



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for configuring Avaya Aura® Communication Manager R6.2 and Avaya Aura® Application Enablement Services R6.2 with VoxSpectrum DGVox v8.1 using Service Observe – Issue 1.1**

### **Abstract**

These Application Notes describe the configuration steps required for VoxSpectrum DGVox to interoperate with Avaya Aura® Communication Manager using Avaya Aura® Application Enablement Services. VoxSpectrum DGVox is a call recording solution. In the compliance testing, VoxSpectrum DGVox used the Telephony Services Application Programming Interface from Avaya Aura® Application Enablement Services to monitor stations on Avaya Aura® Communication Manager, and used the Service Observe feature via the Avaya Aura® Application Enablement Services Device, Media, and Call Control interface to capture the media associated with the monitored stations for call recording.

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

These Application Notes describe the configuration used to enable VoxSpectrum DGVoX to interoperate with Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services, and Avaya Aura® Session Manager. VoxSpectrum DGVoX offers various methods of voice recording. For the purpose of the tests described by these Application Notes, the Service Observe feature was used.

## 2. General Test Approach and Test Results

The general test approach was to validate correct recording of calls in a variety of call handling scenarios and recovery from network interruption. Parties involved in calls, clarity of recording and accurate call times and durations were verified. The resumption of call recording following outages of various components of the solution was also checked.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

### 2.1. Interoperability Compliance Testing

Interoperability compliance testing consisted of the successful, clear and accurate recording of both monitored and unmonitored extensions, as well as recovery from failure in the following scenarios:

- Internal calls – called/calling party ends call
- Calls between networked PBX's - inbound/outbound called party/calling party ends call
- PSTN Calls – inbound/outbound called party/calling party ends call
- Hold/Retrieve
- Supervised/Unsupervised Transfer
- Conference
- Call Forwarding
- Hunt Group Calls
- Bridged Appearance – answered/placed by bridged appearance
- Calls gone to cover
- PBX restart recovery
- DGVoX network recovery
- DGVoX power outage recovery

## 2.2. Test Results

All test cases passed successfully with the following observations:

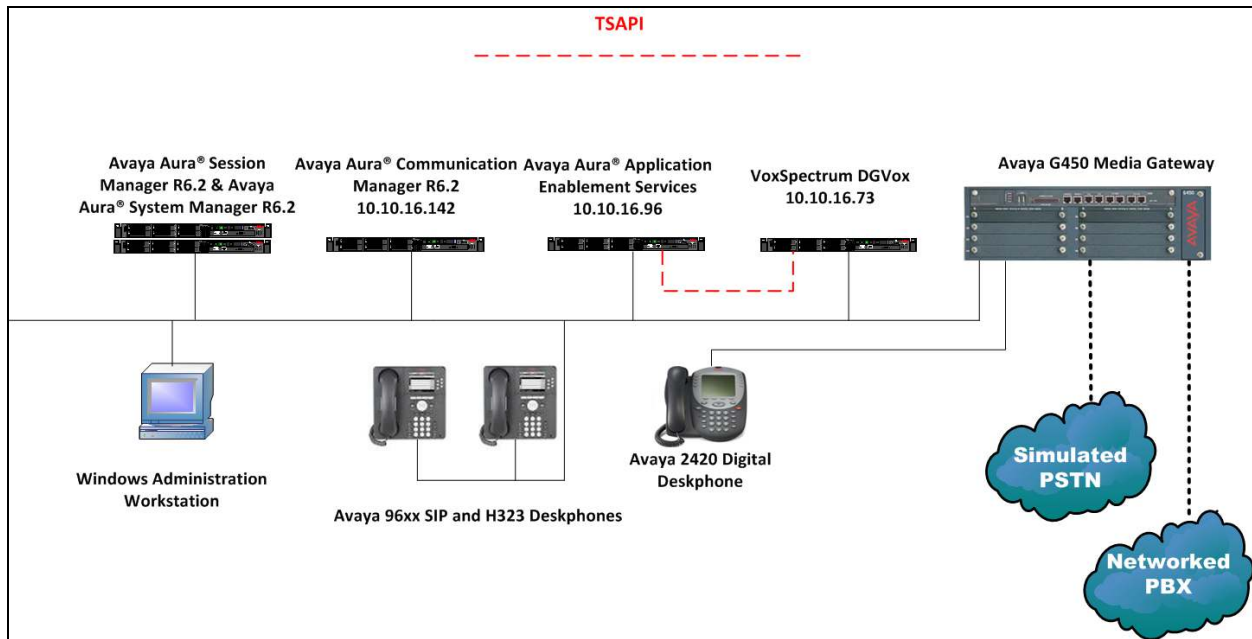
- Where a call is placed from recorded H.323 station A over an H.323 trunk to a networked PBX, the recording fails. This can be rectified by disabling shuffling on the H.323 trunk.
- Where a call is placed from recorded station A over an H.323 trunk to a networked PBX, and A puts the call on hold, only the part of the call after the call is retrieved is recorded. This can be rectified by disabling shuffling on the H.323 trunk.
- Where a call is placed to or from a recorded SIP station C and C performs hold and retrieve activities, the second recorded leg of the call shows outgoing with no dialed digits.
- Where a call is placed from station A to station C and C conferences SIP station D the channel status does not show an active call for C.
- Where A is forwarded to unrecorded station E and C calls A, station E does not appear on the recording data.
- Where a bridged appearance is configured on E for A or C and a call is placed to A or C and answered using the bridged appearance of A or C on E, the recording data does not contain any dialed digits or caller ID.
- Where a bridged appearance for recorded SIP station D is configured on E and a call is placed from the bridged appearance for D on E the call recording data shows as incoming with no dialed digits or caller ID.
- Where a call is placed between A and C and the LAN cable is disconnected and after 5 minutes reconnected to the DGVox Server, the legs of the 2 call prior to disconnection appear as outgoing in the recording data. After reconnection the recording is resumed correctly and when the call ends the recording data is accurate.

## 2.3. Support

Support for DGVox is available at: [support@voxspectrum.com](mailto:support@voxspectrum.com)

### 3. Reference Configuration

An Avaya S8800 Server running Avaya Aura® Communication Manager R6.2 serving H.323 endpoints with an Avaya G450 Media Gateway was configured along with Avaya Aura® Session Manager R6.2 hosted on an Avaya S8800 Server providing SIP endpoints. VoxSpectrum DGVox was configured on the same IP network for connection to Avaya Aura® Application Enablement Services over TSAPI.



#### **Avaya Aura® Communication Manager, Avaya Aura® Session Manager and Avaya Aura® Application Enablement Services with VoxSpectrum DGVox Solution**

## 4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on Avaya S8800 Server	R6.2 SP4 build R016x.02.0.823.0-20199
Avaya Aura® Session Manager running on Avaya S8800 Server	R6.2 SP3
Avaya Aura® Application Enablement Services	R6.2
Avaya G450 Media Gateway <ul style="list-style-type: none"><li>• MM710</li><li>• MM712</li></ul>	31.22.0 <ul style="list-style-type: none"><li>• HW5 FW22</li><li>• HW7 FW14</li></ul>
Avaya 9630 IP Deskphone	<ul style="list-style-type: none"><li>• H.323 S3.1 SP5</li><li>• SIP 2.6 SP9</li></ul>
Avaya 2420 Digital Deskphone	2420 Rel 6.00 HWT=51H HWV=1 FWV=6
VoxSpectrum DGVox	<ul style="list-style-type: none"><li>• v8.1</li><li>• Avaya Application Enablement Services TSAPI Client 4.2.474</li></ul>

## 5. Configure Avaya Aura® Communication Manager

The configuration and verification operations illustrated in this section were all performed using the Communication Manager System Administration Terminal (SAT). It is assumed that the relevant dialplan, hunt groups, stations, trunks and call routing have been configured. The connection from Communication Manager to Session Manager is not specific to the test environment and is therefore not detailed below.

The information provided in this section describes the configuration of Communication Manager for this solution. For all other provisioning information such as installation and configuration, please refer to the product documentation in **Section 10**.

## 5.1. Configure AEServices

An AE Services link must be established between Communication Manager and Application Enablement Services. Enter the command **change node-names ip** and enter the node **Name** and **IP Address** for Application Enablement Services in this case **10.10.16.96**. Take a note of the **procr** node **Name** and **IP Address**, in this case **10.10.16.142**.

```
change node-names ip                                     Page 1 of 2
```

		IP NODE NAMES
Name	IP Address	
<b>procr</b>	<b>10.10.16.142</b>	
CM521	10.10.16.23	
Gateway	10.10.16.1	
IPbuffer	10.10.16.184	
Intuition	10.10.16.51	
MedPro	10.10.16.32	
Presence	10.10.16.83	
RDTT	10.10.16.185	
SESMNGR	10.10.16.44	
SM1	10.10.16.43	
SM61	10.10.16.201	
default	0.0.0.0	
<b>aesserver62</b>	<b>10.10.16.96</b>	

In order for Communication Manager to establish a connection to Application Enablement Services, administer the CTI Link as shown below. Using the **add cti-link next** command specify an available **Extension** number, set the **Type** as **ADJ-IP**, which denotes that this is a link to an IP connected adjunct, and name the link for easy identification, in this instance, the node-name is used.

```
add cti-link next                                     Page 1 of 3
```

		CTI LINK
CTI Link:	1	
Extension:	<b>5899</b>	
Type:	<b>ADJ-IP</b>	
Name:	<b>aesserver62</b>	
		COR: 1

Using the command **change ip-services**, configure IP-Services using **AESVCS** as the **Service Type** enter the **procr** node name as noted above as the **Local Node**

```
change ip-services                                     Page 1 of 4
```

			IP SERVICES		
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
<b>AESVCS</b>	<b>y</b>	<b>procr</b>	<b>8765</b>		

On **Page 4**, set the **AE Services Server** node-name and the **Password** that Application Enablement Services will use to authenticate with Communication Manager.

change ip-services		AE Services Administration			Page 4 of 4
Server ID	AE Services Server	Password	Enabled	Status	
1:	aesserver62	Avayapassword1	y	in use	

## 5.2. Configure Class of Restriction

A class of restriction must be configured in order that stations can be service observed and/or be service observers. For the purpose of the compliance test both the service observe stations and the recorded stations used COR 1. Enter the command **change cor 1** and configure **Can Be Service Observed** and **Can Be A Service Observer** to **y**.

change cor 1		CLASS OF RESTRICTION		Page 1 of 23
COR Number: 1				
COR Description:				
FRL: 0		APLT? y		
<b>Can Be Service Observed? y</b>		Calling Party Restriction: none		
<b>Can Be A Service Observer? y</b>		Called Party Restriction: none		
Time of Day Chart: 1		Forced Entry of Account Codes? n		
Priority Queuing? n		Direct Agent Calling? n		
Restriction Override: none		Facility Access Trunk Test? n		
Restricted Call List? n		Can Change Coverage? n		
Access to MCT? y		Fully Restricted Service? n		
Group II Category For MFC: 7		Hear VDN of Origin Annc.? n		
Send ANI for MFE? n		Add/Remove Agent Skills? n		
MF ANI Prefix:		Automatic Charge Display? n		
Hear System Music on Hold? y		PASTE (Display PBX Data on Phone)? n		
		Can Be Picked Up By Directed Call Pickup? y		
		Can Use Directed Call Pickup? y		
		Group Controlled Restriction: inactive		

### 5.3. Configure System-Wide Service Observe Features

Enter the command **change system-parameters features** and on **Page 11** set **Service Observing: Warning Tone** to **n** and **Service Observing/SSC Allowed with Exclusion** and **Allow Two Observers in Same Call** to **y**.

```
change system-parameters features                               Page 11 of 19
                                FEATURE-RELATED SYSTEM PARAMETERS
CALL CENTER SYSTEM PARAMETERS
  EAS
    Expert Agent Selection (EAS) Enabled? y
    Minimum Agent-LoginID Password Length:
    Direct Agent Announcement Extension:                Delay:
    Message Waiting Lamp Indicates Status For: station

  VECTORING
    Converse First Data Delay: 0                Second Data Delay: 2
    Converse Signaling Tone (msec): 100        Pause (msec): 70
    Prompting Timeout (secs): 10
    Interflow-qpos EWT Threshold: 2
    Reverse Star/Pound Digit For Collect Step? n
    Available Agent Adjustments for BSR? n
    BSR Tie Strategy: 1st-found
    Store VDN Name in Station's Local Call Log? n
SERVICE OBSERVING
  Service Observing: Warning Tone? n          or Conference Tone? n
Service Observing/SSC Allowed with Exclusion? y
Allow Two Observers in Same Call? y
```



## 5.4. Configure Service Observe Stations

DGVox uses a pool of stations as recording extensions, these are used to service observe into stations which are configured to have their calls recorded. Enter the command **add station next** and configure a relevant **Extension**, set the **Security Code**, set the **Type** as **4624**, the **Port** as **IP** and assign an identifying **Name**. Ensure that **IP SoftPhone** is set to **y** and the **COR** is that configured in **Section 5.2**. Repeat this according to the number extensions required by DGVox. During the compliance test 4 stations were configured for this purpose, 6500 – 6503.

```
add station next                                     Page 1 of 6
                                                    STATION
Extension: 6500                                Lock Messages? n          BCC: 0
Type: 4624                                    Security Code: 1234    TN: 1
Port: IP                                       Coverage Path 1:          COR: 1
Name: Recorder, 6500                          Coverage Path 2:          COS: 1
                                                    Hunt-to Station:
STATION OPTIONS
                                                    Time of Day Lock Table:
    Loss Group: 19                                Personalized Ringing Pattern: 1
                                                    Message Lamp Ext: 6500
    Speakerphone: 2-way                          Mute Button Enabled? y
    Display Language: english
    Survivable GK Node Name:
    Survivable COR: internal                      Media Complex Ext:
    Survivable Trunk Dest? y                      IP SoftPhone? y
                                                    IP Video Softphone? n
    Short/Prefixed Registration Allowed: default
```

On **Page 4** configure **Button Assignment 8** with the **service-obsrv** feature.

```
change station 6500                                     Page 4 of 6
                                                    STATION
SITE DATA
  Room:                                         Headset? n
  Jack:                                         Speaker? n
  Cable:                                       Mounting: d
  Floor:                                       Cord Length: 0
  Building:                                    Set Color:

ABBREVIATED DIALING
  List1:                                       List2:                                       List3:

BUTTON ASSIGNMENTS
  1: call-appr                               7:
  2: call-appr                               8: serv-obsrv
  3:                                          9:
  4: conf-dsp                                10:
  5:                                          11:
  6:                                          12:
```

### 5.5. Configure SIP Stations for CTI Control

SIP stations must be configured so they can be monitored by DGVox, enter the command **change station xxxx** where **xxxx** is a SIP extension and configure **Type of 3PCC Enabled to Avaya** in this instance on **Page 6**. For the purposes of the compliance test SIP stations 6002 and 6003 were configured.

```
change station 6002                                     Page 6 of 6
                                                    STATION
SIP FEATURE OPTIONS
  Type of 3PCC Enabled: Avaya
  SIP Trunk: aar
```

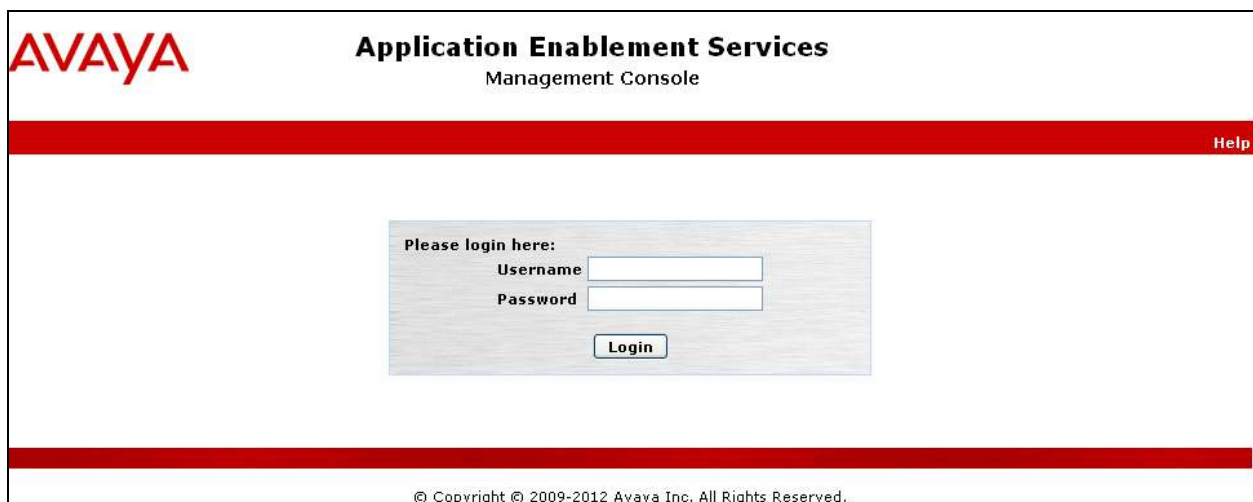
## 6. Configure Avaya Aura® Application Enablement Services Server

This section provide the procedures for configuring Application Enablement Services. The procedures include the following areas:

- Launch OAM interface
- Administer the Switch Connection
- Administer TSAPI Link
- Restart TSAPI Service
- Obtain Tlink name
- Administer Avaya CTI User

### 6.1. Launch OAM Interface

Access the OAM web-based interface of AE Services, in this instance using the URL <https://10.10.16.96>. The Management console is displayed. Log in using the appropriate credentials.



The screenshot shows the Avaya Application Enablement Services Management Console login page. The page features the Avaya logo in the top left corner and the title "Application Enablement Services Management Console" in the top center. A red horizontal bar spans the width of the page, with a "Help" link in the top right corner. The main content area contains a login form with the text "Please login here:" followed by "Username" and "Password" labels, each with an adjacent input field. Below the input fields is a "Login" button. At the bottom of the page, a red horizontal bar contains the copyright notice: "© Copyright © 2009-2012 Avaya Inc. All Rights Reserved."

The **Welcome to OAM** screen is displayed next.

The screenshot shows the Avaya Application Enablement Services Management Console. The top left features the Avaya logo and the title 'Application Enablement Services Management Console'. The top right displays system information: 'Welcome: User craft', 'Last login: Tue Oct 2 15:09:34 2012 from 10.10.16.62', 'Number of prior failed login attempts: 0', 'HostName/IP: aesserver62/10.10.16.96', 'Server Offer Type: TURNKEY', 'SW Version: r6-2-0-18-0', and 'Server Date and Time: Fri Oct 5 15:17:18 BST 2012'. A red navigation bar contains 'Home | Help | Logout'. A left sidebar lists menu items: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security, Status, User Management, Utilities, and Help. The main content area is titled 'Welcome to OAM' and contains a paragraph: 'The AE Services Operations, Administration, and Management (OAM) Web provides you with tools for managing the AE Server. OAM spans the following administrative domains:'. This is followed by a bulleted list of domains and their functions: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security, Status, User Management, and Utilities. A final paragraph states: 'Depending on your business requirements, these administrative domains can be served by one administrator for all domains, or a separate administrator for each domain.' The footer reads 'Copyright © 2009-2012 Avaya Inc. All Rights Reserved.'

## 6.2. Administer the Switch Connection

To establish the connection between Communication Manager and AE Services, click **Communication Manager Interface** → **Switch Connections**. In the field next to Add Connection enter **CM62** and click on **Add Connection**, the following screen will be displayed.

The screenshot shows the 'Communication Manager Interface | Switch Connections' screen. The top navigation bar includes 'Home | Help | Logout'. The left sidebar shows the menu path: AE Services, Communication Manager Interface, and Switch Connections (highlighted). The main content area is titled 'Switch Connections' and features a text input field containing 'CM62' and an 'Add Connection' button. Below this is a table with the following structure:

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
[Buttons: Edit Connection, Edit PE/CLAN IPs, Edit H.323 Gatekeeper, Delete Connection, Survivability Hierarchy]			

The following screen is displayed. Complete the configuration as shown and enter the password specified in **Section 5.1** when configuring AESVCS in ip-services. Click on **Apply** when done.

Communication Manager Interface | Switch Connections Home | Help | Logout

AE Services  
 Communication Manager Interface  
 Switch Connections  
 Dial Plan  
 Licensing  
 Maintenance  
 Networking  
 Security  
 Status  
 User Management  
 Utilities  
 Help

**Connection Details - CM62**

Switch Password

Confirm Switch Password

Msg Period  Minutes (1 - 72)

SSL

Processor Ethernet

Apply Cancel

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The following screen will be shown displaying the newly added switch connection, click on **Edit PE/CLAN IPs** in order to specify the IP address of the procr, as noted in **Section 5.1**.

Communication Manager Interface | Switch Connections Home | Help | Logout

AE Services  
 Communication Manager Interface  
 Switch Connections  
 Dial Plan  
 Licensing  
 Maintenance  
 Networking  
 Security  
 Status  
 User Management  
 Utilities  
 Help

**Switch Connections**

Add Connection

Connection Name	Processor Ethernet	Msg Period	Number of Active Connections
CM62	Yes	30	0

Edit Connection Edit PE/CLAN IPs Edit H.323 Gatekeeper Delete Connection Survivability Hierarchy

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Next to **Add name or IP**, enter the IP address of the procr as shown below.

Communication Manager Interface | Switch Connections Home | Help | Logout

AE Services  
Communication Manager Interface  
Switch Connections  
Dial Plan  
Licensing  
Maintenance  
Networking  
Security  
Status  
User Management  
Utilities  
Help

Edit Processor Ethernet IP - CM62

10.10.16.142 Add/Edit Name or IP

Name or IP Address	Status
10.10.16.142	Idle

Back

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The following screen will now appear displaying the newly added IP address.

Communication Manager Interface | Switch Connections Home | Help | Logout

AE Services  
Communication Manager Interface  
Switch Connections  
Dial Plan  
Licensing  
Maintenance  
Networking  
Security  
Status  
User Management  
Utilities  
Help

Edit Processor Ethernet IP - CM62

10.10.16.142 Add/Edit Name or IP

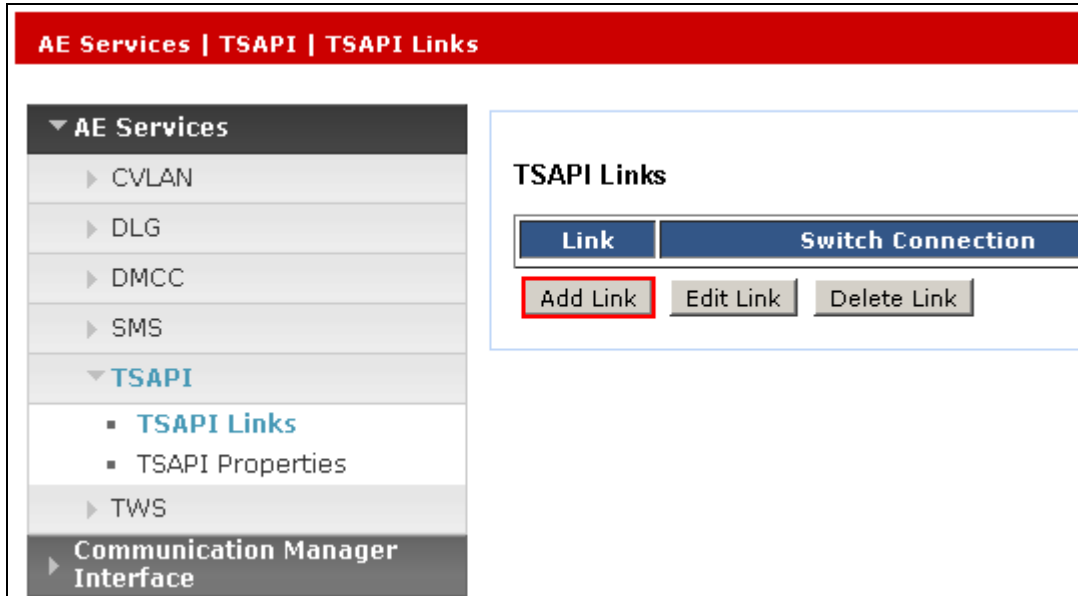
Name or IP Address	Status
10.10.16.142	Idle

Back

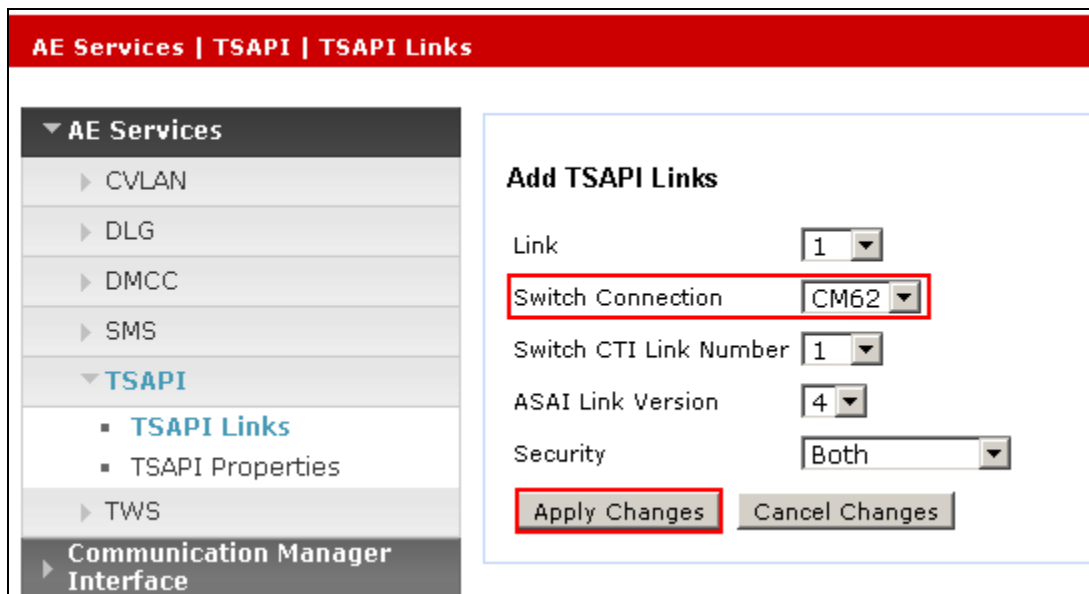
Copyright © 2009-2012 Avaya Inc. All Rights Reserved.

### 6.3. Administer TSAPI Link

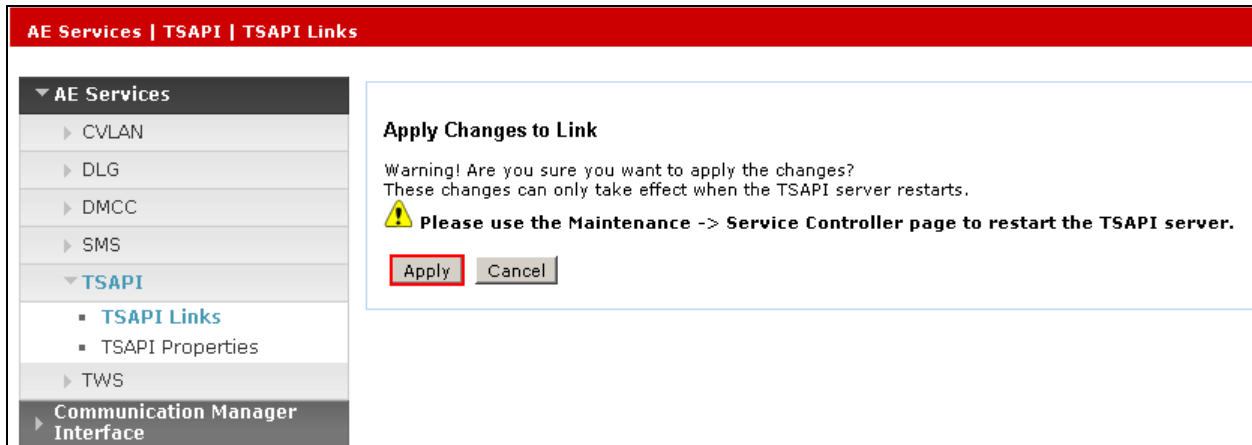
Select **AE Services** → **TSAPI** → **TSAPI Links** from the left pane. The **TSAPI Links** screen is displayed, click **Add Link**.



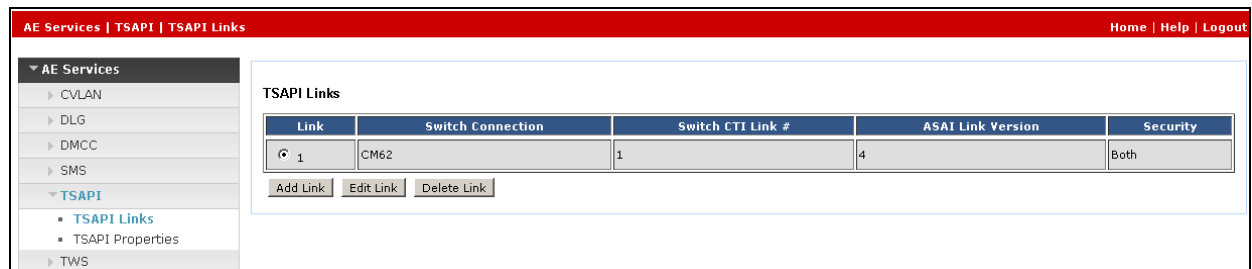
Configure the TSAPI Link using the newly configured **Switch Connection** as shown below and click **Apply Changes**.



The screen below will be displayed with instructions to restart the TSAPI Server. Click **Apply** taking note of the instructions given.

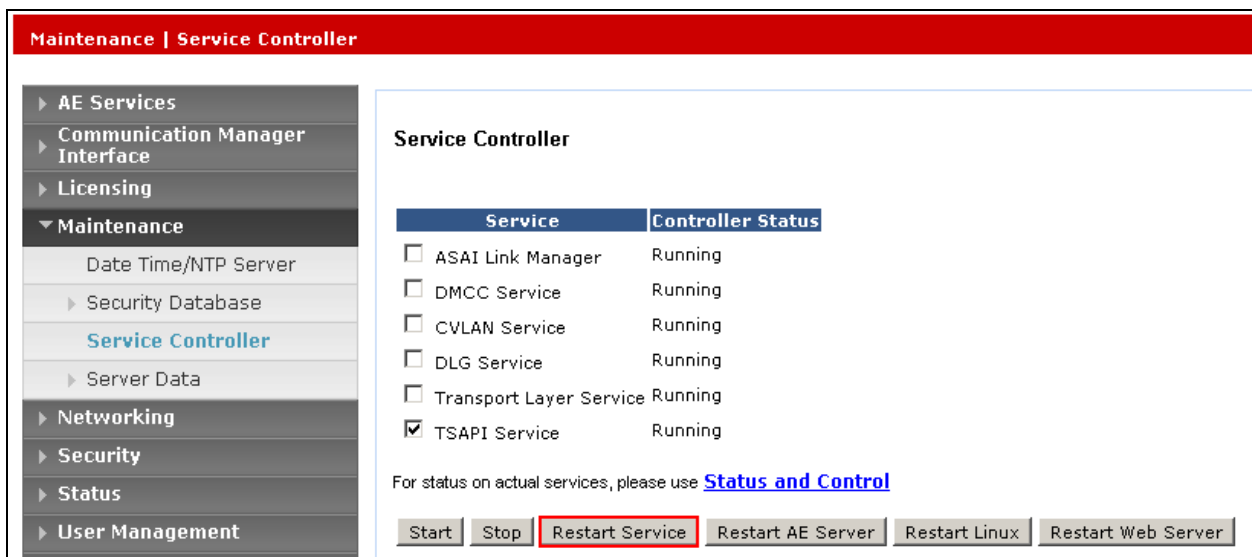


The following screen will be displayed showing the TSAPI Link.



## 6.4. Restart TSAPI Service

Select **Maintenance** → **Service Controller** from the left pane, to display the **Service Controller** screen in the right pane. Check the **TSAPI Service**, and click **Restart Service**.





## 6.5. Obtain Tlink Name

Select **Security** → **Security Database** → **Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. Locate the Tlink name associated with the relevant switch connection, which would use the name of the switch connection as part of the Tlink name.

The screenshot shows a web interface with a red header bar containing the text "Security | Security Database | Tlinks". On the left is a navigation tree with the following items: AE Services, Communication Manager Interface, Licensing, Maintenance, Networking, Security (expanded), Account Management, Audit, Certificate Management, Enterprise Directory, Host AA, PAM, Security Database (expanded), Control, CTI Users, Devices, Device Groups, Tlinks (highlighted in blue), Tlink Groups, Worktops, and Session Timeouts. The main content area is titled "Tlinks" and contains a "Tlink Name" section with two radio button options: "AVAYA#CM62#CSTA#AESSERVER62" (selected) and "AVAYA#CM62#CSTA-S#AESSERVER62". A "Delete Tlink" button is located below the options.

## 6.6. Administer CTI User

In this section a CTI user is configured for DGVoX to communicate with Application Enablement Services. Select **User Management** → **User Admin** → **Add User** from the left pane to display the **Add User** screen in the right pane. Enter desired values for **User Id**, **Common Name**, **Surname**, **User Password** and **Confirm Password**. For **CT User**, select **Yes** from the drop-down list. Retain the default value in the remaining fields. Click Apply at the bottom of the screen (not shown below).

**User Management | User Admin | Add User**

**Add User**

Fields marked with \* can not be empty.

* User Id	DGvox
* Common Name	DGvox
* Surname	DGvox
* User Password	••••••••
* Confirm Password	••••••••
Admin Note	
Avaya Role	None
Business Category	
Car License	
CM Home	
Css Home	
CT User	Yes
Department Number	

This user should be configured as an unrestricted user. Select **Security** → **Security Database** → **CTI Users** → **List All Users** from the left pane, click on the radio button beside the user created above, in this case, **DGvox** and click **Edit**. Place a tick in the box next to **Unrestricted Access**, as shown in the image below. Click **Apply Changes** when done.

Security   Security Database   CTI Users   List All Users		
<b>Edit CTI User</b>		
User Profile:	User ID	DGvox
	Common Name	DGvox
	Worktop Name	NONE
	Unrestricted Access	<input checked="" type="checkbox"/>
Call and Device Control:	Call Origination/Termination and Device Status	None
Call and Device Monitoring:	Device Monitoring	None
	Calls On A Device Monitoring	None
	Call Monitoring	<input type="checkbox"/>
Routing Control:	Allow Routing on Listed Devices	None
<input type="button" value="Apply Changes"/> <input type="button" value="Cancel Changes"/>		

## 6.7. Configure Port for Unencrypted DMCC Connection

Click **Networking** → **Ports**, in the **DMCC Server Ports** section ensure that **Unencrypted Port** is **Enabled** and set to **4721**. Click **Apply Changes** (not shown) when done.

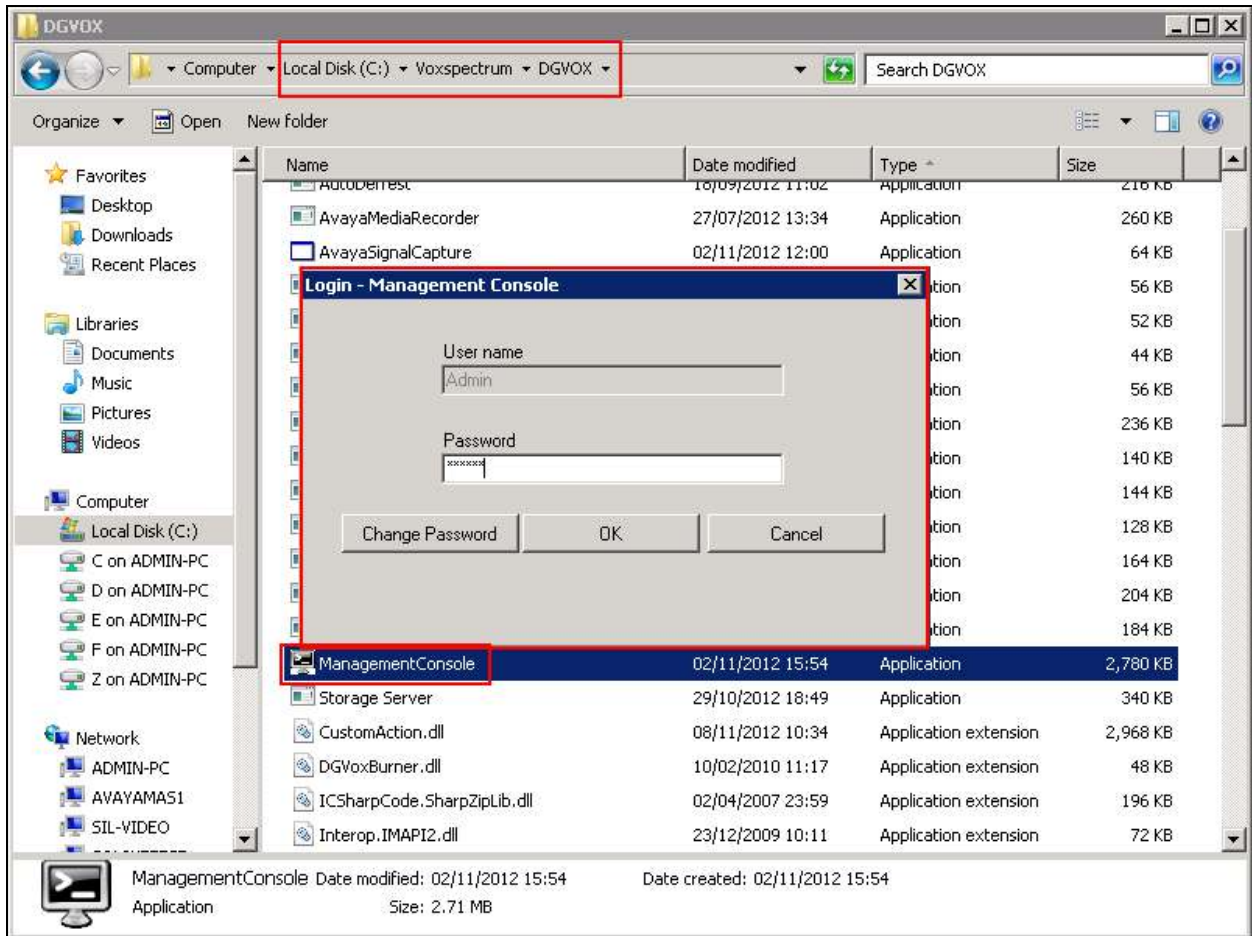
<b>Networking</b> AE Service IP (Local IP) Network Configure <b>Ports</b> TCP Settings <b>Security</b> <b>Status</b> <b>User Management</b> <b>Utilities</b> <b>Help</b>	Encrypted TCP Port	9998	<input checked="" type="radio"/> <input type="radio"/>
	DLG Port	TCP Port	5678
	TSAPI Ports		Enabled Disabled
	TSAPI Service Port	450	<input checked="" type="radio"/> <input type="radio"/>
	Local TLINK Ports		
	TCP Port Min	1024	
	TCP Port Max	1039	
	Unencrypted TLINK Ports		
	TCP Port Min	<input type="text" value="1050"/>	
	TCP Port Max	<input type="text" value="1065"/>	
	Encrypted TLINK Ports		
	TCP Port Min	<input type="text" value="1066"/>	
	TCP Port Max	<input type="text" value="1081"/>	
	DMCC Server Ports		Enabled Disabled
	Unencrypted Port	<input type="text" value="4721"/>	<input checked="" type="radio"/> <input type="radio"/>
Encrypted Port	<input type="text" value="4722"/>	<input checked="" type="radio"/> <input type="radio"/>	
TR/87 Port	<input type="text" value="4723"/>	<input type="radio"/> <input checked="" type="radio"/>	

## 7. Configure VoxSpectrum DGVOX

DGVOX is installed and commissioned by a VoxSpectrum commissioning engineer. The following section describes the configuration necessary for interfacing with the Avaya components of the solution.

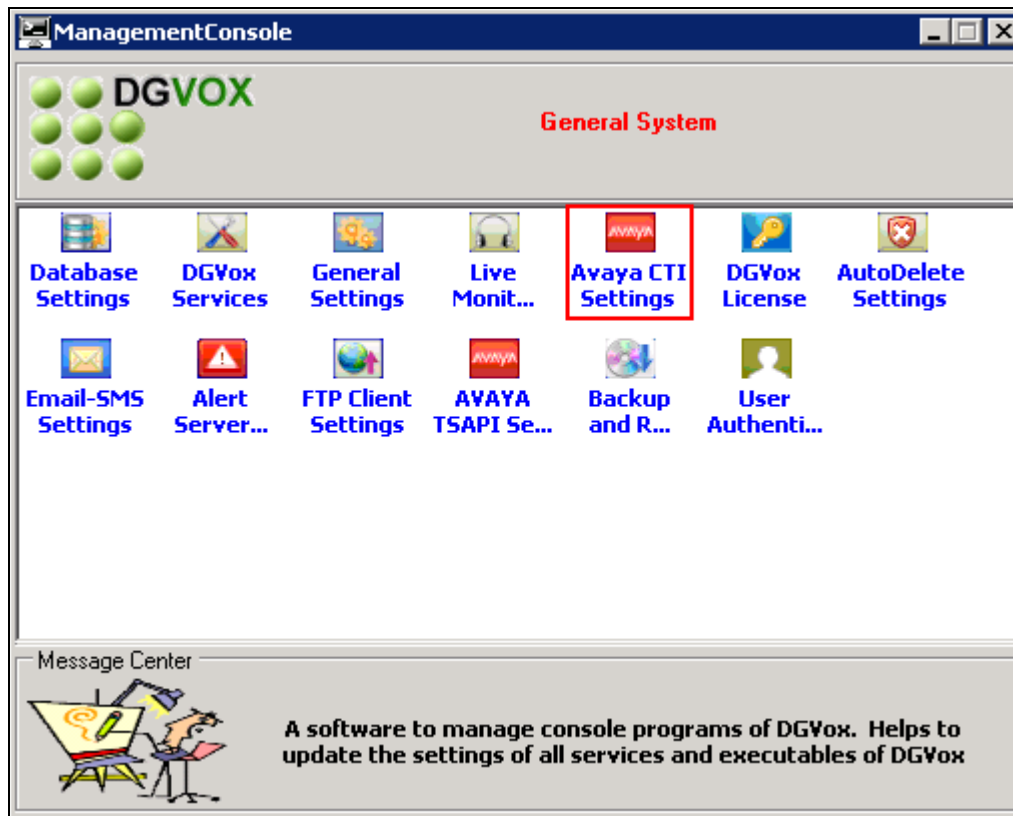
### 7.1. Login to Management Console

The initial DGVOX configuration is administered using the Management Console, the default location is `c:\Voxspectrum\DGVOX\ManagementConsole.exe`. Double click on the **Management Console** icon and enter the user credentials to log in.



## 7.2. Administer CTI Connection

Double click on the **Avaya CTI Settings** icon in the Management Console



The screen below shows the configuration required to connect to DGVoX to Communication Manager and Application Enablement Services and can be described as follows:

- **CM IP** – enter the procr IP address
- **AES IP** – enter the Application Enablement Services IP address
- **MediaForwarding IP** – enter the IP address of the DGVoX server
- **AES Port** – enter the unencrypted DMCC port number administered in **Section 6.7**
- **TSAPI Server** – enter the Tlink string obtained in **Section 6.5**
- **Local IP** – enter the IP address of the DGVoX Server
- **Recording mode** – select **Service Observe** from the drop down box
- **TSAPI LoginID** and **DMCC LoginID** – enter the CTI user administered in **Section 6.6**
- **TSAPI a Password** and **DMCC Password** – enter the CTI user password administered in **Section 6.6**

Click **Apply** when done.

**Avaya CTI Settings**

General Settings | Channel Settings


License  
Channel No: 8 | Index: 1

CTI Settings  
CM IP: 10.10.16.142 | AES Port: 4721  
AES IP: 10.10.16.96 | Codec: g711U  
MediaForwarding IP: 10.10.16.73 | TSAPI Version: TS1-2  
TSAPI Server: AVAYA#CM62#CSTA-S#AESSEVER62  
Session Duration: 60 | DMCC License: 10  
Local IP: 10.10.16.73 | Server Port: 9011  
Recording Mode: Service Observe

TSAPI LoginID: DGvox | TSAPI Password: \*\*\*\*\*  
DMCC LoginID: DGvox | DMCC Password: \*\*\*\*\*

Log  
 Recorder  SignalCapture  TSAPI | Max. File Size: 10

**Apply** **Cancel**

Message Center  
 **Updates Avaya CTI General Settings**

### 7.3. Configure Recording Channel Mapping

Each of the administered recording extensions are configured with a Channel ID and mapped to the station which must be recorded. Click on the **Channel Settings** tab and configure Channel Extension Mapping as follows:

- Channel ID – choose the first channel number in this case 001
- Extension – enter the station number to be recorded
- Extension Password – enter the Security Code configured for this station
- Virtual Extension – enter the recorder station configured in **Section 5.4**
- Virtual Extension Password – enter the security code for the station configured in **Section 5.4**

Click **Apply** when done and repeat the task for the remaining Channel ID and stations to be recorded.

The screenshot shows the 'Avaya CTI Settings' dialog box with the 'Channel Settings' tab selected. The 'Channel-Extension Mapping' section is highlighted with a red border. It contains the following fields and buttons:

- Channel Id: 001 (dropdown menu)
- Extension: 6000 (text input)
- Extension Password: \*\*\*\* (password input)
- Virtual Extension: 6500 (text input)
- Virtual Extension Password: \*\*\*\* (password input)
- Buttons: Apply, Delete

Below this section is the 'Hunt Group Details' section with a 'Hunt group' dropdown and 'Add/Update' and 'Delete' buttons. At the bottom is a 'Message Center' section with an icon of a person at a computer and the text 'Updates Avaya CTI Channel - Extension Map Settings'. A 'Cancel' button is also present.



## 7.4. Add Agent Configuration

Navigate to the URL of the DGVOx web interface, in this case <https://10.10.16.73/DGVOX/> and enter the appropriate login credentials.

VOX spectrum

Voice Logging and Recording solution  
DGVOX

Username  Password

Remember me on this computer  | [Language and Calendar](#)

www.voxspectrum.com

Click **Manage** → **Access Manager** → **New Agent** and add the details for any Communication ACD agents to be recorded. Click **Save** when done.

VOX spectrum

Access Manager

Home >> Access Manager

Welcome admin! [Log Off] | Help

Access Manager

[Collapse all](#) | [Expand all](#)

- Avaya
  - Users (New User)
    - All Users (New User)
    - Administrators (New User)
    - Power Users (New User)
  - Agents (New Agent | New Agent Group)
    - All Agents (New Agent)
    - Channels (New Channel Group)

[Collapse all](#) | [Expand all](#)

Profile

Agent Profile:

Agent ID:  First Name:

Middle Name:  Last Name:

Email:

## 8. Verification Steps

The following steps can be used to verify the correct operation of the Avaya and VoxSpectrum solution.

### 8.1. Verify Avaya Aura® Application Enablement Services DMCC Status

Using the Application Enablement Services web interface click **Status** → **Status and Control** → **DMCC Service Summary** confirm that there is an active **Session ID**, the **User** is that configured in **Section 6.6**, the **Application** is **Avatya Signalling** which represents the DGVoX application, the **Far-end Identifier** is the IP address assigned to the DGVoX server, and the **# of Associated Devices** relates to the number of service observer recorder stations configured, in this case **4**.

**Status | Status and Control | DMCC Service Summary** Home | Help | Logout

- ▶ AE Services
- ▶ Communication Manager Interface
- ▶ Licensing
- ▶ Maintenance
- ▶ Networking
- ▶ Security
- ▼ **Status**
  - Alarm Viewer
  - ▶ Logs
  - ▼ **Status and Control**
    - CVLAN Service Summary
    - DLG Services Summary
    - **DMCC Service Summary**
    - Switch Conn Summary
    - TSAPI Service Summary

**DMCC Service Summary - Session Summary**

Enable page refresh every  seconds

Session Summary [Device Summary](#)  
Generated on Thu Jan 03 12:26:57 GMT 2013

Service Uptime: 33 days, 23 hours 13 minutes

Number of Active Sessions: 1

Number of Sessions Created Since Service Boot: 11

Number of Existing Devices: 4

Number of Devices Created Since Service Boot: 81

	Session ID	User	Application	Far-end Identifier	Connection Type	# of Associated Devices
<input type="checkbox"/>	DE20A004F500922DC 6A63004BFC256B7-95900	DGvox	AvatyaSignalling	10.10.16.73	XML Unencrypted	4

Item 1-1 of 1

## 8.2. Verify VoxSpectrum Limited DGVoX Live Monitor

From the DGVoX web interface, click **Home** and confirm that the **Live Monitor** accurately displays the activity on the recorder at that time. In this case, extensions **6000** and **6001** are active and being recorded.


The screenshot displays the DGVoX web interface. On the left is a navigation menu with options: Home, Channels, Search, Schedule, Reports, Manage, and Settings. The main content area is titled "Manage Channels" and includes a "Live Monitor" section with a "Start" button and "Auto Start" checkbox. Below this, the channel label is "6000" and the status is "Online". A "Calls" table shows the last 5 calls with columns for Agent ID, Dialed Digits, Caller ID, and Start Time. A "Legends" section shows status counts: Online (2), Ringing (0), Idle (6), Disconnected (0), and Off (0). At the bottom, a "Channel By Status" section shows a row of 8 channel status indicators, with the first two (001: 6000 and 002: 6001) highlighted in a red box. The footer shows the date "Thursday, January 03, 2013 12:34:28 PM" and the website "www.voxspectrum.com".

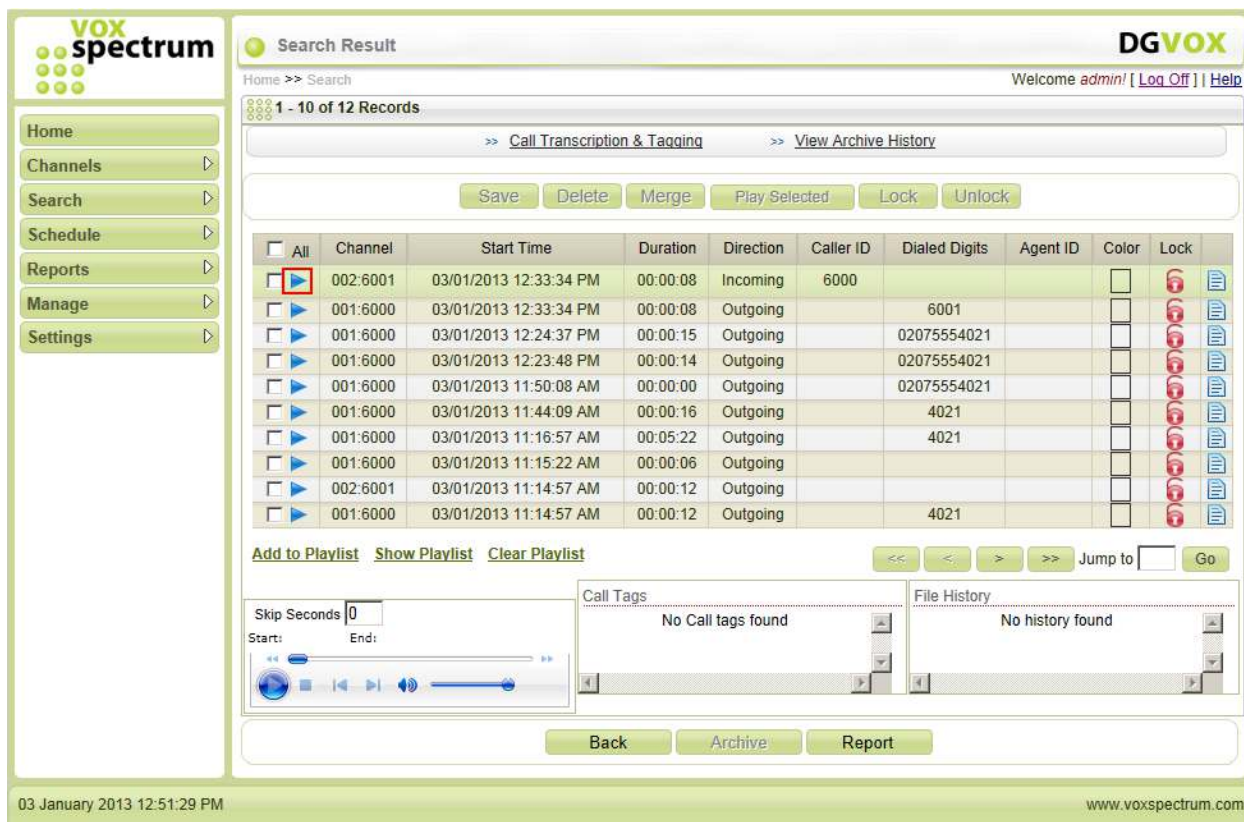
Agent ID	Dialed Digits	Caller ID	Start Time
02075554021			03/01/2013 12:24 PM
02075554021			03/01/2013 12:23 PM
02075554021			03/01/2013 11:50 AM
4021			03/01/2013 11:44 AM
4021			03/01/2013 11:16 AM

Status	Count
Online	2
Ringing	0
Idle	6
Disconnected	0
Off	0

Channel	Status
001 : 6000	Online
002 : 6001	Online
003 : 6002	Idle
004 : 6003	Idle
005 : ext5	Idle
006 : ext6	Idle
007 : ext7	Idle
008 : ext8	Idle

### 8.3. Verify VoxSpectrum Limited DGVoX Search Results and Playback

From the DGVoX web interface, click **Search** → **Search** enter the search parameters required, and click Search (not shown). Verify that the search results accurately present the call activity. Click the  symbol next to the call to be played back and verify clear audio playback is heard.



The screenshot displays the DGVoX web interface. On the left is a navigation menu with options: Home, Channels, Search, Schedule, Reports, Manage, and Settings. The main content area is titled "Search Result" and shows "1 - 10 of 12 Records". Below this is a table of call records with columns: All, Channel, Start Time, Duration, Direction, Caller ID, Dialed Digits, Agent ID, Color, and Lock. The first record is highlighted with a red box. Below the table are buttons for "Add to Playlist", "Show Playlist", and "Clear Playlist", along with navigation arrows and a "Jump to" field. At the bottom, there is a "Skip Seconds" control, a "Call Tags" section (showing "No Call tags found"), and a "File History" section (showing "No history found").

All	Channel	Start Time	Duration	Direction	Caller ID	Dialed Digits	Agent ID	Color	Lock
<input type="checkbox"/>	002:6001	03/01/2013 12:33:34 PM	00:00:08	Incoming	6000				
<input type="checkbox"/>	001:6000	03/01/2013 12:33:34 PM	00:00:08	Outgoing		6001			
<input type="checkbox"/>	001:6000	03/01/2013 12:24:37 PM	00:00:15	Outgoing		02075554021			
<input type="checkbox"/>	001:6000	03/01/2013 12:23:48 PM	00:00:14	Outgoing		02075554021			
<input type="checkbox"/>	001:6000	03/01/2013 11:50:08 AM	00:00:00	Outgoing		02075554021			
<input type="checkbox"/>	001:6000	03/01/2013 11:44:09 AM	00:00:16	Outgoing		4021			
<input type="checkbox"/>	001:6000	03/01/2013 11:16:57 AM	00:05:22	Outgoing		4021			
<input type="checkbox"/>	001:6000	03/01/2013 11:15:22 AM	00:00:06	Outgoing					
<input type="checkbox"/>	002:6001	03/01/2013 11:14:57 AM	00:00:12	Outgoing					
<input type="checkbox"/>	001:6000	03/01/2013 11:14:57 AM	00:00:12	Outgoing		4021			

## 9. Conclusion

All test cases were executed successfully with observations in **Section 2.2**. It is not recommended to use shuffling if H.323 trunks are in use.

## 10. Additional References

This section references the product documentations that are relevant to these Application Notes.

Avaya product documentation can be found at <http://support.avaya.com>.

- *Administering Avaya Aura® Communication Manager, Release 6.2, 03-300509, Issue 7.0 December 2012*

VoxSpectrum product documentation can be obtained by using the contact details in **Section 2.3**.

- *DGVoX 8.1 user manual and installation manual*

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