



## IOS 15.1.2T New Toll Fraud IP Trust List Feature

IOS v15.1.2T comes with some new toll fraud features and some are not exactly obvious and can cause some issues, especially if the IOS is upgraded from 12 or a fresh install with the person booting up being different than the person configuring it for voice

During the boot sequence this is displayed (this is the only time it is displayed):

```
Following voice command is enabled:  
voice service voip  
ip address trusted authenticate
```

```
The command enables the ip address authentication  
on incoming H.323 or SIP trunk calls for toll fraud  
prevention supports.
```

```
Please use "show ip address trusted list" command  
to display a list of valid ip addresses for incoming  
H.323 or SIP trunk calls.
```

```
Additional valid ip addresses can be added via the  
following command line:
```

```
voice service voip  
ip address trusted list  
ipv4 <ipv4-address> [<ipv4 network-mask>]
```

- The router will automatically add any destination defined as an 'ipv4 session target' in voip dial peers
- The auto added destinations will **NOT** appear in the **show run** under **Voice Services Voip**, you must use the show commands to view the configured addresses in the trust list – this is not explicitly stated in the documentation, nor will the above default configuration "**ip address trusted authenticate**"
- The manually added destinations (those you add to the trust list under voice services voip) will display in show run

\*\*\*What this means is: you **MUST** use explicit dial peers for each CUCM/Voip Device/SIP Trunk Provider sending calls to the Voice Router, if you do not use explicit Dial Peers then you **MUST** add the ip addresses of the devices sending calls to the Voice Router

This includes incoming dial peers, while the 'session target' is ignored on incoming dial peer matching it is still required if you are not adding these addresses to the trust list

\*\*\*What you will experience if the address is not configured: The router will reject the call with the following Messages/Causes:

From a 'debug ccsip all' -or- 'debug ccsip messages'

```
###Router receives invite from CUCM for call (incoming dial peer for this cucm not defined and  
address not added to trust list)
```

Received:

```
INVITE sip:13033578960**71111111@10.162.75.67:5060 SIP/2.0  
Via: SIP/2.0/UDP 10.162.75.20:5060;branch=z9hG4bKbd8490130b6
```



From: <sip:7006@10.162.75.20>;tag=71546~c864d094-c2fd-49da-923e-37b7d9d8a09b-17944843  
To: <sip:13033578960\*\*71111111@10.162.75.67>  
Date: Wed, 18 Apr 2012 16:04:59 GMT

###Router goes thru dial peer matching

At this point a 'debug voip ccapi inout' will show that the call was sent to the Toll Fraud application for processing

\*Apr 18 17:41:20.549: //1856/3E218D000000/CCAPI/cc\_process\_call\_setup\_ind:

>>>CCAPI handed cid 1856 with tag 10 to app "\_ManagedAppProcess\_TOLLFRAUD\_APP"

\*Apr 18 17:41:20.549: //1856/3E218D000000/SIP/Msg/ccsipDisplayMsg:

###Router Responds to CUCM that request was received and it is processing it

**SIP/2.0 100 Trying**

Via: SIP/2.0/UDP 10.162.75.20:5060;branch=z9hG4bKbd8490130b6

From: <sip:7006@10.162.75.20>;tag=71546~c864d094-c2fd-49da-923e-37b7d9d8a09b-17944843

To: <sip:13033578960\*\*71111111@10.162.75.67>

Date: Wed, 18 Apr 2012 17:41:20 GMT

Call-ID: 3e218d00-f8e1e62b-602-144ba20a@10.162.75.20

CSeq: 101 INVITE

Allow-Events: telephone-event

Server: Cisco-SIPGateway/IOS-12.x

Content-Length: 0

###Router responds with reject

\*Apr 18 17:41:20.549: //1856/3E218D000000/CCAPI/ccCallDisconnect:

**Cause Value=21**, Tag=0x0, Call Entry(Previous Disconnect Cause=0, Disconnect Cause=0)

\*Apr 18 17:41:20.549: //1856/3E218D000000/CCAPI/ccCallDisconnect:

**Cause Value=21**, Call Entry(Responded=TRUE, Cause Value=21)

\*Apr 18 17:41:20.553: //1856/3E218D000000/SIP/Msg/ccsipDisplayMsg:

**SIP/2.0 403 Forbidden**

Via: SIP/2.0/UDP 10.162.75.20:5060;branch=z9hG4bKbd8490130b6

From: <sip:7006@10.162.75.20>;tag=71546~c864d094-c2fd-49da-923e-37b7d9d8a09b-17944843

To: <sip:13033578960\*\*71111111@10.162.75.67>;tag=F79C6EB8-24FD

Date: Wed, 18 Apr 2012 17:41:20 GMT

Call-ID: 3e218d00-f8e1e62b-602-144ba20a@10.162.75.20

CSeq: 101 INVITE

Allow-Events: telephone-event

Server: Cisco-SIPGateway/IOS-12.x

**Reason: Q.850;cause=21**

Content-Length: 0

**403 Forbidden:** The server understood the request, but is refusing to fulfill it. Authorization will not help, and the request SHOULD NOT be repeated.

**Reason: Q.850; cause=21:** Call rejected; Subscriber has a service constraint that does not accept this call; Indicates that the equipment sending this cause code does not wish to accept this call, although it could have accepted the call because the equipment sending the cause is neither busy nor incompatible.



**Behavior with 15.1(2)T and Later Releases\*\*\*\*** Good Information

[http://www.cisco.com/en/US/tech/tk652/tk90/technologies\\_tech\\_note09186a0080b3e123.shtml](http://www.cisco.com/en/US/tech/tk652/tk90/technologies_tech_note09186a0080b3e123.shtml)

Dial Peer Config Guide for v15.1M&T - Overview and link to white paper

<http://www.cisco.com/en/US/docs/ios-xml/ios/voice/dialpeer/configuration/15-1mt/vd-dp-overview.html#GUID-2ABE5250-0DE4-4E91-B691-395EF4E9008D>

Cause Codes and Debug Values

[http://www.cisco.com/en/US/docs/ios/12\\_3/vvf\\_c/voice\\_troubleshooting/old/vts\\_appa.html](http://www.cisco.com/en/US/docs/ios/12_3/vvf_c/voice_troubleshooting/old/vts_appa.html)

SIP Messages

<http://www.rfc-ref.org/RFC-TEXTS/3261/chapter21.html>