

# How to troubleshoot DTMF on ISDN PRI

**Scope:** This document covers some of the troubleshooting steps which may be helpful to confirm if the DTMF is being received on the voice gateway from Telco or not. In case of ISDN PRI, the Telco doesn't send DTMF digits but Tone for every digit pressed by the caller. It's up to the voice gateway to recognize the Tone and convert it into the appropriate DTMF digit.

## Sample network topology:

Caller ---- PSTN ---- ISDN PRI ---- Cisco Voice Gateway ---- CUCM ---- UCCX

-----> DTMF directed towards UCCX.

## Tools required:

- o PUTTY/Secure CRT
- o NOTEPAD++

## Step by step instructions on how to capture and analyze the debug output to confirm if voice gateway is receiving the DTMF from Telco or not:

- Telnet/SSH to the voice gateway using Putty/Secure CRT.
- Save the router configuration and take a backup as a precautionary measure.
- Run the following debugs and initiate a capture:
  - o *Debug isdn q931*
  - o *Debug voip ccapi inout*

**Note:** Debugs can be taxing on the voice gateway, please take necessary steps to ensure it doesn't crash the router or cause slow performance.

For example:

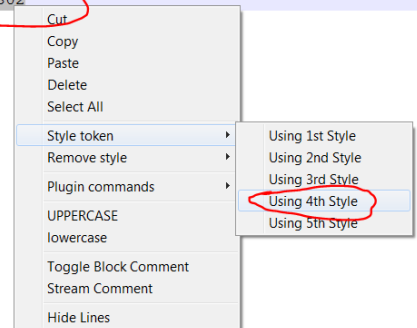
- o Run debugs during after-hours when the call volume is low.
- o Capture the debug output in router buffer and not on router console.
- o Capture the debug output on external Syslog server.
- Reproduce the. For example, ask the caller to dial a UCCX queue number which may prompt the caller to press "1" for English, "2" for French etc. Ask caller to Press "1" and see if voice gateway receives it or not.
- Open the debug output in Notepad++ and look for the callref ID for the test call. The callref ID can be found based on calling/called number.
- Select the Callref ID and apply any style to highlight all the signaling messages in Notepad++ for that particular callref id.

```

Trap logging: level debugging, 2373201 message lines logged
--More-- ██████████ ██████████
Log Buffer (1000000 bytes):

868717: Jun 27 04:40:41: ISDN Se0/0/0:23 Q931: RX <- SETUP pd = 8 callref = 0x0302
  Bearer Capability i = 0x8090A2
    Standard = CCITT
    Transfer Capability = Speech
    Transfer Mode = Circuit
    Transfer Rate = 64 kbit/s
  Channel ID i = 0xA98381
    Exclusive, Channel 1
  Progress Ind i = 0x8283 - Origination address is non-ISDN
  Calling Party Number i = 0x2181, '4026903841'
    Plan:ISDN, Type:National
  Called Party Number i = 0xA1, '6024262021'
    Plan:ISDN, Type:National
868718: Jun 27 04:40:41: //-1/xxxxxxxxxxxx/CCAPI/ccIFCallSetupRequestPrivate:
  Interface=0x714C6C44, Interface Type=6, Destination=, Mode=0x9,
  Call Params(Calling Number=, (Calling Name=) (TON=Unknown, NPI=Unknown, Screening=Not Screened, Presentation=Allowed),
  Called Number=(TON=Unknown, NPI=Unknown), Calling Translated=FALSE,
  Subscriber Type Str=, FinalDestinationFlag=FALSE, Outgoing Dial-peer=0, Call Count On=FALSE,
--More-- ██████████ ██████████ Source Trkgrp Route Label=, Target Trkgrp Route Label=, tg_lab
868719: Jun 27 04:40:41: //-1/xxxxxxxxxxxx/CCAPI/cc_get_feature_vsa:

```



Following is the output of a call when DTMF is working fine. Look for callref = 0x0302 which will be highlighted in NOTEPAD++ when a style (For example “Using 4th style in above screen-shot) is applied. Search for `cc_api_call_digit_begin` and `cc_api_call_digit_end` end events cover the DTMF being received by the VG.

```

868784: Jun 27 04:40:42: ISDN Se0/0/0:23 Q931: RX <- CONNECT_ACK pd = 8 callref = 0x0302
868785: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc_handle_inter_digit_timer:
  Generate inter-digit timeout CC_EV_CALL_DIGIT_END event
868786: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc_api_call_digit_begin:
  Destination Interface=0x70C0A270, Destination Mask=0x3, Destination Call Id=613512,
  Source Call Id=613511, Digit=1, DigitBeginFlags=0x1,
  Rtp Timestamp=0xCC7C4850, Rtp Expiration=0x0
868787: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc_api_call_digit_begin:
  Consume mask is not set. Relaying Digit 1 to dstCallId 0x95C88
868788: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc_relay_digit_begin_for_3way_conference:
  Check DTMF relay digit begin for 3way conf
868789: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc_api_call_digit_end:
  Destination Interface=0x70C0A270, Destination Mask=0x3, Destination Call Id=613512,
  Source Call Id=613511, Digit=1, Duration=217,

```

Xrule Calling Tag=0, Xrule Called Tag=0, Digit Tone Mode=DTMF

868790: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc\_api\_call\_digit\_end:

Call Entry(Handoff Depth=0)

868791: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc\_api\_call\_digit\_end:

Consume mask is not set. Relaying Digit 1 to dstCallId 0x95C88

868792: Jun 27 04:40:45: //613511/1562D298A8F3/CCAPI/cc\_relay\_digit\_end\_for\_3way\_conference:

Check DTMF relay digit end for 3way conf

### Failed DTMF call:

**Capture the debugs and search for “cc\_api\_call\_digit\_begin” and “cc\_api\_call\_digit\_end” events but you will notice there are no such events generated that means DTMF is not being received. Following is the log from SETUP till RELEASE\_COMP for callref = 0x0306.**

869159: Jun 27 04:43:38: ISDN Se0/0/0:23 Q931: RX <- SETUP pd = 8 callref = 0x0306

Bearer Capability i = 0x8090A2

Standard = CCITT

Transfer Capability = Speech

Transfer Mode = Circuit

Transfer Rate = 64 kbit/s

Channel ID i = 0xA98381

Exclusive, Channel 1

Progress Ind i = 0x8283 - Origination address is non-ISDN

Calling Party Number i = 0x2181, '4026903333'

Plan:ISDN, Type:National

--More-- \_\_\_\_\_ Called Party Number i = 0xA1, '6024266666'

Plan:ISDN, Type:National

869160: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/ccIFCallSetupRequestPrivate:

Interface=0x714C6C44, Interface Type=6, Destination=, Mode=0x9,

Call Params(Calling Number=,(Calling Name=)(TON=Unknown, NPI=Unknown, Screening=Not Screened, Presentation=Allowed),

Called Number=(TON=Unknown, NPI=Unknown), Calling Translated=FALSE,

Subscriber Type Str=, FinalDestinationFlag=FALSE, Outgoing Dial-peer=0, Call Count On=FALSE,

Source Trkgrp Route Label=, Target Trkgrp Route Label=, tg\_label\_flag=0, Application Call Id=D00000002dc5fe100000F58000306)

869161: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869162: Jun 27 04:43:38: :cc\_get\_feature\_vsa malloc success

869163: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869164: Jun 27 04:43:38: cc\_get\_feature\_vsa count is 1

869165: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869166: Jun 27 04:43:38: :FEATURE\_VSA attributes are: feature\_name:0,feature\_time:1901248384,feature\_id:614404

869167: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccIFCallSetupRequestPrivate:

--More-- \_\_\_\_\_ SPI Call Setup Request Is Success; Interface Type=6, FlowMode=1

869168: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallSetContext:

Context=0x73779C30

869169: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/ccIFCallSetupRequestPrivate:

Interface=0x70C0A270, Interface Type=9, Destination=0.0.0.0, Mode=0x9,

Call Params(Calling Number=,(Calling Name=)(TON=Unknown, NPI=Unknown, Screening=Not Screened, Presentation=Allowed),

Called Number=(TON=Unknown, NPI=Unknown), Calling Translated=FALSE,

Subscriber Type Str=, FinalDestinationFlag=FALSE, Outgoing Dial-peer=0, Call Count On=TRUE,

Source Trkgrp Route Label=, Target Trkgrp Route Label=, tg\_label\_flag=0, Application Call Id=D00000002dc5fe100000F58000306)

869170: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869171: Jun 27 04:43:38: :cc\_get\_feature\_vsa malloc success

869172: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869173: Jun 27 04:43:38: cc\_get\_feature\_vsa count is 2

869174: Jun 27 04:43:38: //-1/xxxxxxxxxxxx/CCAPI/cc\_get\_feature\_vsa:

869175: Jun 27 04:43:38: :FEATURE\_VSA attributes are: feature\_name:0,feature\_time:1901253760,feature\_id:614405

869176: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/ccIFCallSetupRequestPrivate:  
--More-- \_\_\_\_\_ SPI Call Setup Request Is Success; Interface Type=9, FlowMode=1

869177: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/ccCallSetContext:  
Context=0x737779D0

869178: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_connected:  
Interface=0x70C0A270, Data Bitmask=0x0, Progress Indication=NULL(0),  
Connection Handle=0

869179: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_connected:  
Call Entry(Connected=TRUE, Responded=TRUE, Retry Count=0)

869180: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_proceeding:  
Interface=0x714C6C44, Progress Indication=NULL(0)

869181: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_connected:  
Interface=0x714C6C44, Data Bitmask=0x1, Progress Indication=DESTINATION IS NON ISDN(2),  
Connection Handle=0

869182: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_connected:  
Call Entry(Connected=TRUE, Responded=TRUE, Retry Count=0)

869183: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallModify:  
Nominator=0x1000, Params=0x68FE3F30, Call Id=613519

869184: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:  
(callID=0x95C8F, digit\_event=0x1, enable=TRUE, consume=FALSE)

869185: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:  
Enabled=TRUE, Call Id=613519

869186: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:  
--More-- \_\_\_\_\_ (vdbPtr=0x714C6C44, callID=0x95C8F, disp=0, digit\_event=0x1, enable=TRUE, consume=FALSE)

869187: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:  
Enabled=TRUE, Disposition=0x0, Interface=0x714C6C44, Call Id=613519

869188: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:  
Call Entry(Initial Digit Timeout=15000(ms), Inter Digit Timeout=10000(ms))

869189: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccConferenceCreate:  
(confID=0x68FE414C, callID1=0x95C8F, gcid=0-0-0-0, tag=0x0)

869190: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/ccConferenceCreate:

(confID=0x68FE414C, callID2=0x95C90, gcid=0-0-0-0, tag=0x0)

869191: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccConferenceCreate:

Conference Id=0x68FE414C, Call Id1=613519, Call Id2=613520, Tag=0x0

869192: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_bridge\_done:

Conference Id=0x49939, Source Interface=0x714C6C44, Source Call Id=613519,

Destination Call Id=613520, Disposition=0x0, Tag=0xFFFFFFFF

869193: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_bridge\_done:

Conference Id=0x49939, Source Interface=0x70C0A270, Source Call Id=613520,

Destination Call Id=613519, Disposition=0x0, Tag=0x0

869194: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_generic\_bridge\_done:

Conference Id=0x49939, Source Interface=0x70C0A270, Source Call Id=613520,

Destination Call Id=613519, Disposition=0x0, Tag=0x0

--More-- \_\_\_\_\_ 869195: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccConferenceCreate:

Call Entry(Conference Id=0x49939, Destination Call Id=613520)

869196: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/ccConferenceCreate:

Call Entry(Conference Id=0x49939, Destination Call Id=613519)

869197: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ind:

Destination Interface=0x70C0A270, Destination Call Id=613520, Source Call Id=613519,

Caps(Codec=0x1, Fax Rate=0x1, Vad=0x1,

Modem=0x2, Codec Bytes=20, Signal Type=3)

869198: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ind:

Caps(Playout Mode=1, Playout Initial=60(ms), Playout Min=40(ms),

Playout Max=1000(ms), Fax Nom=300(ms))

869199: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ind:

Destination Interface=0x714C6C44, Destination Call Id=613519, Source Call Id=613520,

Caps(Codec=0x1, Fax Rate=0x1, Vad=0x1,

Modem=0x2, Codec Bytes=160, Signal Type=2)

869200: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ind:

Caps(Playout Mode=1, Playout Initial=60(ms), Playout Min=40(ms),

Playout Max=1000(ms), Fax Nom=300(ms)

869201: Jun 27 04:43:38: //613520/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ack:

Destination Interface=0x714C6C44, Destination Call Id=613519, Source Call Id=613520,

--More-- \_\_\_\_\_ Caps(Codec=g711ulaw(0x1), Fax Rate=FAX\_RATE\_NONE(0x1), Vad=OFF(0x1),

Modem=ON(0x2), Codec Bytes=160, Signal Type=2, Seq Num Start=3748)

869202: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_caps\_ack:

Destination Interface=0x70C0A270, Destination Call Id=613520, Source Call Id=613519,

Caps(Codec=g711ulaw(0x1), Fax Rate=FAX\_RATE\_NONE(0x1), Vad=OFF(0x1),

Modem=ON(0x2), Codec Bytes=160, Signal Type=2, Seq Num Start=3748)

869203: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x714C6C44, Call Id=613519

869204: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_voice\_mode\_event:

Call Id=613519

869205: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_voice\_mode\_event:

Call Entry(Context=0x73779C30)

869206: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_process\_notify\_bridge\_done:

Conference Id=0x49939, Call Id1=613519, Call Id2=613520

869207: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccSetDigitTimeouts:

Initial Digit Timeout=4000(ms), Inter Digit Timeout=4000(ms)

869208: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccSetDigitTimeouts:

Call Entry(Inter Digit Timeout=4000(ms), Initial Digit Timeout=4000(ms))

869209: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccRestartDigitTimeoutMsec:

Digit Timeout=0, Call Id=613519

869210: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:

--More-- \_\_\_\_\_ (callID=0x95C8F, digit\_event=0x1, enable=TRUE, consume=FALSE)

869211: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:

Enabled=TRUE, Call Id=613519

869212: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

(vdbPtr=0x714C6C44, callID=0x95C8F, disp=0, digit\_event=0x1, enable=TRUE, consume=FALSE)

869213: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

Enabled=TRUE, Disposition=0x0, Interface=0x714C6C44, Call Id=613519

869214: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

Call Entry(Initial Digit Timeout=4000(ms), Inter Digit Timeout=4000(ms))

869215: Jun 27 04:43:38: ISDN Se0/0/0:23 Q931: TX -> CALL\_PROC pd = 8 callref = 0x8306

Channel ID i = 0xA98381

Exclusive, Channel 1

869216: Jun 27 04:43:38: ISDN Se0/0/0:23 Q931: TX -> ALERTING pd = 8 callref = 0x8306

869217: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccCallModify:

Nominator=0x1000, Params=0x68FE3A28, Call Id=613519

869218: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x714C6C44, Call Id=613519

--More-- \_\_\_\_\_ 869219: Jun 27 04:43:38: //613519/7EE9F594A8F7/CCAPI/ccGenerateToneInfo:

Stop Tone On Digit=FALSE, Tone=Ring Back,

Tone Direction=Network, Params=0x0, Call Id=613519

869220: Jun 27 04:43:39: ISDN Se0/0/0:23 Q931: TX -> CONNECT pd = 8 callref = 0x8306

869221: Jun 27 04:43:39: //613519/7EE9F594A8F7/CCAPI/ccGenerateToneInfo:

Stop Tone On Digit=FALSE, Tone=NULL,

Tone Direction=Network, Params=0x0, Call Id=613519

869222: Jun 27 04:43:39: //613519/7EE9F594A8F7/CCAPI/ccCallModifyExtended:

Nominator=0x68FE3E68, Params=0x68FE3090, Call Id=613519

869223: Jun 27 04:43:39: //613520/7EE9F594A8F7/CCAPI/ccCallModify:

Nominator=0x18E30, Params=0x68FE3298, Call Id=613520

869224: Jun 27 04:43:39: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x714C6C44, Call Id=613519

869225: Jun 27 04:43:39: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x70C0A270, Call Id=613520

869226: Jun 27 04:43:39: ISDN Se0/0/0:23 Q931: RX <- CONNECT\_ACK pd = 8 callref = 0x8306

869227: Jun 27 04:43:40: ISDN Se0/0/0:23 Q931: RX <- DISCONNECT pd = 8 callref = 0x8306

Cause i = 0x8A90 - Normal call clearing

869228: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccCallModifyExtended:



Nominator=0x68FE3E68, Params=0x68FE3090, Call Id=613519

--More-- \_\_\_\_\_ 869229: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/ccCallModify:

Nominator=0x800, Params=0x68FE3298, Call Id=613520

869230: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x714C6C44, Call Id=613519

869231: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_modify\_done:

Result=0, Interface=0x70C0A270, Call Id=613520

869232: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:

(callID=0x95C8F, digit\_event=0x0, enable=FALSE, consume=FALSE)

869233: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccCallReportDigits:

Enabled=TRUE, Call Id=613519

869234: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

(vdbPtr=0x714C6C44, callID=0x95C8F, disp=0, digit\_event=0x0, enable=FALSE, consume=FALSE)

869235: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

Enabled=TRUE, Disposition=0x0, Interface=0x714C6C44, Call Id=613519

869236: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_report\_digits\_done:

Call Entry(Initial Digit Timeout=4000(ms), Inter Digit Timeout=4000(ms))

869237: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/ccGetCallStatistics:

Call Stats=0x73789994, Call Id=613520

869238: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccConferenceDestroy:

--More-- \_\_\_\_\_ Conference Id=0x49939, Tag=0x0

869239: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_bridge\_drop\_done:

Conference Id=0x49939, Source Interface=0x714C6C44, Source Call Id=613519,

Destination Call Id=613520, Disposition=0x0, Tag=0x0

869240: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/cc\_api\_bridge\_drop\_done:

Conference Id=0x49939, Source Interface=0x70C0A270, Source Call Id=613520,

Destination Call Id=613519, Disposition=0x0, Tag=0x0

869241: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_generic\_bridge\_done:

Conference Id=0x49939, Source Interface=0x70C0A270, Source Call Id=613520,

Destination Call Id=613519, Disposition=0x0, Tag=0x0

869242: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccCallDisconnect:

Cause Value=16, Tag=0x0, Call Entry(Previous Disconnect Cause=0, Disconnect Cause=0)

869243: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/ccCallDisconnect:

Cause Value=16, Call Entry(Responded=TRUE, Cause Value=16)

869244: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_get\_transfer\_info:

Transfer Number Is Null

869245: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/ccCallDisconnect:

Cause Value=16, Tag=0x0, Call Entry(Previous Disconnect Cause=0, Disconnect Cause=0)

869246: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/ccCallDisconnect:

Cause Value=16, Call Entry(Responded=TRUE, Cause Value=16)

869247: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_disconnect\_done:

--More-- \_\_\_\_\_ Disposition=0, Interface=0x70C0A270, Tag=0x0, Call Id=613520,

Call Entry(Disconnect Cause=16, Voice Class Cause Code=0, Retry Count=0)

869248: Jun 27 04:43:40: //613520/7EE9F594A8F7/CCAPI/cc\_api\_call\_disconnect\_done:

Call Disconnect Event Sent

869249: Jun 27 04:43:40: //-1/xxxxxxxxxxxx/CCAPI/cc\_free\_feature\_vsa:

869250: Jun 27 04:43:40: :cc\_free\_feature\_vsa freeing 7152D478

869251: Jun 27 04:43:40: //-1/xxxxxxxxxxxx/CCAPI/cc\_free\_feature\_vsa:

869252: Jun 27 04:43:40: vsacount in free is 1

869253: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_disconnect\_done:

Disposition=0, Interface=0x714C6C44, Tag=0x0, Call Id=613519,

Call Entry(Disconnect Cause=16, Voice Class Cause Code=0, Retry Count=0)

869254: Jun 27 04:43:40: //613519/7EE9F594A8F7/CCAPI/cc\_api\_call\_disconnect\_done:

Call Disconnect Event Sent

869255: Jun 27 04:43:40: //-1/xxxxxxxxxxxx/CCAPI/cc\_free\_feature\_vsa:

869256: Jun 27 04:43:40: :cc\_free\_feature\_vsa freeing 7152BF78

869257: Jun 27 04:43:40: //-1/xxxxxxxxxxxx/CCAPI/cc\_free\_feature\_vsa:

```
--More-- _____ 869258: Jun 27 04:43:40: vsacount in free is 0
869259: Jun 27 04:43:40: ISDN Se0/0/0:23 Q931: TX -> RELEASE pd = 8 callref = 0x8306
869260: Jun 27 04:43:40: ISDN Se0/0/0:23 Q931: RX <- RELEASE_COMP pd = 8 callref = 0x8306
VG01#
```

**Next Steps:**

If there are still doubts on the DTMF being received by the gateway or not, move ahead with “PCM Capture on ISDN” however keep in mind that there is no 3<sup>rd</sup> party tool available to decode the PCM captures. You need to involve Cisco TAC to decode the PCM captures.

**Following are some helpful commands to do the PCM capture:**

To enable PCM capture.

```
voice hpi capture destination flash:pcm1.dat
voice hpi capture buffer 3000000
test voice port 0/0/0:23 pcm-dump caplog 7
```

Disable PCM capture as soon as the test call is over by issuing the following commands:

```
test voice port 0/0/0:23 pcm-dump disable
no voice hpi capture destination flash:pcm1.dat
no voice hpi capture buffer 3000000
```

Copy the pcm1.dat from Flash to TFTP/FTP server and provide the same to TAC for decoding. TAC will decode the capture and provide you the WAV file in which you should be able to clearly hear the TONE if DTMF is received by the voice gateway, else not.