Configurable Pass-Through of SIP INVITE Parameters

The Configurable Pass-Through of SIP INVITE Parameters feature enables the Cisco Unified Border Element (Cisco UBE) platform to pass through end-to-end headers at a global or dial peer level that are not processed or understood in a Session Initiation Protocol (SIP) trunk to SIP trunk scenario. The pass-through functionality includes all or only a configured list of unsupported or non-mandatory SIP headers and all unsupported content or Multipurpose Internet Mail Extensions (MIME) types.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Prerequisites for Configurable Pass-Through of SIP INVITE Parameters

- Configuring the **media flow-around** command is required for Session Description Protocol (SDP) pass-through. When flow-around is not configured, the flow-through mode of SDP pass-through will be functional.

- When the dial-peer media flow mode is asymmetrically configured, the default behavior is to fall back to SDP pass-through with flow-through.

Cisco Unified Border Element

- Cisco IOS Release 15.0(1)M or a later release must be installed and running on your Cisco Unified Border Element.

Cisco Unified Border Element (Enterprise)

- Cisco IOS XE Release 3.1S or a later release must be installed and running on your Cisco ASR 1000 Series Router.

Restrictions for Configurable Pass-Through of SIP INVITE Parameters

When Session Description Protocol (SDP) pass-through is enabled, some of the interworking that the Cisco Unified Border Element currently performs cannot be activated. These features include:

- Delayed Offer to Early Offer Interworking
- Supplementary Services with Triggered Invites
- Flow-around calls will not work with SDP pass through
- DTMF Interworking Scenarios
- Fax Interworking/QoS Negotiation
- Transcoding

For configurable pass-through of SIP INVITE parameters, the following features for Session Initiation Protocol (SIP)-SIP dial-peer rotary calls are not supported:

- Unsupported header pass-through functionality for SIP-SIP dial-peer rotary calls
- Unsupported content pass-through functionality for SIP-SIP dial-peer rotary calls

Note   With CSCty41575, the unsupported header and content pass-through functionalities mentioned above are addressed.

Information About Configurable Pass-Through of SIP INVITE Parameters

Cisco Unified Border Element (Cisco UBE) does not support end-to-end media negotiation between the two endpoints that establish a call session. This is a limitation when the endpoints intend to negotiate codec or payload types that Cisco UBE does not process because, currently, unsupported payload types are not negotiated by Cisco UBE. Unsupported content types include text or plain, image or jpeg and application or resource-lists and XML. To address this problem, Session Description Protocol (SDP) is configured to pass transparently through Cisco UBE so that both the remote ends can negotiate media independent of Cisco UBE.

Session Description Protocol (SDP) pass-through is addressed in two modes:

- Flow-through—Cisco UBE plays no role in the media negotiation. It terminates and reoriginates the Real-time Transport Protocol (RTP) packets irrespective of the content type negotiated by both endpoints. Flow-through supports address hiding and Network Address Translation (NAT) traversal.

- Flow-around—Cisco UBE neither plays a part in media negotiation nor does it terminate and reoriginate media. Media negotiation and media exchange is completely end-to-end.

Unsupported Headers

You can configure Cisco Unified Border Element (Cisco UBE) to pass through unsupported headers (headers Cisco UBE cannot understand) such as SERVER, CALL-INFO, SUPPORTED, ALLOW-EVENTS, RESOURCE-PRIORITY and so on.

Non-mandatory Headers

You can configure Cisco UBE to pass through headers that are not mandatory (headers that Cisco UBE does not pass through by default). You can configure a list of headers to be passed across. The list can contain any header except the mandatory headers shown in the table below.

Table 1: Mandatory Headers List

Mandtory Headers List		
ALSO	AUTHORIZATION	CALLID
CC_DIVERSION	CC_REDIRECT	CONTACT
CONTENT_DISP	CONTENT_ENCODING	CONTENT_LENGTH
CONTENT_TYPE	CISCO_GCID	CISCO_GUID

Mandtory Headers List		
CSEQ	DATE	FROM
MAX_FORWARDS	MIME_VER	MIME_VER_VAL
PRIVACY	PRIVACY_ASSERTED_ID	PRIVACY_PREFERRED_ID
PROXY_AUTH	PROXY_AUTHENTICATE	RECORD_ROUTE
ROUTE	RTP_STAT	SESSION_EXPIRES
TIMESTAMP	TO	USER_AGENT
VIA	WWW_AUTHENTICATE	

How to Configure Configurable Pass-Through of SIP INVITE Parameters

Enabling Configurable Pass-Through of SIP INVITE Parameters (Global Level)

Perform this task to configure unsupported content pass-through on a Cisco UBE platform at the global level.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice service voip**
4. **sip**
5. **pass-thru** {**content** {**sdp** | **unsupp**} | **headers** {**unsupp** | *list-tag*}}
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.

	Command or Action	**Purpose**
Step 2	**configure terminal** **Example:** Device# configure terminal	Enters global configuration mode.
Step 3	**voice service voip** **Example:** Device(config)# voice service voip	Enters voice service VoIP configuration mode.
Step 4	**sip** **Example:** Device(conf-voi-serv)# sip	Enters SIP configuration mode.
Step 5	**pass-thru** {**content** {**sdp** | **unsupp**} | **headers** {**unsupp** | *list-tag*}} **Example:** Device(conf-serv-sip)# pass-thru content unsupp	Passes the Session Description Protocol (SDP) transparently from in-leg to the out-leg with no media negotiation.
Step 6	**end** **Example:** Device(conf-serv-sip)# end	Ends the current configuration session and returns to privileged EXEC mode.

Enabling Configurable Pass-Through of SIP INVITE Parameters (Dial Peer Level)

Perform this task to configure unsupported content pass-through on a Cisco UBE platform at the dial-peer level.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **dial-peer voice** *tag* **voip**
4. **voice-class sip pass-thru** {**content** {**sdp** \| **unsupp**} \| **headers** {**unsupp** \| **list** *tag*}} [**system**]
5. **end**

DETAILED STEPS

	Command or Action	**Purpose**
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**dial-peer voice** *tag* **voip** **Example:** `Device(config)# dial-peer voice 2 voip`	Enters dial peer VoIP configuration mode.
Step 4	**voice-class sip pass-thru** {**content** {**sdp** | **unsupp**} | **headers** {**unsupp** | **list** *tag*}} [**system**] **Example:** `Device(config-dial-peer)# voice-class sip pass-thru content sdp`	Passes the Session Description Protocol (SDP) transparently from in-leg to the out-leg with no media negotiation.
Step 5	**end** **Example:** `Device(config-dial-peer)# end`	Ends the current configuration session and returns to privileged EXEC mode.

Configuring a Route String Header Pass-Through Using Pass-Through List

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice class sip-hdr-passthrulist** *list-tag*
4. **passthru-hdr** *header-name*
5. **passthru-hdr-unsupp**
6. **exit**
7. **dial-peer voice** *tag* **voip**
8. **description** *string*
9. **session protocol sipv2**
10. **voice-class sip pass-thru headers** *list-tag*
11. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.

Step 3	**voice class sip-hdr-passthrulist** *list-tag*
	
	Example:
	`Device(config)# voice class`
	`sip-hdr-passthrulist 101`
		Configures list of headers to be passed through and enters voice class configuration mode.

Step 4	**passthru-hdr** *header-name*
	
	Example:
	`Device(config-class)# passthru-hdr`
	`Resource-Priority`
		Adds header name to the list of headers to be passed through. Repeat this step for every non-mandatory header.

Step 5	**passthru-hdr-unsupp** **Example:** `Device(config-class)# passthru-hdr-unsupp`	Adds the unsupported headers to the list of headers to be passed through.

	Command or Action	**Purpose**
Step 6	**exit** **Example:** Device(config-class)# exit	Exits the current configuration session and returns to global configuration mode.
Step 7	**dial-peer voice** *tag* **voip** **Example:** Device(config)# dial-peer voice 1 voip	Enters dial peer voice configuration mode.
Step 8	**description** *string* **Example:** Device(config-dial-peer)# description inbound-dialpeer	Adds descriptive information about the dial peer.
Step 9	**session protocol sipv2** **Example:** Device(config-dial-peer)# session protocol sipv2	Configures the IETF Session Initiation Protocol (SIP) for the dial peer.
Step 10	**voice-class sip pass-thru headers** *list-tag* **Example:** Device(config-dial-peer)# voice-class sip pass-thru headers 101	Enables call routing based on the destination route string for a dial peer.
Step 11	**end** **Example:** Device(config-dial-peer)# end	Exits the current configuration mode and returns to privileged EXEC mode.

Configuration Examples for Configurable Pass-Through of SIP INVITE Parameters

Example: Enabling Configurable Pass-Through of SIP INVITE Parameters (Global Level)

```
Device> enable
Device# configure terminal
Device(config)# voice service voip
Device(conf-voi-serv)# sip
```

```
Device(conf-serv-sip)# pass-thru content unsupp
Device(conf-serv-sip)# end
```

Example: Enabling Configurable Pass-Through of SIP INVITE Parameters (Dial Peer Level)

```
Device> enable
Device# configure terminal
Device(config)# dial-peer voice 2 voip
Device(config-dial-peer)# voice-class sip pass-thru content sdp
Device(config-dial-peer)# end
```

Example: Configuring a Route String Header Pass-Through Using Pass-Through List

```
Device> enable
Device# configure terminal
Device(config)# voice class sip-hdr-passthrulist 101
Device(config-class)# passthru-hdr X-hdr-1
Device(config-class)# passthru-hdr Resource-Priority
Device(config-class)# passthru-hdr-unsupp
Device(config-class)# exit
Device(config)# dial-peer voice 1 voip
Device(config-dial-peer)# description inbound-dialpeer
Device(config-dial-peer)# session protocol sipv2
Device(config-dial-peer)# voice-class sip pass-thru headers 101
Device(config-dial-peer)# end
```

Additional References for Configurable Pass-Through of SIP INVITE Parameters

Related Documents

Related Topic	Document Title
Voice commands	Cisco IOS Voice Command Reference
Cisco IOS commands	Cisco IOS Master Command List, All Releases
SIP configuration tasks	SIP Configuration Guide, Cisco IOS Release 15M&T

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/support

Feature Information for Configurable Pass-Through of SIP INVITE Parameters

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

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Table 2: Feature Information for Configurable Pass-Through of SIP INVITE Parameters

Feature Name	Releases	Feature Information
Configurable Unsupported Header using Pass-Through List	15.4(1)T	This feature extends the Pass-Through List functionality to specify the pass-through of unsupported headers as well. The following command was introduced:**passthru-hdr-unsupp**.

Feature Name	Releases	Feature Information
Configurable Route-String Header Pass-Through using a Pass Through List	15.3(3)M	This feature enables the Cisco UBE to pass through end-to-end headers that are not processed or understood in a SIP trunk to SIP trunk scenario by specifying the headers to be passed through in a pass through list. The pass through functionality will includes only the configured list of non-mandatory SIP headers. The following commands were introduced or modified: **passthru-hdr**, **voice class sip-hdr-passthrulist**.
Configurable Pass-Through of SIP INVITE Parameters	15.0(1)M	This feature enables the Cisco UBE to pass through end-to-end headers that are not processed or understood in a SIP trunk to SIP trunk scenario. The pass through functionality includes all or only a configured list of unsupported or non-mandatory SIP headers, and all unsupported content/MIME types. The following commands were introduced or modified: **pass-thru** and **voice-class sip pass-thru**.