Dynamic Refer Handling

When a dial-peer match occurs, CUBE passes the REFER message from an in leg to an out leg. Also, the host part of the Refer-to header is modified with the IP address.

The Dynamic REFER handling feature provides configurations to pass across or consume the REFER message. When an endpoint invokes a supplementary service such as a call transfer, the endpoint generates and sends an in-dialog REFER request towards the Cisco UBE. If the REFER message is consumed, an INVITE is sent towards refer-to dial-peer

Feature Information for Dynamic REFER Handling

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.

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

Table 1: Feature Information for Dynamic REFER Handling

Feature Name	Releases	Feature Information
REFER Consume (Enhancements)	IOS 15.5(1)T IOS XE 3.14.0 S	REFER Consume (Enhancements) provides additional configurations to conditionally forward the REFER message. The following commands were introduced: **refer consume**.

Feature Name	Releases	Feature Information
Dynamic REFER Handling	IOS 15.2(1)T IOS XE Release 3.7S	The Dynamic REFER handling feature provides configurations to pass across or consume the REFER message The following commands were introduced: **referto-passing**, **voice-class sip referto-passing**.

Prerequisites

- Transcoding configuration is required on the CUBE for midcall transcoder insertion, deletion, or modification during call transfers.

Restrictions

- Only Session Initiation Protocol (SIP)-to-SIP call transfers are supported.

- Call escalation and de-escalation are not supported.

- Video transcoding is not supported.

- Session Description Protocol (SDP) pass-through is not supported.

- In REFER consume scenario, if TCL script is enabled, then **supplementary-service media-renegotiate** command should not be configured.

Configuring REFER Passthrough with Unmodified Refer-to

This task configures the passthrough of REFER message from the in leg to the out leg on a dial-peer match. A REFER is sent towards inbound dial peer. This task also ensures that the host part of the Refer-to header is unmodified and not changed to the IP address during passthrough.

supplementary service refer	Results
yes	REFER is passed through from the in leg to the out leg
no	INVITE is sent towards refer-to dial-peer

Note This configurations in this task can be overridden by the **refer consume** command. Refer to the *Configuring REFER Consumption* task for more information.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. Configure REFER passthrough:
   - **supplementary-service sip refer** in global VoIP configuration mode.
   - **supplementary-service sip refer** in dial-peer configuration mode.
4. (Optional) Configure unmodified Refer-to:
   - **referto-passing** in Global VoIP SIP configuration mode.
   - **voice-class sip referto-passing** [**system**] in dial-peer configuration mode.
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	Configure REFER passthrough: • **supplementary-service sip refer** in global VoIP configuration mode. • **supplementary-service sip refer** in dial-peer configuration mode. **Example:** In Global VoIP configuration mode: Device(config)# voice service voip Device(conf-voi-serv)# supplementary-service sip refer **Example:** In dial-peer configuration mode: Device(config)# dial-peer voice 22 voip Device(config-dial-peer)# supplementary-service sip refer	Configures REFER passthrough. A REFER is sent towards the inbound dial peer
Step 4	(Optional) Configure unmodified Refer-to: • **referto-passing** in Global VoIP SIP configuration mode.	Ensures that the refer-to header is unmodified and not changed to the IP address during passthrough

Command or Action	Purpose
• **voice-class sip referto-passing** [**system**] in dial-peer configuration mode. **Example:** In Global VoIP configuration mode: ``` Device(config)# voice service voip Device(conf-voi-serv)# sip Device(conf-serv-sip)# referto-passing ``` **Example:** In dial-peer configuration mode: ``` Device(config)# dial-peer voice 22 voip Device(config-dial-peer)# voice-class sip referto-passing ```	
Step 5	**end**	Exits to privileged EXEC mode.

Configuring REFER Consumption

This task configures the consumption of REFER message on a dial-peer match. An INVITE is sent towards the Refer-to dial peer.

Table 2: Configurations for REFER Consumption

supplementary service refer	refer consume	Results
yes	no	REFER is sent towards inbound dial-peer
yes	yes	INVITE is sent towards refer-to dial-peer
no	no	INVITE is sent towards refer-to dial-peer
no	yes	INVITE is sent towards refer-to dial-peer

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. Enter one of the following:
   - **no supplementary-service sip refer** in global VoIP configuration mode.
   - **no supplementary-service sip refer** in dial-peer configuration mode.
4. **refer consume** in global VoIP configuration mode.
5. (Optional) **supplementary-service media-renegotiate** in global VoIP configuration mode.
6. (Optional) Enter one of the following:
   - **xfer target** in global VoIP configuration mode.
   - **xfer target** in voice class tenant configuration mode.

7. 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	Enter one of the following: • **no supplementary-service sip refer** in global VoIP configuration mode. • **no supplementary-service sip refer** in dial-peer configuration mode. **Example:** In global VoIP configuration mode: Device(config)# voice service voip Device(conf-voi-serv)# no supplementary-service sip refer **Example:** In dial-peer configuration mode: Device(config)# dial-peer voice 22 voip Device(config-dial-peer)# no supplementary-service sip refer	Configures REFER consumption. An INVITE is sent towards the Refer-to dial peer.
Step 4	**refer consume** in global VoIP configuration mode. **Example:** In dial-peer configuration mode: Device(config)# dial-peer voice 22 voip Device(config-dial-peer)# refer consume	Configures REFER consumption.
Step 5	(Optional) **supplementary-service media-renegotiate** in global VoIP configuration mode. **Example:** In global VoIP configuration mode: Device(config)# voice service voip Device(conf-voi-serv)# supplementary-service media-renegotiate	Enables end-to-end media renegotiation during the call transfer in REFER consumption mode.

	Command or Action	Purpose

Step 6	(Optional) Enter one of the following:
	
	    • **xfer target** in global VoIP configuration mode.
	    • **xfer target** in voice class tenant configuration mode.
	
	Example:
	
	In global VoIP configuration mode:
	
	`router(config)#sip-ua`
	`router(config-sip-ua)#xfer target refer-to`
	
	Example:
	
	In voice class tenant configuration mode:
	
	`Router(config)#voice class tenant 1`
	`Router(config-class)#xfer target refer-to`
		To route the INVITE to refer-to host address.

Step 7	**end**	Exits to privileged EXEC mode.

Troubleshooting Tips

Use any of the following debug commands:

- **debug ccsip all**

- **debug voip ccapi inout**

- **debug sccp messages**

- **debug voip application supplementary-service**

- **debug voip application state**

- **debug voip application media negotiation**