# Media Path

The Media Path feature allows you to configure the path taken by media after a call is established. You can configure media path in the following modes:

- Media flow-through

- Media flow-around

- Media anti-trombone

# Feature Information for Media Path

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 Configuring Path of Media*

| Feature Name | Releases | Feature Information |
|---|---|---|
| Configuring Media Path | 12.4(3), 12.4(24)T, 15.0(1)M | The Media Path feature allows you to configure the path taken by media after a call is established.<br><br>The following commands were introduced by this feature: **media-flow around, media flow-through, media anti-trombone**. |

# Media Flow-Through

Media Flow-Through is a media path mode where media and signaling packets terminate and originate on CUBE. As CUBE is an active participant of the call, this mode is recommended when connected outside an enterprise (untrusted endpoints).

**Figure 1: Media Flow-Through Mode**



Media Flow-Through
Signaling and media is terminated by CUBE
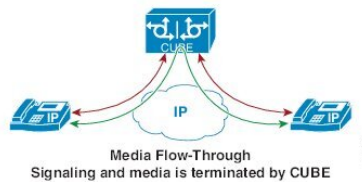
## Restrictions for Media Flow-Through

• Media flow-through for Delayed-Offer to Early-Offer audio and video calls is not supported.

**Note**  Ciso UBE supports Media-Flow Through video. However, Cisco UBE does not know the video SDP parameters that the various video end points support. Cisco UBE supports basic H264 SDP for Media-Flow Through video.

Cisco UBE supports the following video codecs:

- H261
- H263
- H263+
- H264
- MPEG-4

**Note**  Ciso UBE supports the feature SDP pass-thru in Media-Flow Through. This feature allows Cisco UBE to support a video SDP parameter. The following example explains SDP pass-thru configuration.

```
Router#conf t
Router(config)#voice service voip
Router(config-voi-serv)sip
Router(config-voi-serv)pass-thru content sdp
```

# Configure Media Flow-Through

## SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. Use one of the following commands to configure media flow-through:

    - **media flow-through** in dial-peer configuration mode
    - **media flow-through** in global VoIP configuration mode

4. **end**

## DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br><br>**Example:**<br><br>`Device> enable` | Enables privileged EXEC mode. Enter your password if prompted. |
| **Step 2** | **configure terminal**<br><br>**Example:**<br><br>`Device# configure terminal` | Enters global configuration mode. |
| **Step 3** | Use one of the following commands to configure media flow-through:<br><br>    • **media flow-through** in dial-peer configuration mode<br>    • **media flow-through** in global VoIP configuration mode<br><br>**Example:**<br><br>In dial-peer configuration mode<br><br>`! Applying SIP profiles to one dial peer only`<br>`Device (config) dial-peer voice 10 voip`<br>`Device (config-dial-peer) media flow-through`<br>`Device (config-dial-peer) end`<br><br>**Example:**<br><br>In global VoIP SIP mode<br><br>`! Applying SIP profiles globally`<br>`Device(config)# voice service voip`<br>`Device(config-voi-serv)#media flow-through`<br>`Device(config-voi-serv)#end` | Enables media packets to pass through the endpoints, without the intervention of the CUBE. |
| **Step 4** | **end** | Exits to privileged EXEC mode. |

# Media Flow-Around

Media Flow-Around is a media path mode where signaling packets terminate and originate on CUBE. As media bypasses CUBE and flows directly between endpoints, this mode is recommended when connected within an enterprise (trusted endpoints). Media Flow-Around is supported for both audio and video calls.

**Figure 2: Media Flow-Around**



Media Flow-Around
Only Signaling is terminated by CUBE
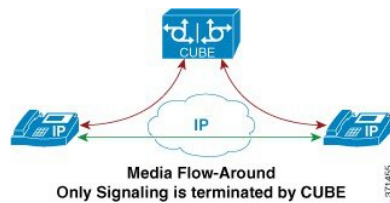
## Configure Media Flow-Around

**SUMMARY STEPS**

1. **enable**
2. **configure terminal**
3. Use one of the following commands to configure media flow-around:

   • **media flow-around** in dial-peer configuration mode
   • **media flow-around** in global VoIP configuration mode

4. **end**

**DETAILED STEPS**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br><br>**Example:**<br><br>Device> enable | Enables privileged EXEC mode. Enter your password if prompted. |
| **Step 2** | **configure terminal**<br><br>**Example:**<br><br>Device# configure terminal | Enters global configuration mode. |
| **Step 3** | Use one of the following commands to configure media flow-around:<br><br>• **media flow-around** in dial-peer configuration mode<br>• **media flow-around** in global VoIP configuration mode<br><br>**Example:** | Enables media packets to pass directly between the endpoints, without the intervention of the CUBE. The media packet is to flow around the gateway. |

| | Command or Action | Purpose |
|---|---|---|
| | In dial-peer configuration mode<br><br>```<br>! Applying SIP profiles to one dial peer only<br>Device (config)# dial-peer voice 10 voip<br>Device (config-dial-peer)# media flow-around<br>Device (config-dial-peer)# end<br>```<br>**Example:**<br>In global VoIP SIP mode<br><br>```<br>! Applying SIP profiles globally<br>Device(config)# voice service voip<br>Device(config-voi-serv)#media flow-around<br>Device(config-voi-serv)#end<br>``` | |
| **Step 4** | **end** | Exits to privileged EXEC mode. |

# Media Anti-Trombone

Media Anti-Tromboning is a media path mode that allows CUBE to detect and avoid loops created by call transfers or call forwards. Loops are restricted to the SIP signaling path and removed from the RTP media path.

The user agent may initiate call forwards and call transfers that are sent towards CUBE as a new SIP INVITE dialog. CUBE considers the original call and the forwarded call as separate unrelated calls. Media anti-tromboning allows CUBE to detect the relation between the calls and resolve the media loop by sending SDP packets back to the sender.
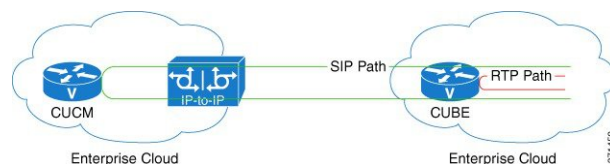
The figure below illustrates how CUBE needlessly loops RTP packets towards the User Agent because it fails to detect the loop.

*Figure 3: Tromboning - Needless looping of Media Packets*
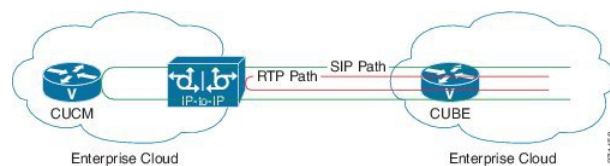


The figure below illustrates how CUBE detects and avoids the loop with the anti-tromboning feature.

*Figure 4: Anti-Tromboning - Avoiding Media Loops*

# Prerequisites

### Cisco Unified Border Element

- Cisco IOS Release 15.1(3)T or a later release must be installed and running on your Cisco Unified Border Element.

### Cisco Unified Border Element (Enterprise)

- Cisco IOS XE Release 15.1(3)T or a later release must be installed and running on your Cisco ASR 1000 Series Router.

# Restrictions for Media Anti-Tromboning

- When Media Anti-Tromboning media path mode is activated, CUBE does not perform supplementary services such as handling REFER-based call transfers or media services such as Secure Real-Time Transport Protocol (SRTP) and SNR.

- Anti-Tromboning does not work if one call leg is media flow-through and the other call leg is Media Flow-Around. Similarly, anti-tromboning does not work if one call leg is Session Description Protocol (SDP) passthrough and another call leg is SDP normal.

- H.323 is not supported.

# Configuring Media Anti-Tromboning

### Before you begin

Configure **mode border-element** command under **voice service voip**, global VoIP configuration mode.

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. Enter one of the following commands to configure media anti-tromboning:
    - **media anti-trombone** in dial-peer configuration mode
    - **media anti-trombone** in global VoIP configuration mode
4. **end**

### DETAILED STEPS

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

| | Command or Action | Purpose |
|---|---|---|
| Step 2 | **configure terminal**<br><br>**Example:**<br><br>`Device# configure terminal` | Enters global configuration mode. |
| Step 3 | Enter one of the following commands to configure media anti-tromboning:<br><br>    • **media anti-trombone** in dial-peer configuration mode<br>    • **media anti-trombone** in global VoIP configuration mode<br><br>**Example:**<br><br>In dial-peer configuration mode<br><br>`! Applying SIP profiles to one dial peer only`<br>`Device (config)# `**`dial-peer voice 10 voip`**<br>`Device (config-dial-peer)# `**`media anti-trombone`**<br>`Device (config-dial-peer)# `**`end`**<br><br>**Example:**<br><br>In global VoIP SIP mode<br><br>`! Applying SIP profiles globally`<br>`Device(config)#`**`voice service voip`**<br>`Device(config-voi-serv)#`**`media anti-trombone`**<br>`Device(config-voi-serv)#`**`end`** | Enables media anti-trombone for all calls. |
| Step 4 | **end** | Exits to privileged EXEC mode. |