, which enables event logging for all application interfaces.

Examples The following example enables event logging for error events only:

```
application
  monitor
    interface event-log error-only
```

Related Commands	Command	Description
	call application interface event-log error-only	Restricts event logging to error events only for application interfaces.
	interface event-log	Enables event logging for external interfaces used by voice applications.
	interface event-log max-buffer-size	Sets the maximum size of the event log buffer for each application interface.
	interface max-server-records	Sets the maximum number of application interface records that are saved.
	show call application interface	Displays event logs and statistics for application interfaces.

interface event-log max-buffer-size

To set the maximum size of the event log buffer for each application interface, use the **interface event-log max-buffer-size** command in application configuration monitor mode. To reset to the default, use the **no** form of this command.

interface event-log max-buffer-size *kbytes*

no interface event-log max-buffer-size

Syntax Description	<i>kbytes</i>	Maximum buffer size, in kilobytes. Range is 1 to 10. Default is 4.
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Command Default	4 KB
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Command Modes	Application configuration monitor
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Command History	Release	Modification
	12.3(14)T	This command was introduced to replace the call application interface event-log max-buffer-size command.

Usage Guidelines

If the event log buffer reaches the limit set by this command, the gateway allocates a second buffer of equal size. The contents of both buffers is displayed when you use the **show call application interface** command. When the first event log buffer becomes full, the gateway automatically appends its contents to an external FTP location if the **interface event-log dump ftp** command is used.

A maximum of two buffers are allocated for an event log. If both buffers are filled, the first buffer is deleted and another buffer is allocated for new events (buffer wraps around). If the **interface event-log dump ftp** command is configured and the second buffer becomes full before the first buffer is dumped, event messages are dropped and are not recorded in the buffer.

Examples

The following example sets the maximum buffer size to 8 KB:

```
application
  monitor
    interface event-log max-buffer-size 8
```

Related Commands	Command	Description
	call application interface event-log max-buffer-size	Sets the maximum size of the event log buffer for each application interface.
	interface dump event-log	Flushes the event log buffer for application interfaces to an external file.
	interface event-log dump ftp	Enables the gateway to write the contents of the interface event log buffer to an external file.

Command	Description
interface max-server-records	Sets the maximum number of application interface records that are saved.
show call application interface	Displays event logs and statistics for application interfaces.

interface max-server-records

To set the maximum number of application interface records that are saved, use the **interface max-server-records** command in application configuration monitor mode. To reset to the default, use the **no** form of this command.

interface max-server-records *number*

no interface max-server-records

Syntax Description	<i>number</i>	Maximum number of records to save. Range is 1 to 100. Default is 10.
Command Default	10	
Command Modes	Application configuration monitor	
Command History	Release	Modification
	12.3(14)T	This command was introduced to replace the call application interface max-server-records command.
Usage Guidelines	Only the specified number of records from the most recently accessed servers are kept.	
Examples	The following example sets the maximum saved records to 50:	
	<pre>application monitor interface max-server-records 50</pre>	
Related Commands	Command	Description
	call application interface max-server-records	Sets the maximum number of application interface records that are saved.
	interface event-log	Enables event logging for external interfaces used by voice applications.
	interface event-log max-buffer-size	Sets the maximum size of the event log buffer for each application interface.
	show call application interface	Displays event logs and statistics for application interfaces.

interface stats

To enable statistics collection for application interfaces, use the **interface stats** command in application configuration monitor mode. To reset to the default, use the **no** form of this command.

interface stats

no interface stats

Syntax Description This command has no arguments or keywords.

Command Default Statistics collection is disabled.

Command Modes Application configuration monitor

Command History	Release	Modification
	12.3(14)T	This command was introduced to replace the call application interface stats command.

Usage Guidelines To display the interface statistics enabled by this command, use the **show call application interface** command. To reset the interface counters to zero, use the **clear call application interface** command.

Examples The following example enables statistics collection for application interfaces:

```
application
  monitor
  interface stats
```

Related Commands	Command	Description
	call application interface stats	Enables statistics collection for application interfaces.
	clear call application interface	Clears application interface statistics or event logs.
	interface event-log	Enables event logging for external interfaces used by voice applications.
	show call application interface	Displays event logs and statistics for application interfaces.
	stats	Enables statistics collection for voice applications.

ip circuit

To create carrier IDs on an IP virtual trunk group, and create a maximum capacity for the IP group, use the **ip circuit** command. To remove a trunk group or maximum capacity, use the **no** form of the command.

```
ip circuit { carrier-id carrier-name [reserved-calls reserved] | max-calls maximum-calls | default
  { only | name carrier-name } }
```

```
no ip circuit { carrier-id carrier-name | default { only | name carrier-name } }
```

Syntax Description

carrier-id	Sets the IP circuit associated with a specific carrier.
<i>carrier-name</i>	Defines an IP circuit using the specified name as the circuit ID.
reserved-calls <i>reserved</i>	(Optional) Specifies the maximum number of calls for the circuit ID. Default value is 200.
max-calls <i>maximum-calls</i>	Sets the number of maximum aggregate H.323 IP circuit carrier call legs. Default value is 1000.
default only	Creates a single carrier using the default carrier name.
default name	Changes the default circuit name.
<i>carrier-name</i>	Default carrier name.

Command Default

If this command is not specified, no IP carriers and no maximum call leg values are defined.

Command Modes

H.323 configuration.

Command History

Release	Modification
12.2(13)T3	This command was introduced.

Usage Guidelines

You can use the **ip circuit** command only when no calls are active. You can define multiple carrier IDs, and the ordering does not matter. IP circuit default only is mutually exclusive with defining carriers with circuit carrier id.

If **ip circuit default only** is specified, the maximum calls value is set to 1000.

Examples

The following example specifies a default circuit and maximum number of calls:

```
voice service voip
  no allow-connections any to pots
  no allow-connections pots to any
  allow-connections h323 to h323
  h323
  ip circuit max-calls 1000
  ip circuit default only
```

The following example specifies a default carrier and incoming source carrier:

```
voice service voip
no allow-connections any to pots
no allow-connections pots to any
allow-connections h323 to h323
h323
  ip circuit carrier-id AA reserved-calls 200

  ip circuit max-calls 1000
```

Related Commands

Command	Description
show crm	Displays some of the values set by this command.
voice-source group	Assigns a name to a set of source IP group characteristics, which are used to identify and translate an incoming VoIP call.

ip precedence (dial peer)

To set IP precedence (priority) for packets sent by the dial peer, use the **ip precedence** command in dial peer configuration mode. To reset to the default, use the **no** form of this command.

ip precedence *number*

no ip precedence *number*

Syntax Description	<i>number</i>	Integer specifying the IP precedence value. Range is 0 to 7. A value of 0 means that no precedence (priority) has been set. The default is 0.
---------------------------	---------------	---

Command Default	The default value for this command is zero (0)
------------------------	--

Command Modes	Dial peer configuration
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Command History	Release	Modification
	11.3(1)NA	This command was introduced on the following platforms: Cisco 2500 series, Cisco 3600 series, and Cisco AS5300.

Usage Guidelines	Use this command to configure the value set in the IP precedence field when voice data packets are sent over the IP network. This command should be used if the IP link utilization is high and the quality of service for voice packets needs to have a higher priority than other IP packets. This command should also be used if RSVP is not enabled and the user would like to give voice packets a higher priority than other IP data traffic.
-------------------------	---

This command applies to VoIP peers.

Examples	The following example sets the IP precedence to 5:
-----------------	--

```
dial-peer voice 10 voip
 ip precedence 5
```

ip qos dscp

To set the DSCP for the quality of service, use the **ip qos dscp** command in dial peer configuration mode. To disable DSCP, use the **no** form of this command.

```
ip qos dscp [number | set-af | set-cs | default | ef] [media | signaling | video {rsvp-none | rsvp-pass | rsvp-fail}]
```

```
no ip qos dscp [number | set-af | set-cs | default | ef] [media | signaling | video {rsvp-none | rsvp-pass | rsvp-fail}]
```

Syntax Description	
<i>number</i>	DSCP value. Valid entries are from 0 to 63.
<i>set-af</i>	Sets DSCP to assured forwarding bit pattern. <ul style="list-style-type: none"> • af11—bit pattern 001010 • af12—bit pattern 001100 • af13—bit pattern 001110 • af21—bit pattern 010010 • af22—bit pattern 010100 • af23—bit pattern 010110 • af31—bit pattern 011010 • af32—bit pattern 011100 • af33—bit pattern 011110 • af41—bit pattern 100010 • af42—bit pattern 100100 • af43—bit pattern 100110
<i>set-cs</i>	Sets DSCP to class-selector codepoint. <ul style="list-style-type: none"> • cs1—codepoint 1 (precedence 1) • cs2—codepoint 2 (precedence 2) • cs3—codepoint 3 (precedence 3) • cs4—codepoint 4 (precedence 4) • cs5—codepoint 5 (precedence 5) • cs6—codepoint 6 (precedence 6) • cs7—codepoint 7 (precedence 7)
default	Sets DSCP to default bit pattern of 000000.
ef	Sets DSCP to expedited forwarding bit pattern 101110.
media	Applies DSCP to media payload packets.
signaling	Applies DSCP to signaling packets.
video rsvp-none	Applies DSCP to video stream with no RSVP reservations.
video rsvp-pass	Applies DSCP to video stream with successful RSVP reservations.
video rsvp-fail	Applies DSCP to video stream with failed RSVP reservations.

Command Default DSCP is set to bit pattern **af41**.

Command Modes Dial peer configuration

Command History	Release	Modification
	12.2(2)T	This command was introduced.It replaced the ip precedence (dial peer) command
	12.3(4)T	Keywords were added to support DSCP configuration for video streams.

Usage Guidelines To configure voice and signaling traffic priorities, use the **ip qos dscp** command. Recommended values are **ip qos dscp ef** media and **ip qos dscp af31** signaling. You must use the **ip rsvp bandwidth** command to enable RSVP on an IP interface before you can specify RSVP QoS.

Examples The following example specifies DSCP is set to precedence 1 and is applied to media payload packets.

```
dial-peer voice 1 voip
 ip qos dscp cs1 media
```

The following example specifies the DSCP for video streams:

```
dial-peer voice 100 voip
 ip qos dscp cs5 video rsvp-pass
 ip qos dscp cs6 video rsvp-fail
```

Related Commands	Command	Description
	call rsvp-sync	Enables synchronization between Resource Reservation Protocol (RSVP) signaling and the voice signaling protocol.
	ip rsvp signalling dscp	Specifies the DSCP to be used on all RSVP messages transmitted on an interface.

ip rtcp report interval

To configure the average reporting interval between subsequent Real-Time Control Protocol (RTCP) report transmissions, use the **ip rtcp report interval** command in global configuration mode. To reset to the default, use the **no** form of this command.

ip rtcp report interval *value*

no ip rtcp report interval

Syntax Description	<i>value</i>	Average interval for RTCP report transmissions, in ms. Range is 1 to 65535. Default is 5000.
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Command Default	5000 ms
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Command Modes	Global configuration
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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. Support for the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 is not included in this release.	
12.2(11)T	This command was implemented on the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5800.	

Usage Guidelines This command configures the average interval between successive RTCP report transmissions for a given voice session. For example, if the *value* argument is set to 25,000 milliseconds, an RTCP report is sent every 25 seconds, on average.

For more information about RTCP, see RFC 1889, [RTP: A Transport Protocol for Real-Time Applications](#).

Examples The following example sets the reporting interval to 5000 ms:

```
Router(config)# ip rtcp report interval 5000
```

Related Commands	Command	Description
	debug ccsip events	Displays all SIP SPI event tracing and traces the events posted to SIP SPI from all interfaces.
	timer receive-rtcp	Enables the RTCP timer and configures a multiplication factor for the RTCP timer interval.

ip udp checksum

To calculate the UDP checksum for voice packets sent by the dial peer, use the **ip udp checksum** command in dial peer configuration mode. To disable this feature, use the **no** form of this command.

ip udp checksum

no ip udp checksum

Syntax Description This command has no arguments or keywords.

Command Default Disabled

Command Modes Dial peer configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced on the Cisco 3600 series.

Usage Guidelines Use this command to enable UDP checksum calculation for each of the outbound voice packets. This command is disabled by default to speed up the transmission of the voice packets. If you suspect that the connection has a high error rate, you should enable this command to prevent corrupted voice packets forwarded to the digital signal processor (DSP).

This command applies to VoIP peers.



Note To maintain performance and scalability of the Cisco 5850 when using images before 12.3(4)T, enable no more than 10% of active calls with UDP checksum.

Examples The following example calculates the UDP checksum for voice packets sent by dial peer 10:

```
dial-peer voice 10 voip
 ip udp checksum
```

Related Commands	Command	Description
	loop-detect	Enables loop detection for T1 for Voice over ATM, Voice over Frame Relay, and Voice over HDLC.

irq global-request

To configure the gatekeeper to send information-request (IRQ) messages with the call-reference value (CRV) set to zero, use the **irq global-request** command in gatekeeper configuration mode. To disable the gatekeeper from sending IRQ messages, use the **no** form of this command.

irq global-request

no irq global-request

Syntax Description This command has no arguments or keywords.

Command Default The gatekeeper sends IRQ messages with the CRV set to zero.

Command Modes Gatekeeper configuration

Command History	Release	Modification
	12.2(11)T	This command was introduced on the Cisco 3600 series.

Usage Guidelines Use this command to disable the gatekeeper from sending an IRQ message with the CRV set to zero when the gatekeeper requests the status of all calls after its initialization. Disabling IRQ messages can eliminate unnecessary information request response (IRR) messages if the reconstruction of call structures can be postponed until the next IRR or if the call information is no longer required because calls are terminated before the periodic IRR message is sent. Disabling IRQ messages is advantageous if direct bandwidth control is not used in the gatekeeper.

Examples The following example shows that IRQ messages are not sent from the gatekeeper:

```
.
.
.
lrq reject-resource-low
no irq global-request
timer lrq seq delay 10
timer lrq window 6
timer irr period 6
no shutdown
.
.
.
```

Related Commands	Command	Description
	timer irr period	Configures the IRR timer.