



## **Avaya Solution and Interoperability Test Lab**

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# **Application Notes for VPI Empower R5.5 with Avaya Aura® Contact Center Release 6.4 and Avaya Communication Server 1000 Release 7.6 via Meridian Link Services – Issue 1.0**

### **Abstract**

These Application Notes describe a solution comprised of Avaya Aura® Contact Center Release 6.4 and VPI Empower R5.5. During the compliant testing, the VPI Empower R5.5 was able to connect to Contact Center Manager Server using Meridian Link Services, acquire and monitor keys of IP Phone, and record Voice over IP calls made from/to IP Phone of Avaya Communication Server 1000.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as the observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

## 1. Introduction

The objective of this interoperability compliance testing is to verify that the VPI Empower R5.5 (hereafter referred as Empower) can successfully connect to the Avaya Aura® Contact Center Release 6.4 (hereafter referred as Contact Center) using Meridian Link Services (MLS) and record Voice over IP calls for the IP Phones of Avaya Communication Server 1000 Release 7.6 (hereafter referred as Communication Server 1000).

## 2. General Test Approach and Test Results

The general test approach was to verify that Empower is able to acquire and monitor keys of IP Phones of Communication Server 1000 by communicating with the MLS server of Contact Center system, duplicate the media stream of monitored IP Phone and save recorded calls.

### 2.1. Interoperability Compliance Testing

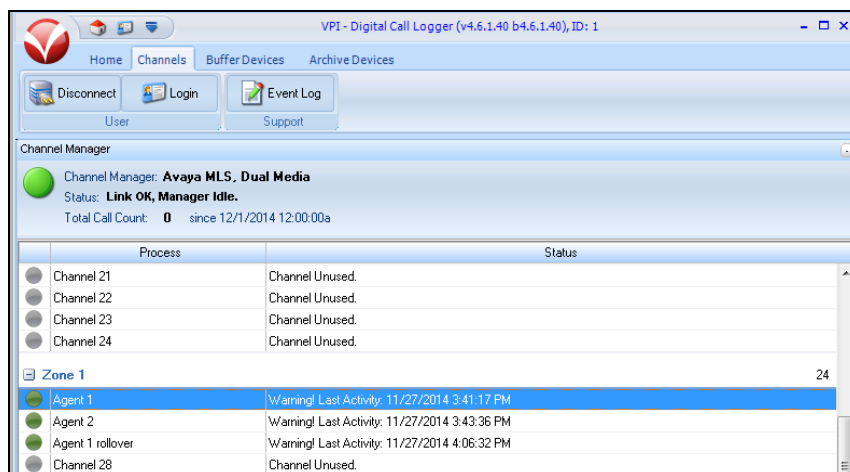
The focus of this compliance testing was to prove and verify that Empower was able to interoperate with Contact Center and Communication Server 1000 system. The following areas were tested:

- Empower successfully utilizes MLS to access the functionality of the Contact Center Manager Server (CCMS) and Communication Server 1000 to record all calls.
- Recording provides information of the Automated Call Distribution (ACD) Agent, Dialed Number Identification Service (DNIS), Calling Line Identification (CLID), Directory Number (DN), Day/Time, Days of week, and Call Duration.
- Agent Resiliency Information.
- Multiple DN Call Recording.

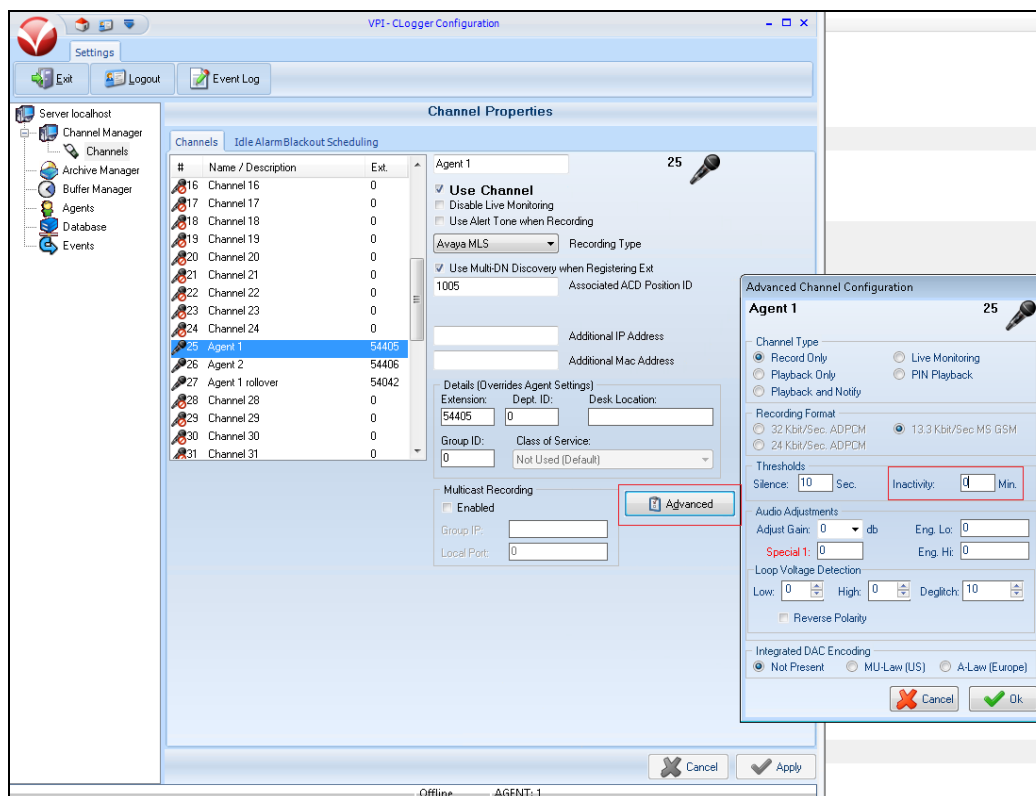
## 2.2. Test Results

The objectives outlined in the **Section 2.1** were verified and met. All test cases were executed and they all passed with the following observation,

There is error in recording when the channel status is **Warning! Last Activity: <Date and Time stamp>** as shown in the screen below.



The channel is in this status based on the timer set in the channel's **Inactivity** field found in the **Advanced Channel Configuration** window. VPI is aware of the issue and the workaround is to enter "0" in the **Inactivity** field as shown in the screen below,



## 2.3. Support

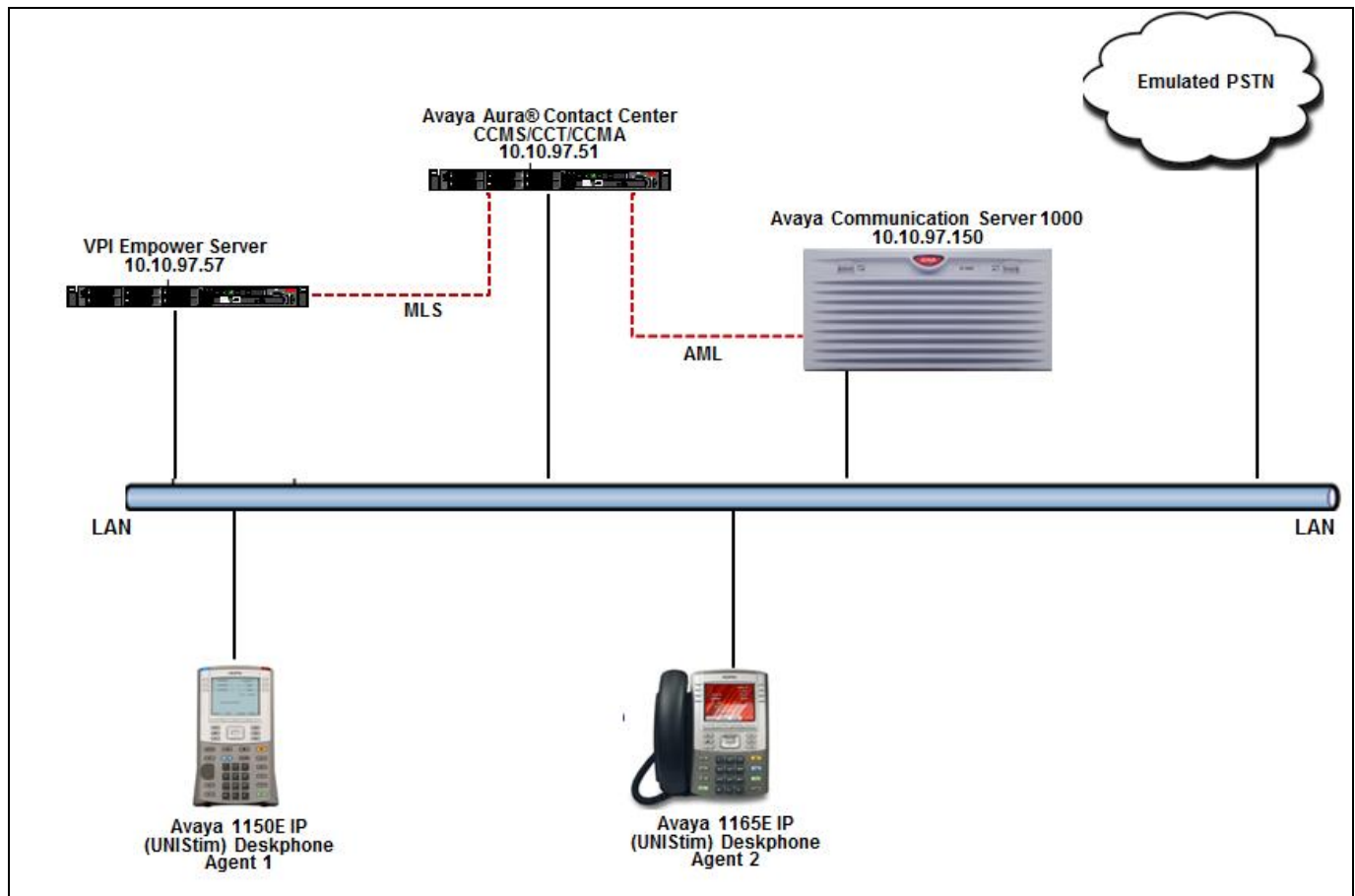
Technical support for VPI Empower can be obtained by contacting VPI via

Web: <http://www.vpi-corp.com/> or

Phone: 1-800-200-5430.

### 3. Reference Configuration

**Figure 1** illustrates the network diagram configuration used during the compliant testing event between the Empower and Contact Center.



**Figure 1: Empower Solution Test Configuration**

### 4. Equipment and Software Validated

The following equipment and software were used during the lab testing:

Equipment	Release/Version
Avaya Communication Server 1000	7.65 SP5
Avaya Aura® Contact Center	6.4 SP13
Avaya IP (UNISTim) Deskphones: 1150E 1165E	0x27C8Q 0x25C8Q
VPI Empower Server OS	Windows Server 2008 R2 SP1 64-bit
VPI Empower	5.5

## 5. Configure Avaya Communication Server 1000

This document assumes that Communication Server 1000 is properly installed and configured. These Application Notes provide the necessary configuration that has to be done on Communication Server 1000 to work with Contact Center and Empower. For more information about how to install and configure Avaya Communication Server 1000, refer to **Section 10**.

### 5.1. Create ELAN for Contact Center application on the Call Server

Log in to the command line interface of Call Server with the appropriate credentials and issue overlay **LD 17** to access the **ADAN** gate opener to create a new ELAN for the Contact Center application. During compliance testing **ELAN 19** was created as shown below.

```
REQ  chg
TYPE  adan
ADAN  new elan 19
CTYP  elan
DES   AACC62
LCTL
```

### 5.2. Create VAS for the ELAN of Contact Center on the Call Server

Log in to the command line interface of Call Server with the appropriate credentials and issue overlay **LD 17** to access the **VAS** gate opener to create a value added server (VAS) for the ELAN 19 created above for the Contact Center application. During compliance testing **VSID 19** was created as shown below.

```
REQ  chg
VAS  new
VSID 19
ELAN 19
SECU
INTL
MCNT
VSID
```

### 5.3. Enable IPIE feature for IP call recording on the Call Server

Log in to the command line interface of Call Server with the appropriate credentials and issue overlay **LD 17** to access the **PARM** gate opener to enable the **Enhanced Unsolicited Status Message (USM) IE (IPIE)** as shown in the screen below.

```
PARM
  LPIB 3500
  HPIB 3500
  .
  .
  .
  MARP YES
  IPIE YES
  FRPT NEFR
  .
  .
```

### 5.4. Enable class of service RECA for IP Phone

Log in to the command line interface of Call server with the appropriate credentials and issue overlay **LD 11** to add or change the configuration of a Deskphone. Screen below shows that the **Recording Allowed (RECA)** has been added to the class of service for the deskphone.

```
DES AGENT6
TN 096 0 02 05 VIRTUAL
TYPE 1150
.
.
.CAC_MFC 0
CLS CTD FBA WTA LPR MTD FNA HTA TDD HFA CRPD
  MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
  POD SLKD CCSD SWD LND CNDA
  CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCBF
  ICDA CDMD LLCN MCTD CLBD AUTU
  GPUD DPUD DNDA CFXA ARHD CNTD CLTD ASCD
  CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD
  UDI RCC HBTB AHA IPND DDGA NAMA MIND PRSD NRWD NRCD NROD
  DRDD EXR0
  USMD USRD ULAD CCBF RTDD RBDD RBHD PGND OCBF FLXD FTTC DNDY DNO3
MCBN
  FDSD NOVD VOLA VOUD CDMR PRED RECA MCDD T87D SBMD
  KEM3 MSNV FRA PKCH MUTA MWTD DVLB CROD ELCD VMSA
CPND_LANG ENG
.
.
```

## 5.5. Configure the Associated Set Assignment (AST) for IP phone

Log in to the command line interface of Call Server with the appropriate credentials and issue overlay **LD 11** to add or change the configuration of a Deskphone. To define which key/s of IP Phone needs to be recorded, assign them at the **AST** prompt. During compliance testing, calls coming to keys **00** and **03** were recorded as shown in the screen below.

```
DES AGENT6
TN 096 0 02 05 VIRTUAL
TYPE 1150
.
.
.
SPID NONE
AST 00 03
IAPG 0
.
.
```

## 6. Configure Avaya Aura® Contact Center

This document assumes that the Contact Center system with all its modules including CCMS and MLS are installed and configured correctly and it communicates to the Communication Server 1000. For more information how to install and configure the Contact Center please refer to **Section 10**.

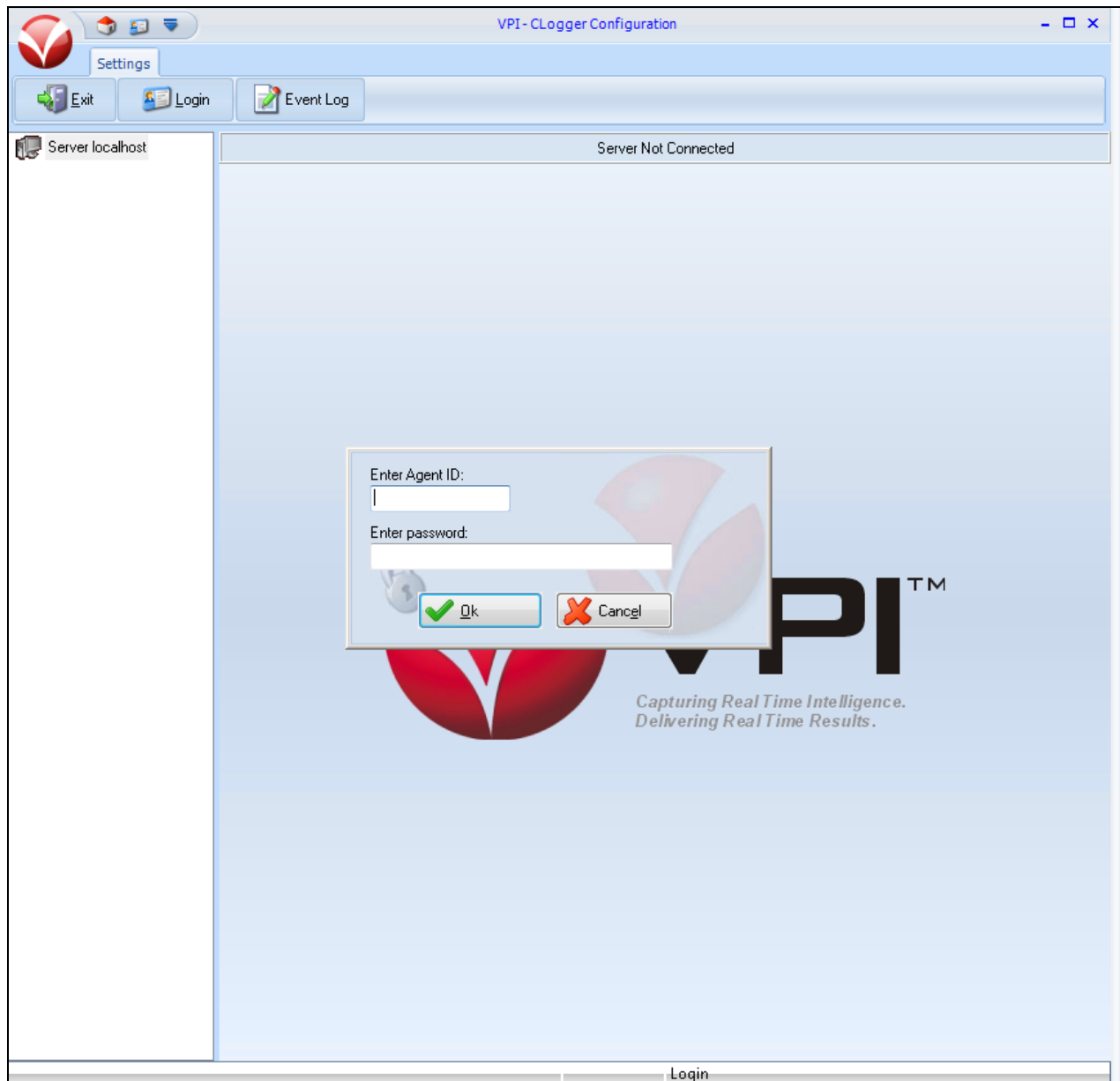


## 7. Configure VPI Empower Server

This section provides the detailed configuration on the Empower server for recording VoIP calls of agent's deskphones residing on Communication Server 1000.

### 7.1. Login to Empower CLogger Configuration

Access the Login screen for Empower CLogger configuration by navigating to **Start → All Programs → VPI → Activ! Voice → VPI Configuration**. Enter the required credentials and click on the **OK** button as shown below.

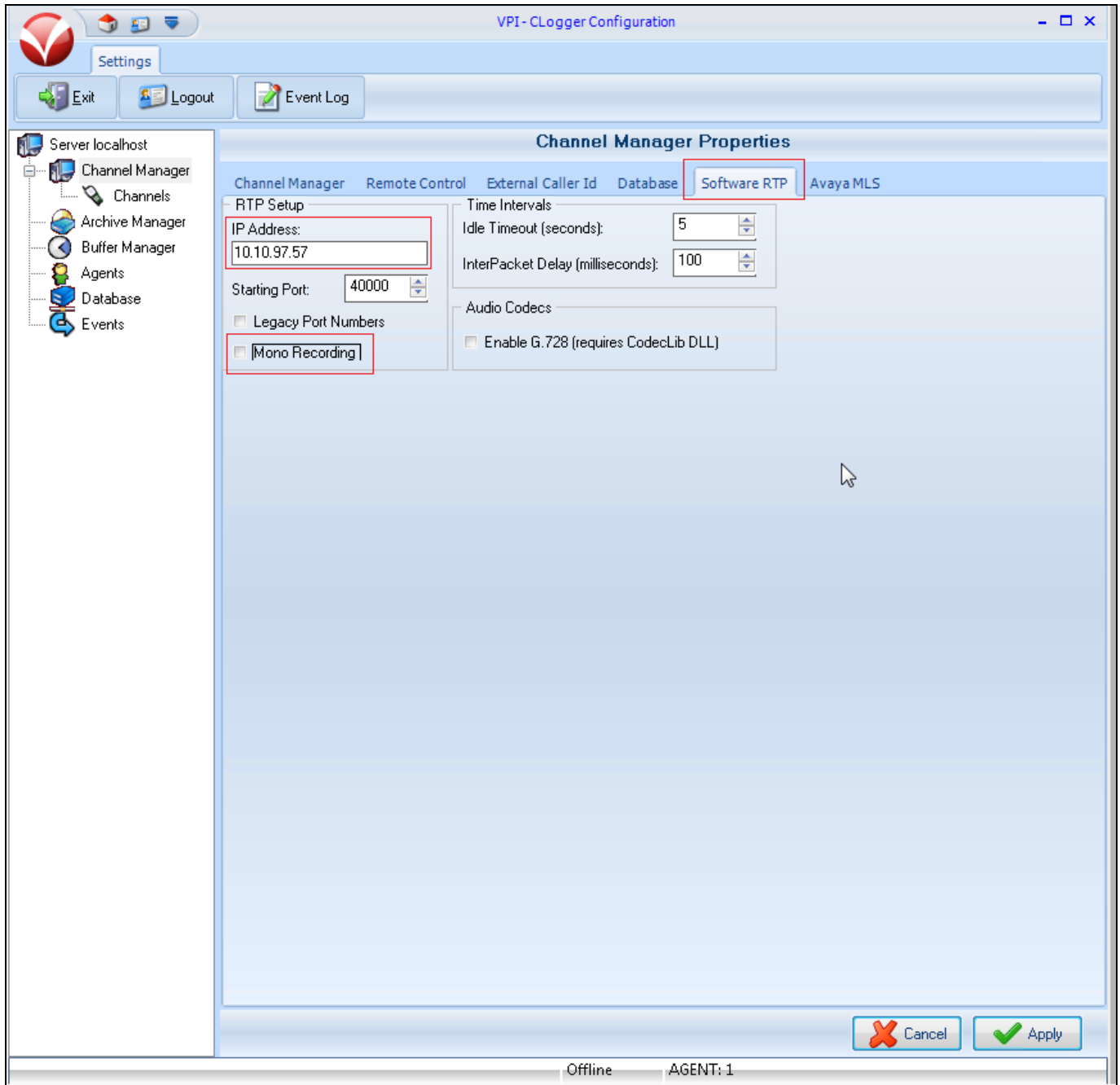


## 7.2. Configuring Channel Manager Properties

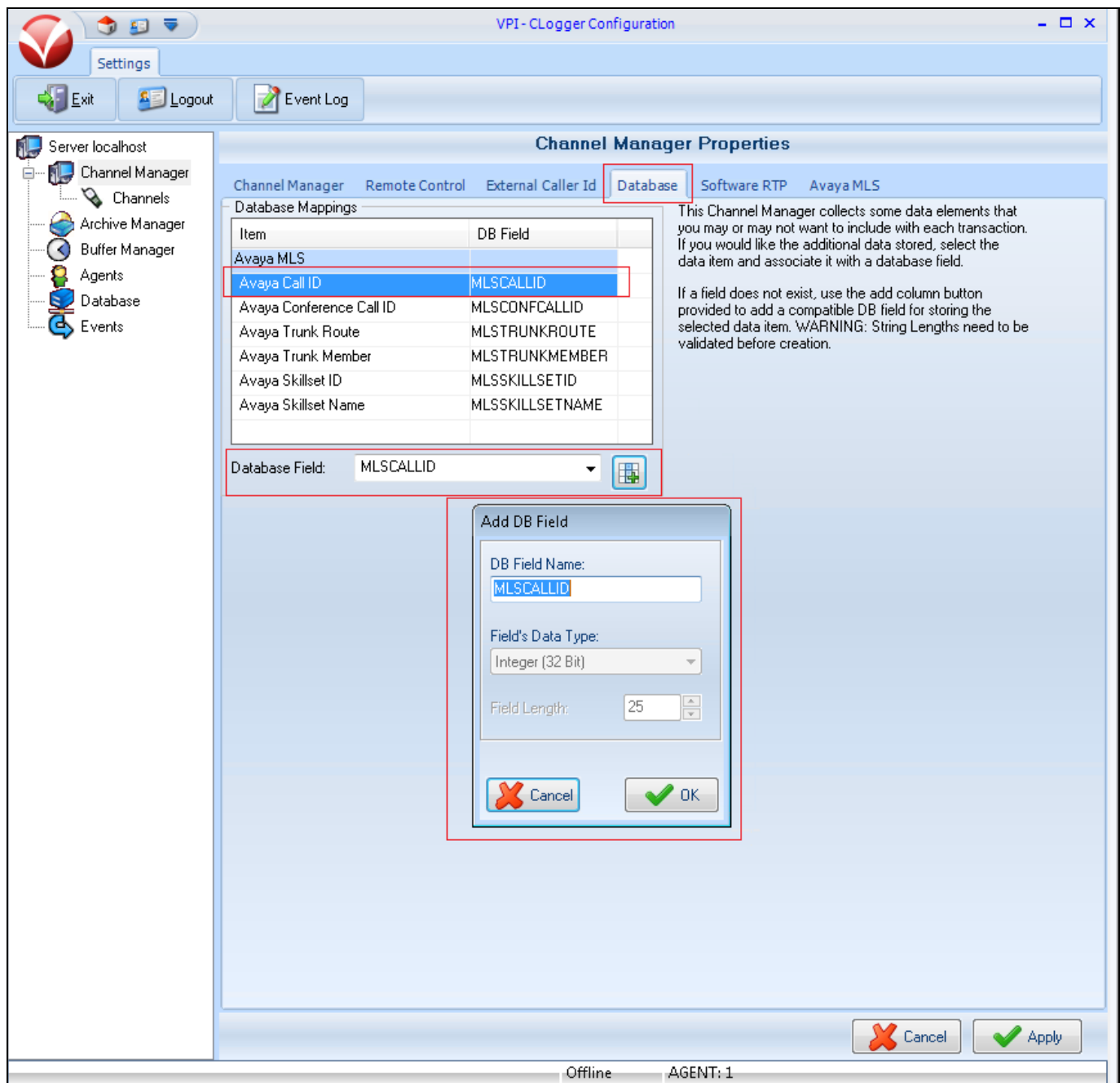
From the main screen of CLogger Configuration as shown below, navigate to **Channel Manager** → **AvayaMLS** and enter the **Server Address** of the Contact Center. During compliance testing that value was *10.10.97.51*. Retain default values for other fields.

The screenshot shows the VPI - CLogger Configuration application window. On the left is a tree view with the following items: Server localhost, Channel Manager, Channels, Archive Manager, Buffer Manager, Agents, Database, and Events. The Channel Manager item is expanded. The main area displays the 'Channel Manager Properties' dialog box with several tabs: Channel Manager, Remote Control, External Caller Id, Database, Software RTP, and AvayaMLS. The AvayaMLS tab is selected and highlighted with a red box. The 'MLS Server Setup' section contains the following fields: Server Address (10.10.97.51, highlighted with a red box), Server Port (3000), Server Password (empty), Session Host (Lanlink), Switch Name (empty), Customer # (0), Mail Name (empty), and Poll Interval (10 seconds). The 'Supplementary Services' section has four checked options: Switch INIT Reason, Call Disconnect Info, Record-by-Skillset, and Call Forward Notification, and one unchecked option: Fail to VOX. The 'Misc' section includes Packet Timeout (30 seconds), Log All Events (checked), Dialers Enabled (Genesys T-Server unchecked), and Recording Line Type (Extension Side selected, Trunk Side unselected). At the bottom right are Cancel and Apply buttons. The status bar at the bottom shows 'Offline' and 'AGENT: 1'.

From the same CLogger Configuration page as shown below, navigate to **Channel Manager** → **Software RTP** and enter the **IP Address** of the Empower server. During compliance testing that value was 10.10.97.57. Uncheck the box for **Mono Recording** option. Retain default values for other fields.



From the same CLogger Configuration page as shown below, navigate to **Channel Manager** → **Database** and add the required **Database Field**. During compliance testing *MLSCALLID*, *MLSCONFCALLID*, *MLSTRUNKROUTE*, *MLSTRUNKMEMBER*, *MLSSKILLSETID* AND *MLSSKILLSETNAME* were added.



### 7.3. Configuring Channel Properties

To configure channels used for recording, from the CLogger Configuration page shown below, navigate to **Channel Manager** → **Channels**. During compliance testing Channels **25, 26** and **27** were used to record Agents **1, 2** and a tertiary DN of Agent **1** respectively. Example shows the **Associated ACD Position ID** and **Extension** values of **1005** and **54405** for Agent **1** respectively. Ensure that the box **Use Multi-DN Discovery when Registering Ext** is checked. Retain default values for other fields.

The screenshot shows the VPI-CLogger Configuration window. On the left is a tree view with 'Server localhost' expanded, showing 'Channel Manager', 'Channels', 'Archive Manager', 'Buffer Manager', 'Agents', 'Database', and 'Events'. The 'Channels' tab is selected. The main area is titled 'Channel Properties' and has three sub-tabs: 'Channels', 'Idle Alarm', and 'Blkout Scheduling'. The 'Channels' sub-tab is active, showing a list of channels. Channel 25, 'Agent 1', is selected, with extension 54405. To the right of the list, the 'Agent 1' configuration is shown. It includes a 'Use Channel' checkbox (checked), 'Disable Live Monitoring' (unchecked), and 'Use Alert Tone when Recording' (unchecked). The 'Recording Type' is set to 'Avaya MLS'. The 'Use Multi-DN Discovery when Registering Ext' checkbox is checked, and the 'Associated ACD Position ID' is set to 1005. Below this, there are fields for 'Additional IP Address' and 'Additional Mac Address'. The 'Details (Overrides Agent Settings)' section includes 'Extension' (54405), 'Dept. ID' (0), 'Desk Location' (empty), 'Group ID' (0), and 'Class of Service' (Not Used (Default)). The 'Multicast Recording' section has 'Enabled' (unchecked), 'Group IP' (empty), and 'Local Port' (0). At the bottom right are 'Cancel' and 'Apply' buttons. The status bar at the bottom shows 'Offline' and 'AGENT: 1'.

#	Name / Description	Ext.
16	Channel 16	0
17	Channel 17	0
18	Channel 18	0
19	Channel 19	0
20	Channel 20	0
21	Channel 21	0
22	Channel 22	0
23	Channel 23	0
24	Channel 24	0
25	Agent 1	54405
26	Agent 2	54406
27	Agent 1 rollover	54042
28	Channel 28	0
29	Channel 29	0
30	Channel 30	0
31	Channel 31	0

**Note:** The Multi\_DN Call Recording feature of Empower benefits from a new feature of Contact Center called Multiple DN Registration that enables CTI third party application to control as many keys of IP Phone as they want via MLS without assigning AST for IP Phone. The Multiple DN Registration feature needs to be enabled in the license of Contact Center.

## 8. Verification Steps

The following are typical steps to verify the interoperability between the Empower and Contact Center and Avaya Communication Server 1000.

- Ensure that the Empower can connect to the Contact Center and acquire the required information from CCMS via the MLS. The first screens below shows the **Server Status** with the **Link OK** and the second screen shows the status of the channels where one is idle and waiting for a call while the other two are showing recording.

VPI - Digital Call Logger (v4.6.1.40 b4.6.1.40), ID: 1

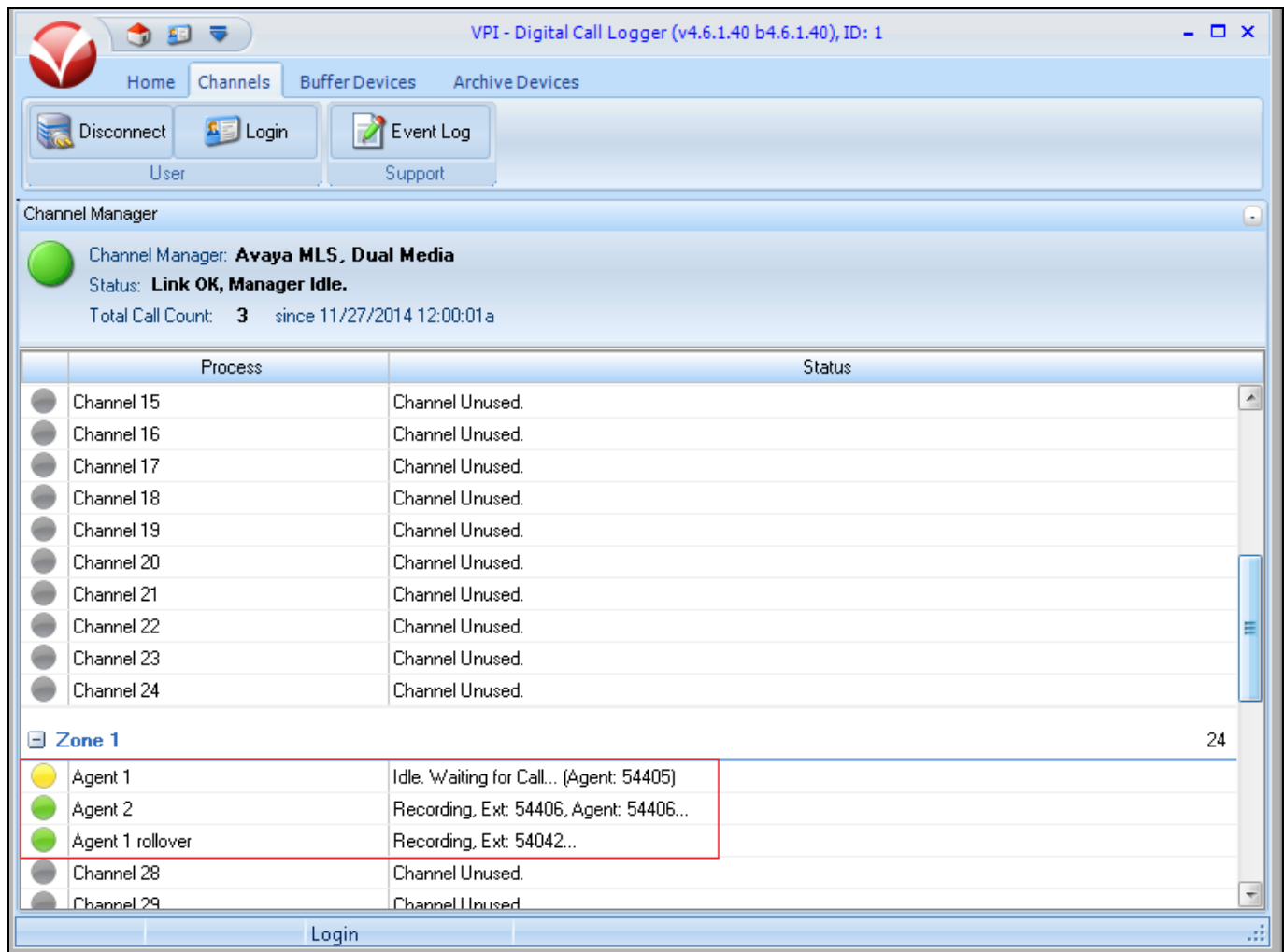
Home Channels Buffer Devices Archive Devices

Disconnect Login Shutdown Event Log Server Status Environment Exit

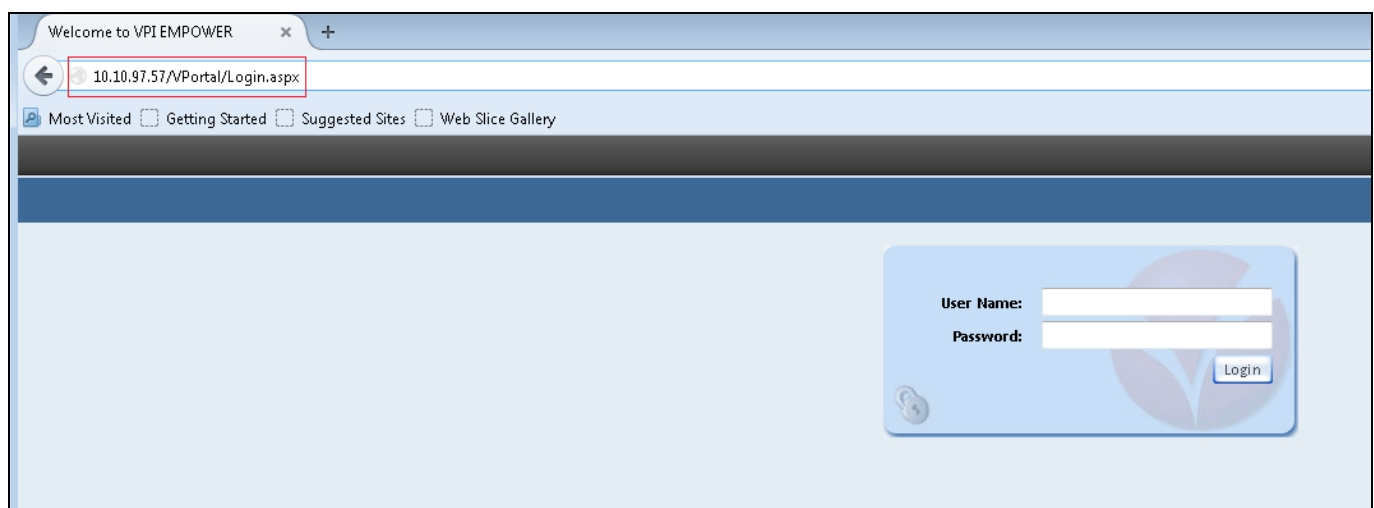
Server Support System Information

Process	Status
<b>Channel Manager</b> 5	
Avaya MLS, Dual Media	Link OK, Manager Idle.
Channels Recording	0
Channels Idle	3
Channels Reporting Errors	0
Channels Enabled	3
<b>Buffer Manager</b> 3	
Primary Buffer 1	78% Free for use
Overflow Buffer 1	No Device Selected.
LTS Buffer 1	74% Free for use
<b>Database Manager</b> 2	
VPData, Firebird 2.0.3.12981	Collecting Data... Store @ 11:48:25 AM
VPortal, SQL Server 10.50.2500.0 SP1	Collecting Data... Store @ 11:48:25 AM
<b>Archive Manager</b> 1	
Media Manager Service	Archive Session @ 11:48:49 AM
<b>Archive Devices</b> 1	
Media Manager 1	94.62% Free. Process Idle.

Login



- Process a call and record the same. The first screen shows the Login screen for the user to access the recordings. This can be launched by entering the IP Address of the Empower Server on a browser's URL. The second screen shows an example of a recorded call with all the required information.



My VM Interactions Insight Quality Coaching Performance Metrics Messages Administration Help

Interactions > Audio Segment Search

Search Actions V-Clip

Filter: Other Front: 21/11/2014 00:00 To: 24/11/2014 11:24 Refresh

Agent ID: EQ Clear

Search: Audio Using: Calls between 21/11/2014 00:00:00 and 24/11/2014 11:24:00

Start Time	Duration	Audio User	Extension Number	ANI ALI	Agent ID	callID	Channel Name	Channel Number	classOfService	classOfService...	clientID	dateAdd
21/11 15:21:31	14s		54405	19088453010	54405	34472	Agent 1	25				21/11 1
21/11 15:08:05	38s		54406	54406	54406	34474	Agent 2	26				21/11 1
21/11 15:08:05	28s		54405	54406	54405	34474	Agent 1	25				21/11 1
21/11 15:07:48	11s		54405	19088453010	54405	34474	Agent 1	25				21/11 1
21/11 15:00:45	44s				54406	34476	Agent 2	26				21/11 1

Page size: 25 Change Item 1 to 25 of 37

Open in a new window

Audio Overview Details Analysis Grid Heat Map Maps

21/11/2014 15:07:48

15:07:48 15:07:49 15:07:50

[Not Specified]

15:07:53 15:07:55 15:07:56 15:07:57 15:07:58 15:07:59

00:00 / 00:11

**General Extended Information**

GMT Offset -300

Agent ID 54405

ANI ALI Digits 19088453010

Channel Name Agent 1

Sensitivity Level 1

objectID 898c7c58-c522-4347-bb09-91a54ba26176

dateAdded 11/21/2014 3:08:13 PM

MLSCALLID 34474

MLSCONF CALLID 34473

MLSTRUNKROUTE 2

MLSTRUNKMEMBER 16

MLSSKILLSETID 10001

MLSSKILLSETNAME VOICE\_SK1



## 9. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 2** with any observations or exceptions noted in **Section 2.2**. The VPI Empower R5.5 is considered compliant with Avaya Aura® Contact Center Release 6.4 and Avaya Communication Server 1000 Release 7.6.

## 10. Additional References

Product documentation for Avaya Communication Server 1000 products may be found at:

<https://support.avaya.com/css/Products/>

Product documentation for VPI Empower may be found at:

<http://www.vpi-corp.com/>

[1] Avaya Communication Server 1000 7.6.Documents:

*Avaya Communication Server 1000E Installation and Commissioning* (NN43041-310) June 2014  
*Co-resident Call Server and Signaling Server Fundamentals - Avaya Communication Server 1000*, (NN43001-509) November 2014

Software Input Output Reference —Administration Avaya Communication Server 1000, (NN43001-611) September 2014

*Element Manager System Reference – Administration - Avaya Communication Server 1000*, (NN43001-632) March 2013

[2] Avaya Aura® Contact Center R6.4 Documents:

*Avaya Aura® Contact Center Planning and Engineering* (NN44400-210) June 2014

*Avaya Aura® Contact Center Installation* (NN44400-311) June 2014

*Avaya Aura® Contact Center Server Administration* (NN44400-610) June 2014

*Avaya Aura® Contact Center Overview* (NN44400-111) June 2014

*Avaya Aura® Contact Center Fundamentals* (NN44400-110) June 2014

*Avaya Aura® Contact Center Manager Administration – Client Administration* (NN44400-611) June 2014

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