



# Inbound Leg Headers for Outbound Dial-Peer Matching

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The Inbound Leg Headers for Outbound Dial-Peer Matching feature allows you to match and provision an outbound dial peer for an outbound call leg using the headers from an inbound call leg. The following headers of an incoming call leg can be used for outbound dial-peer matching:

- VIA (SIP Header)
- FROM (SIP Header)
- TO (SIP Header)
- DIVERSION (SIP Header)
- REFERRED BY (SIP Header)
- Called Number
- Calling Number
- Carrier ID
  
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## Feature Information for Inbound Leg Headers for Outbound Dial-Peer Matching

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 [www.cisco.com/go/cfn](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

*Table 1: Feature Information for Inbound Leg Headers for Outbound Dial-Peer Matching*

Feature Name	Releases	Feature Information
Inbound Leg Headers for Outbound Dial-Peer Matching	15.4(2)T, Cisco IOS XE Release 3.12S	<p>The Inbound Leg Headers for Outbound Dial-Peer Matching feature allows you to match and provision an outbound call leg using the headers of an inbound call leg.</p> <p>The following commands were introduced by this feature:  <b>destination provision-policy</b>, <b>destination uri-via</b>, <b>destination uri-to</b>, <b>destination uri-from</b>, <b>destination uri-diversion</b>, <b>destination uri-referred-by</b>, <b>show voice class dial-peer provision-policy</b></p> <p>The following commands were modified.  <b>show command incall</b>, <b>show dialplan dialpeer</b>.</p>

## Prerequisites for Inbound Leg Headers for Outbound Dial-Peer Matching

- CUBE or Voice Gateway must be configured.

## Restrictions for Inbound Leg Headers for Outbound Dial-Peer Matching

- The existing **header-passing** command supports modification of SIP headers of INVITE message by the Tool Command Language (TCL) application. If the above SIP headers are modified by the TCL application, they cannot be used for outbound dial-peer provisioning.
- If multiple SIP via headers and diversion headers are found in an incoming INVITE or REFER message, only the top-most via header and top-most diversion header of an incoming INVITE or REFER message are used for outbound dial-peer provisioning.
- When an incoming call is matched to an inbound dial peer with an associated provision profile without rules, outbound dial-peer provisioning is disabled and the incoming call is disconnected by CUBE or voice gateway with cause code "unassigned number (1)".

# Information About Inbound Leg Headers for Outbound Dial-Peer Matching

This feature allows you to match headers of an inbound call leg and provision an outbound dial peer for an outbound call leg. The following SIP headers of an incoming call leg can be used for outbound dial-peer matching

- VIA (SIP Header)
- FROM (SIP Header)
- TO (SIP Header)
- DIVERSION (SIP Header)
- REFERRED BY (SIP Header)
- Called Number
- Calling Number
- Carrier ID

The above headers are retrieved from an incoming INVITE or REFER message and used for outbound dial-peer provisioning.

SIP headers of an INVITE message are saved to an associated call leg. For example, an INVITE message is received for a new call leg A. Then, SIP headers are saved to call leg A itself for outbound dial-peer lookup.

On the other hand, SIP headers of a REFER message are saved to the peer call leg of the associated call leg. For example, call leg A and call leg B are connected in CUBE. The party at Call Leg B makes a blind transfer to the party at Call Leg C. A REFER message is received in CUBE for call leg B (transferor). But, SIP headers of the REFER message are saved under call leg A (transferee) for an outbound dial-peer lookup for Party C.

## Configuring Inbound Leg Headers for Outbound Dial-Peer Matching

### Before you begin

Necessary pattern maps have been configured.

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice class dial-peer provision-policy tag**
4. (Optional) **description string**
5. **preference preference-order first-attribute second-attribute**
6. **exit**
7. **dial-peer voice inbound-dial-peer-tag voip**
8. **destination provision-policy tag**
9. **exit**
10. **dial-peer voice outbound-dial-peer-tag voip**

11. Configure a match command for an outbound dial peer according to the provision policy rule attribute configured.
12. **end**

## DETAILED STEPS

	Command or Action	Purpose																				
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Device> enable	Enters privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>																				
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Device# configure terminal	Enters global configuration mode.																				
<b>Step 3</b>	<b>voice class dial-peer provision-policy tag</b> <b>Example:</b> Device(config)# voice class dial-peer provision-policy 200	Creates a provision policy profile in which a set of attributes for dial-peer matching can be defined. <ul style="list-style-type: none"> <li>• You can use the <b>shutdown</b> command to deactivate the provision policy and allow normal outbound dial-peer provisioning.</li> </ul>																				
<b>Step 4</b>	(Optional) <b>description string</b> <b>Example:</b> Device(voice-class)# description match both calling and called	Provides a description for the provision policy profile.																				
<b>Step 5</b>	<b>preference preference-order first-attribute second-attribute</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>First Attribute</th> <th>Second Attribute</th> </tr> </thead> <tbody> <tr> <td>diversion</td> <td>from, referred-by, to, uri, via</td> </tr> <tr> <td>from</td> <td>diversion, referred-by, to, uri, via</td> </tr> <tr> <td>referred-by</td> <td>diversion, from, to, uri, via</td> </tr> <tr> <td>to</td> <td>diversion, referred-by, from, uri, via</td> </tr> <tr> <td>uri</td> <td>diversion, referred-by, to, from, via, carrier-id</td> </tr> <tr> <td>via</td> <td>diversion, referred-by, to, uri, from</td> </tr> <tr> <td>called</td> <td>calling, carrier-id</td> </tr> <tr> <td>calling</td> <td>called</td> </tr> <tr> <td>carrier-id</td> <td>called, uri</td> </tr> </tbody> </table> <b>Example:</b>	First Attribute	Second Attribute	diversion	from, referred-by, to, uri, via	from	diversion, referred-by, to, uri, via	referred-by	diversion, from, to, uri, via	to	diversion, referred-by, from, uri, via	uri	diversion, referred-by, to, from, via, carrier-id	via	diversion, referred-by, to, uri, from	called	calling, carrier-id	calling	called	carrier-id	called, uri	Configures a provision policy rule. <ul style="list-style-type: none"> <li>• You can configure up to two rules. This means up to four attributes can be configured for matching outbound dial peers.</li> <li>• If rules are not configured, outbound dial-peer provisioning is disabled, and an incoming call matched to an inbound dial peer associated with this profile is disconnected by CUBE or voice gateway with cause code "unassigned number (1)".</li> </ul>
First Attribute	Second Attribute																					
diversion	from, referred-by, to, uri, via																					
from	diversion, referred-by, to, uri, via																					
referred-by	diversion, from, to, uri, via																					
to	diversion, referred-by, from, uri, via																					
uri	diversion, referred-by, to, from, via, carrier-id																					
via	diversion, referred-by, to, uri, from																					
called	calling, carrier-id																					
calling	called																					
carrier-id	called, uri																					

	Command or Action	Purpose																				
	Device(voice-class)# preference 2 calling called																					
<b>Step 6</b>	<b>exit</b> <b>Example:</b> Device(voice-class)# exit	Exits voice class configuration mode and enters global configuration mode.																				
<b>Step 7</b>	<b>dial-peer voice inbound-dial-peer-tag voip</b>	Enters dial peer configuration mode for an inbound dial peer.																				
<b>Step 8</b>	<b>destination provision-policy tag</b> <b>Example:</b> Device(config)# dial-peer voice 100 voip Device(config-dial-peer)# destination provision-policy 200 Device(config)# exit	Associates a provision policy profile with an inbound dial peer.																				
<b>Step 9</b>	<b>exit</b>	Exits dial peer configuration mode.																				
<b>Step 10</b>	<b>dial-peer voice outbound-dial-peer-tag voip</b>	Enters dial peer configuration mode for an outbound dial peer.																				
<b>Step 11</b>	Configure a match command for an outbound dial peer according to the provision policy rule attribute configured. <table border="1" data-bbox="284 1008 893 1816"> <thead> <tr> <th>Provision Policy Rule Attribute</th> <th>Dial-peer Match command</th> </tr> </thead> <tbody> <tr> <td>called</td> <td><b>destination-pattern pattern</b> <b>destination e164-pattern-map pattern-map-class-id</b></td> </tr> <tr> <td>calling</td> <td><b>destination calling e164-pattern-map pattern-map-class-id</b></td> </tr> <tr> <td>carrier-id</td> <td><b>carrier-id target</b></td> </tr> <tr> <td>uri</td> <td><b>destination uri uri-class-tag</b></td> </tr> <tr> <td>via</td> <td><b>destination uri-via uri-class-tag</b></td> </tr> <tr> <td>to</td> <td><b>destination uri-to uri-class-tag</b></td> </tr> <tr> <td>from</td> <td><b>destination uri-from uri-class-tag</b></td> </tr> <tr> <td>diversion</td> <td><b>destination uri-diversion uri-class-tag</b></td> </tr> <tr> <td>referred-by</td> <td><b>destination uri-referred-by uri-class-tag</b></td> </tr> </tbody> </table>	Provision Policy Rule Attribute	Dial-peer Match command	called	<b>destination-pattern pattern</b> <b>destination e164-pattern-map pattern-map-class-id</b>	calling	<b>destination calling e164-pattern-map pattern-map-class-id</b>	carrier-id	<b>carrier-id target</b>	uri	<b>destination uri uri-class-tag</b>	via	<b>destination uri-via uri-class-tag</b>	to	<b>destination uri-to uri-class-tag</b>	from	<b>destination uri-from uri-class-tag</b>	diversion	<b>destination uri-diversion uri-class-tag</b>	referred-by	<b>destination uri-referred-by uri-class-tag</b>	Configure a match command based on any of the four attributes defined in the provision policy rule.
Provision Policy Rule Attribute	Dial-peer Match command																					
called	<b>destination-pattern pattern</b> <b>destination e164-pattern-map pattern-map-class-id</b>																					
calling	<b>destination calling e164-pattern-map pattern-map-class-id</b>																					
carrier-id	<b>carrier-id target</b>																					
uri	<b>destination uri uri-class-tag</b>																					
via	<b>destination uri-via uri-class-tag</b>																					
to	<b>destination uri-to uri-class-tag</b>																					
from	<b>destination uri-from uri-class-tag</b>																					
diversion	<b>destination uri-diversion uri-class-tag</b>																					
referred-by	<b>destination uri-referred-by uri-class-tag</b>																					

	Command or Action	Purpose
	<b>Example:</b> Device(config)# dial-peer voice 300 voip Device(config-dial-peer)# destination uri-from 200 Device(config)# exit	
<b>Step 12</b>	<b>end</b>  <b>Example:</b>  Device(config-dial-peer)# end	Exits dial peer configuration mode and enters privileged EXEC mode.

## Verifying Inbound Leg Headers for Outbound Dial-Peer Matching

### SUMMARY STEPS

1. `show dialplan incall {sip | h323} {calling | called} e164-pattern | include voice`
2. `show dialplan dialpeer inbound-dial-peer-id number e164-pattern [timeout] | include Voice`
3. `show voice class dial-peer provision-policy`

### DETAILED STEPS

#### Step 1 `show dialplan incall {sip | h323} {calling | called} e164-pattern | include voice`

Displays inbound dial peers based on an incoming calling or called number. Once you have the dial peer number, you can use it to search for the complete dial-peer details in the running-config.

##### Example:

```
Device# show dialplan incall sip calling 3333 | include Voice
```

```
VoiceOverIpPeer1
```

```
Device# show dialplan incall sip calling 4444 | include Voice
```

```
VoiceOverIpPeer1
```

```
Device# show running-config | section dial-peer voice 1 voip
```

```
dial-peer voice 1 voip
destination dpg 10000
incoming calling e164-pattern-map 100
dtmf-relay rtp-nte
codec g711ulaw
```

```
Device# show dialplan incall sip called 6000 timeout | include Voice
```

```
VoiceOverIpPeer100
```

```
Device# show running-config | section dial-peer voice 100 voip
```

```
dial-peer voice 100 voip
incoming called e164-pattern-map 1
incoming calling e164-pattern-map 1
```

```
dtmf-relay rtp-nte
codec g711ulaw
```

```
Device# show dialplan incall voip calling 23456
```

```
VoiceOverIpPeer1234567
  peer type = voice, system default peer = FALSE, information type = voice,
  description = `',
  tag = 1234567, destination-pattern = `',
  destination e164-pattern-map tag = 200 status = valid,
  destination dpg tag = 200 status = valid,
  voice reg type = 0, corresponding tag = 0,
  allow watch = FALSE
  answer-address = `', preference=0,
  incoming calling e164-pattern-map tag = `200' status = valid,
  CLID Restriction = None
```

## Step 2 **show dialplan dialpeer inbound-dial-peer-id number e164-pattern [timeout] | include Voice**

Displays a list of outbound dial peers based on a specified inbound dial peer. This command line will be helpful find a list of outbound dial peer of a destination dial-peer group.

### Example:

```
Device# show dialplan dialpeer 1 number 23457 timeout | include Voice
```

```
VoiceOverIpPeer100013
VoiceOverIpPeer100012
```

### Example:

```
voice class dial-peer provision-policy 2000
  preference 2 diversion to
  !
  ...
  !
dial-peer voice 32555 voip
  session protocol sipv2
  session target ipv4:1.5.14.9
  destination uri-diversion 1
  destination uri-to test2
  !
dial-peer voice 32991 voip
  destination provision-policy 2000
  incoming called-number 1234
  !
```

```
Device# show dialplan dialpeer 32991 number 2234 timeout
```

```
Macro Exp.: 2234
Enter Diversion header:sip:1234@cisco.com
Enter To header:sip:2234@10.0.0.0
VoiceOverIpPeer32134
  peer type = voice, system default peer = FALSE, information type = voice,
  description = `',
```

## Step 3 **show voice class dial-peer provision-policy**

Displays a list of configured provision policies and associated rules.

### Example:

```
Device# show voice class dial-peer provision-policy
```

```
Voice class dial-peer provision-policy: 100 AdminStatus: Up
```

```

Description: match only called

Pref  Policy Rule
----  -
1     called

Voice class dial-peer provision-policy: 101  AdminStatus: Up
Description: match both calling and called

Pref  Policy Rule
----  -
1     called calling

Voice class dial-peer provision-policy: 102  AdminStatus: Up
Description: match calling first; if no match then match called

Pref  Policy Rule
----  -
1     calling
2     called

Voice class dial-peer provision-policy: 200  AdminStatus: Up
Description: match referred-by and via uri; if no match then match request- uri

Pref  Policy Rule
----  -
1     referred-by via
2     uri

voice class dial-peer provision-policy: 300  AdminStatus: Up
Description: match only request-uri

Pref  Policy Rule
----  -
1     uri

Voice class dial-peer provision-policy: 400  AdminStatus: Up
Description: match only request uri; if no match then match called

Pref  Policy Rule
----  -
1     uri
2     called

```

---

## Configuration Example: Inbound Leg Headers for Outbound Dial-Peer Matching

### Example: Configuring Inbound Called or Calling Numbers Used for Outbound Dial-Peer Matching

```

Device> enable
Device# configure terminal

Device(config)# voice class dial-peer provision-policy 200
Device(voice-class)# description match both calling and called
Device(voice-class)# preference 2 calling called

```



```
Device(voice-class)# exit

Device(config)# voice class e164-pattern-map 300
Device(voice-class)# description patterns
Device(voice-class)# e164 5557123
Device(voice-class)# e164 5558123
Device(voice-class)# e164 5559123
Device(voice-class)# exit

!Associating the Provision Policy with an Inbound Dial Peer
Device(config)# dial-peer voice 100 voip
Device(config-dial-peer)# destination provision-policy 200
Device(config-dial-peer)# end

!Associates a Pattern Map with an Outbound Dial Peer.
! The called number in the SIP headers of the inbound leg is matched to select the below
outbound dial peer.
Device(config)# dial-peer voice 200 voip
Device(config-dial-peer)# destination e164-pattern-map 300
Device(config-dial-peer)# end
```

### Example: Configuring Inbound SIP Headers for Outbound Dial-Peer Matching

```
Device> enable
Device# configure terminal

Device(config)# voice class dial-peer provision-policy 200
Device(voice-class)# description match both calling and called
Device(voice-class)# preference 2 via from
Device(voice-class)# exit

!Associating the Provision Policy with an Inbound Dial Peer
Device(config)# dial-peer voice 100 voip
Device(config-dial-peer)# destination provision-policy 200
Device(config-dial-peer)# end

Device(config)# voice class uri 200 sip
Device(config-voice-uri-clas)# pattern 25054..

!Associates a Provision Policy with an Outbound Dial Peer.
The FROM SIP headers of the inbound leg is matched to select the below outbound dial peer.
Device(config)# dial-peer voice 200 voip
Device(config-dial-peer)# destination uri-from 200
Device(config-dial-peer)# end
```

