



Avaya Solution & Interoperability Test Lab

Application Notes for configuring Aculab VoiSentry to interoperate with Avaya Aura® Experience Portal and Avaya Aura® Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps for Aculab VoiSentry to successfully interoperate with Avaya Aura® Experience Portal in an Avaya Aura® Communication Manager environment.

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

These Application Notes describe the compliance tested configuration of Aculab's VoiSentry voice biometric speaker verification system with Avaya Aura® Experience Portal R7.2.1 and Avaya Aura® Communication Manager R8.0.

VoiSentry is designed to enable businesses to add voice authentication solutions to any telephony-based application. Now, business customers can replace frustrating, time consuming verification processes simply by allowing customers verify with their voice. Calls are made to the VoiSentry Voice Biometrics application loaded on Experience Portal. VoiSentry then provides speaker verification and allows the caller to move through the menu based on the correctly phrase spoken.

Some of the benefits of speaker verification.

- More secure than PINs and passwords
- Reduce the threat from fraud and identity theft
- Lower the cost of client authentication
- Offer callers speed and convenience
- Meets obligations for personal data protection
- Improve customer satisfaction metrics

2. General Test Approach and Test Results

Aculab's solution consists of a VoiSentry node located on the DevConnect LAN and a Voice Biometrics application that is installed on Experience Portal. Callers are routed to the Voice Biometrics application on Experience Portal. This application then calls on the VoiSentry node to provide the speaker verification intelligence.

The general test approach was to configure the VoiSentry Voice Biometrics application to communicate with Experience Portal as implemented on a customer's premises. See **Figure 1** for a network diagram. The interoperability compliance testing included feature and serviceability testing. The feature testing verified the ability of VoiSentry to process voice recordings made during VoiceXML calls and to analyse their validity. Callers are greeted with a demo script where speaker verification software can determine if the caller is genuine by asking a phrase to be stated. The caller is then transferred to an "agent phone" upon successful verification. The serviceability testing introduced simulated LAN failures observing the caller experience during and after such a failure.

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.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Experience Portal and VoiSentry utilized a secure HTTPS connection and a self-signed certificate.

2.1. Interoperability Compliance Testing

The interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on placing calls to the VoiSentry Voice Biometrics application. The tests included:

- **Connectivity** – Test that the VoiSentry Voice Biometrics application was installed correctly on Experience Portal.
- **Security** – Verify that a secure connection (HTTPS) and a user/pass details are needed to access the VoiSentry node.
- **Enrolling a new user** – Create a new user ID and associated phrase.
- **Verify existing enrolment** – Test existing phrase voice verification.
- **Verify imposter is rejected** – Test resilience by saying the phrase with a different voice.
- **Delete voiceprint of user** – Using the DTMF menu, delete an existing voiceprint that was previously created.

Serviceability testing – Test the experience of the caller and the behaviour of VoiSentry Voice Biometrics when the VoiSentry node is not available due to a simulated LAN failure.

2.2. Test Results

All functionality and serviceability test cases were completed successfully.

2.3. Support

Technical support can be obtained for Aculab as follows:

- Email: support@aculab.com
- Website: www.aculab.com
- Phone: +44 (0) 1908 273805 (UK)
+1 (781) 352 3551 (USA)

3. Reference Configuration

Figure 1 shows the network topology during interoperability testing. Communication Manager with an Avaya G450 Media Gateway was used as the hosting PBX. VoiSentry is connected to the LAN with the VoiSentry Voice Biometrics installed and configured on Experience Portal. Session Manager is used to route calls to Experience Portal.

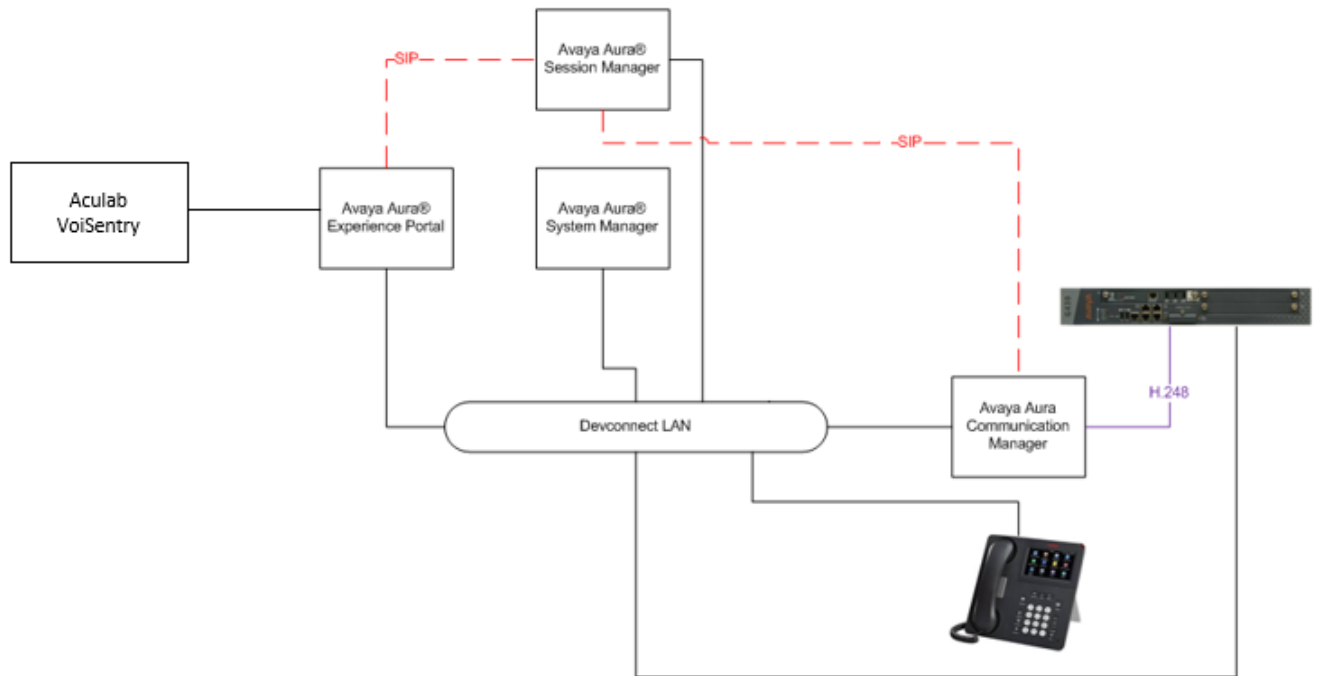


Figure 1: Aculab VoiSentry integrating with Avaya Aura® Experience Portal using Avaya Aura® Communication Manager and Avaya Aura® Session Manager

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya Aura® System Manager running on a virtual server	System Manager 8.0.1.0 Build No. – 8.0.0.0.931077 Software Update Revision No: 8.0.1.0.038826 Feature Pack 1
Avaya Aura® Session Manager running on a virtual server	Session Manager R8.0 FP1 Build No. – 8.0.1.0.801007
Avaya Aura® Communication Manager running on Virtual Server	R018x.00.0.822.0 R8.0.1.0.0 – FP1 Update ID 00.0.822.0-25031
Avaya Aura® Experience Portal MPP Cores Tomcat Java	7.2.1.0.0605 7.2.0.0.117 8.5.12 1.8.0_131-b11
Avaya G450 Gateway	41.10.1 /1
Avaya Media Server running on a Virtual Server	R8.0.0.150
Avaya 9608 H323 Deskphone	96x1 H323 Release 6.6.115
Avaya J179 H323 Deskphone	96x1 H323 Release 6.7.002U
Avaya 9641 SIP Deskphone	96x1 SIP Release 7.1.2.0.14
Avaya J129 SIP Deskphone	SIP 1.0.0.0.0.43
Avaya Vantage Equinox	1.0.0.2
Avaya 9408 Digital Deskphone	N/A
Aculab VoiSentry	1.21.2
Aculab VoiSentry Voice Biometrics Application	1.1.1

5. Configure Avaya Aura® Experience Portal

The information provided in this section describes the configuration of Experience Portal relevant to this solution. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**.

The configuration operations described in this section can be summarized as follows:

- Deploy Voice Biometrics Application
- Add Voice XML Application
- Configure Application Attributes

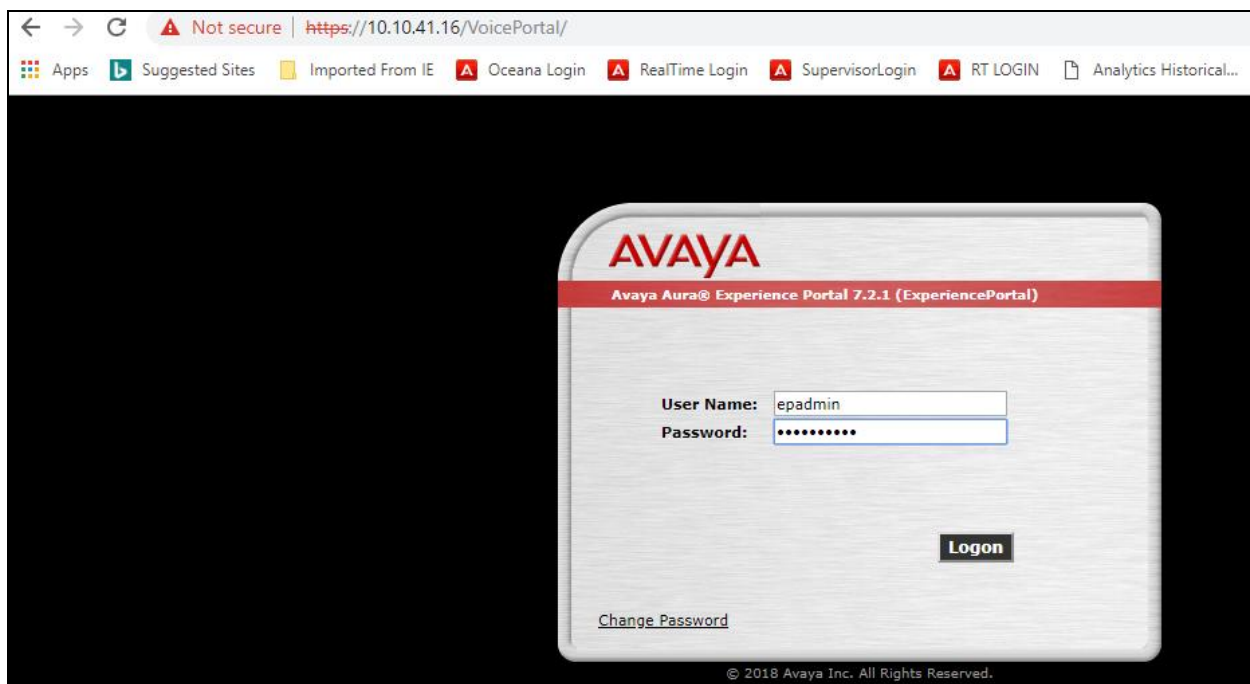
5.1. Deploy Voice Biometrics Application

The VoiSentry Voice Biometrics application is deployed on the Tomcat server running on Experience Portal. The VoiSentry Voice Biometrics application is a VoiceXML application deployed in the Tomcat webapps folder on the application server used to access the Experience Portal applications.

Open a web browser and navigate to the Experience Portal address as shown below

<https://<ExpPortal IP>/VoicePortal>

Enter the appropriate credentials and click on **Logon**.



Navigate to **System Management** → **Application Server** in the left window. Click on the **Host Address** in the main window, this should open a new window.

AVAYA

Avaya Aura® Experience Portal 7.2.1 (ExperiencePortal)

Expand All | Collapse All

- ▼ **User Management**
 - Roles
 - Users
 - Login Options
- ▼ **Real-time Monitoring**
 - System Monitor
 - Active Calls
 - Port Distribution
- ▼ **System Maintenance**
 - Audit Log Viewer
 - Trace Viewer
 - Log Viewer
 - Alarm Manager
- ▼ **System Management**
 - Application Server**
 - EPM Manager
 - MPP Manager
 - Software Upgrade
 - System Backup
- ▼ **System Configuration**
 - Applications
 - EPM Servers
 - MPP Servers
 - SNMP
 - Speech Servers
 - VoIP Connections
 - Zones

You are here: [Home](#) > System Management > Application Server

Application Server (Mar 19, 2019 6:47:09 AM PDT)

Use this page to start and stop the application server co-resident with the primary EPM. deploy, undeploy, start and stop applications on the application server.

Host Address	State
EP.devconnect.oceana	Running

State Commands

[Start](#) [Stop](#)

[Help](#)

The following window is opened to the **Tomcat Web Application Manager**. Scroll down the page.

Tomcat Web Application Manager

Message: OK

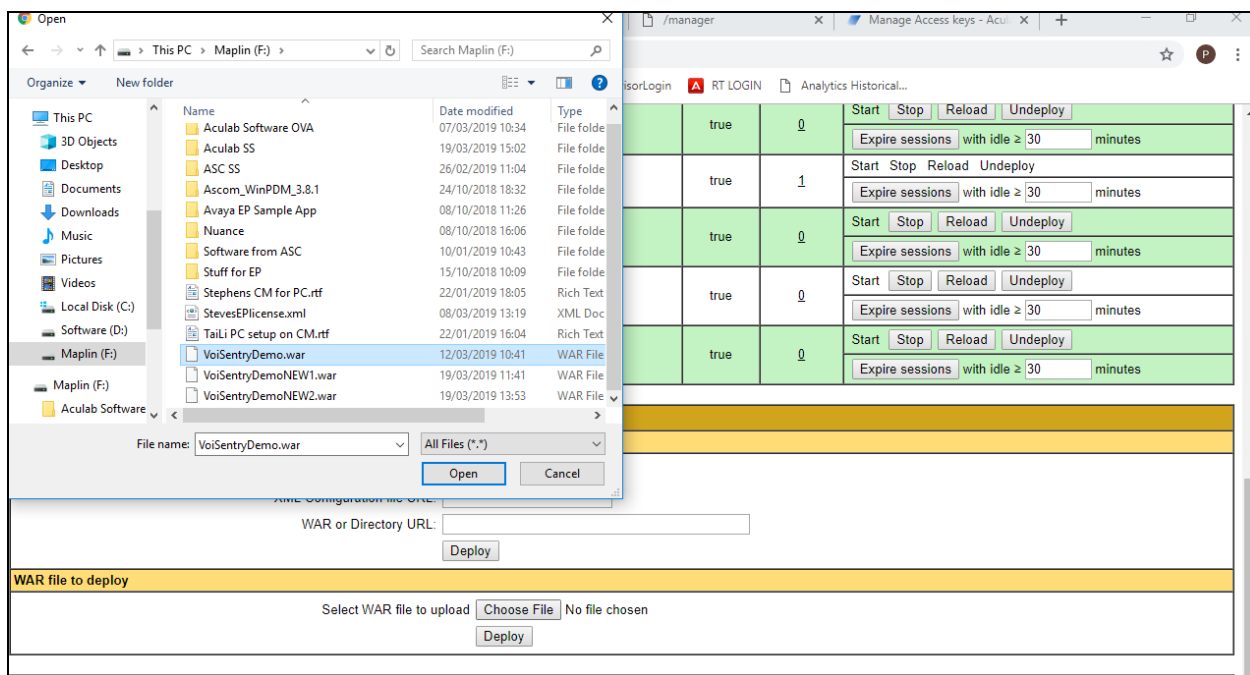
Manager

[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Server Status](#)

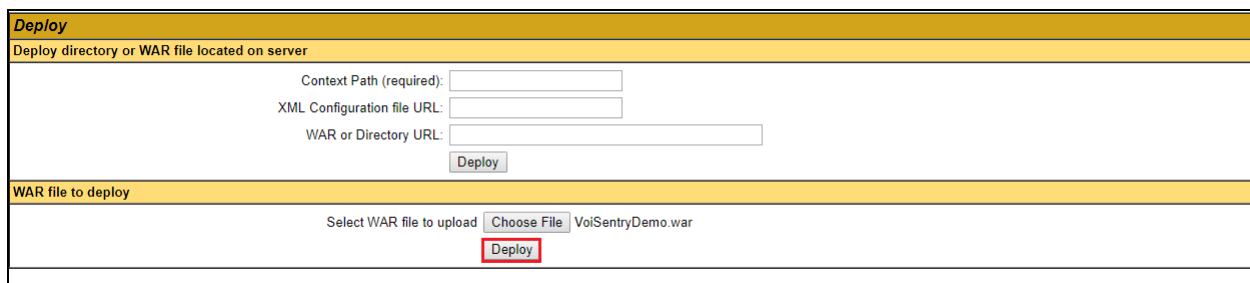
Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/VoiSentryDemo	None specified	Aculab VoiSentry DEMO	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/VoiSentryDemoNEW1	None specified	Aculab VoiSentry DEMO	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/VoiSentryDemoNEW2	None specified	Aculab VoiSentry DEMO	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
/WorkAssignmentSelfService-3.5.0.0.6	None specified		true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

Scroll down to the **WAR file to deploy** section. The WAR file can be chosen by clicking on **Choose File**. A window is opened browsing to the location of the WAR file. This will be a file provided by Aculab.



Click on **Deploy** as shown below.



The new application is shown as being deployed.

Tomcat Web Application Manager

Message: OK

Manager

[List Applications](#) [HTML Manager Help](#) [Manager Help](#) [Server Status](#)

Applications

Path	Version	Display Name	Running	Sessions	Commands
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle >= 30 minutes
/VoiSentryDemo	None specified	Aculab VoiSentry DEMO	true	0	Start Stop Reload Undeploy Expire sessions with idle >= 30 minutes
/VoiSentryDemoNEW1	None specified	Aculab VoiSentry DEMO	true	0	Start Stop Reload Undeploy Expire sessions with idle >= 30 minutes

5.2. Add Voice XML Application

The VoiSentry Voice Biometrics application is added on Experience Portal as a Voice XML application. On Experience Portal navigate to **System Configuration** → **Applications** in the left window. In the main window click on **Add**.

Avaya

Welcome, epadmin
Last logged in today at 5:34:47 AM PDT

Avaya Aura Experience Portal 7.2.1 (ExperiencePortal)

You are here: [Home](#) > System Configuration > Applications

Applications

This page displays the applications that are currently deployed on the Experience Portal system.

Name	Enable	Type	URI	Launch	ASR	TTS	Requested SIP Calls	Configurable Application Variables
Oceana	Yes	VoiceXML	http://10.10.41.16:7080/WorkAssignmentSelfService-3.5.0.0.6/Start	2900	English(USA) en-US	English(USA) en-US Jennifer F	None	None
Oceana2	Yes	VoiceXML	http://10.10.40.135:7080/WorkAssignmentSelfService/Start	2902	English(USA) en-US	English(USA) en-US Jennifer F	None	None
TestPG	Yes	VoiceXML	http://10.10.41.16/mpp/misc/avptestapp/intro.vxml	2901	English(USA) en-US	English(USA) en-US Jennifer F	None	None

Add **Delete** **Clear MPP Cache** **Global CAVs** **Help**

The following information must be added.

- **Name** – Enter a suitable name for the new application in the example below this is **VoiSentryDemo**.
- **Type** – This is set to **VoiceXML**
- **VoiceXML URL** – This will be the location of the deployed application. As the tomcat server is running on Experience Portal this will be the Experience Portal address followed by **7080** as this is the port used by Experience Portal. The application name follows in this case **VoiSentryDemo** followed by **/Start**.
- **Called Number** – This is the number assigned to the application i.e., the number that is called which routes the caller into the application. The example below shows that **2909** was chosen.

All other values can be left as shown as this was default. Click on **Apply** and **Save** at the bottom of the screen to save the new application.

Use this page to change the configuration of an application.

Name: VoiSentryDemo

Enable: ☒ Yes ☐ No

Type: VoiceXML ▼

Reserved SIP Calls: ☒ None ☐ Minimum ☐ Maximum

Requested:

URI

☒ Single ☐ Fail Over ☐ Load Balance

VoiceXML URL: **Verify**

Mutual Certificate Authentication: ☐ Yes ☒ No

Basic Authentication: ☐ Yes ☒ No

Speech Servers

ASR: ▼

TTS: ▼

Application Launch

☒ Inbound ☐ Inbound Default ☐ Outbound

☒ Number ☐ Number Range ☐ URI

Called Number: **Add**

Remove

Speech Parameters ▶

Reporting Parameters ▶

Advanced Parameters ▶

Save **Apply** **Cancel** **Help**

5.3. Configure Application Attributes

The new application is now visible, and the attributes must be configured. Click on the **Configurable Application Variables** icon highlighted below.

Applications

This page displays the applications that are currently deployed on the Experience Portal system.

[Launch Order](#)

<input type="checkbox"/>	Name	Enable	Type	URI	Launch	ASR	TTS	Requested SIP Calls	Configurable Application Variables
<input type="checkbox"/>	Oceana	Yes	VoiceXML	http://10.10.41.16:7080/WorkAssignmentSelfService-3.5.0.0.6/Start	2900	English(USA) en-US	English(USA) en-US Jennifer F	None	
<input type="checkbox"/>	Oceana2	Yes	VoiceXML	http://10.10.40.135:7080/WorkAssignmentSelfService/Start	2902	English(USA) en-US	English(USA) en-US Jennifer F	None	
<input type="checkbox"/>	TestPG	Yes	VoiceXML	http://10.10.41.16/mpp/misc/avptestapp/intro.vxml	2901	English(USA) en-US	English(USA) en-US Jennifer F	None	
<input type="checkbox"/>	VoiSentryDemo	Yes	VoiceXML	http://10.10.41.16:7080/VoiSentryDemo/Start	2909	No ASR	No TTS	None	

[Add](#)[Delete](#)[Clear MPP Cache](#)[Global CAVs](#)[Help](#)

The following must be changed in order to connect to the VoiSentry server correctly.

- **Access Key** – This access key is obtained from the VoiSentry server as outlined in **Section 6**.
- **Agent Phone** – This is the number that the application transfers the caller to. This can be any station on Communication Manager. This represents the “agent phone” and callers will be transferred to this number upon completion of the voice verification process.
- **API URL** – This is the IP address of the VoiSentry server. A secure HTTPS connection is required followed by **/api**.
- **APPS Port** - **:7080** is entered for the port number.

Click on **Apply** and then **Save** once this is completed. The application should be ready for use now. Dialling the number associated with the application will allow the caller to reach the application.

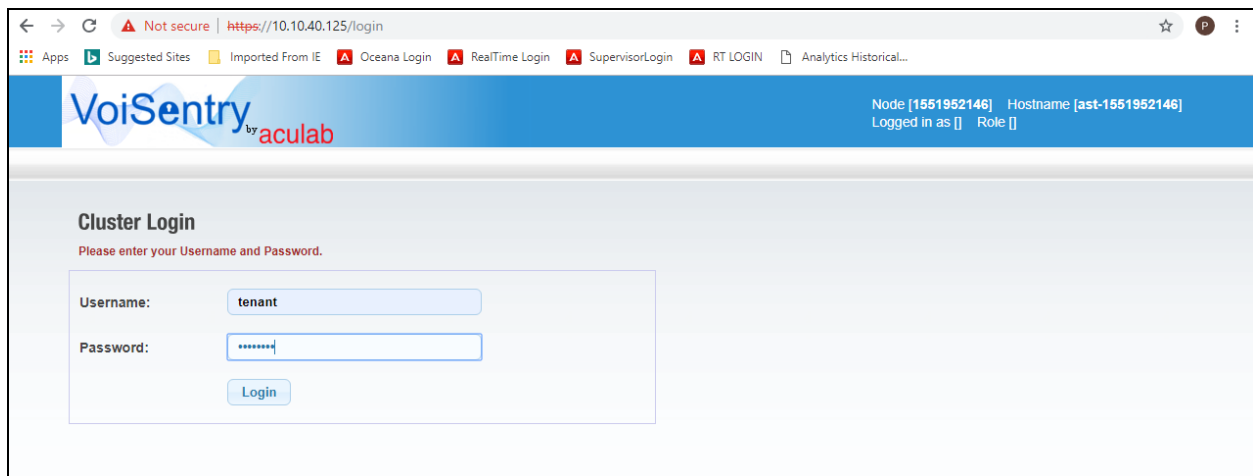
Change VoiSentryDemo Configurable Application Variables	
Use this page to change the values of the configurable application variables, defined in the applications that are deployed on the Experience Portal system.	
Reset All to Default	
Access Key:	<input type="text" value="af484bb6-676b-4b33-a73d-bc2ae51161bd"/>
Agent Phone:	<input type="text" value="2050"/>
API URL:	<input type="text" value="https://10.10.40.125/api/"/>
APPS Port:	<input type="text" value=":7080"/>
Save Apply Cancel Help	

6. Configure Aculab VoiSentry

It is assumed that the VoiSentry node is already installed and configured correctly by an engineer with sufficient training from Aculab.

VoiSentry contains an access key that is required for the attributes configuration in **Section 5.3**. This section illustrates the steps required to obtain this access key.

Open a HTTPS session to the VoiSentry node. Enter the appropriate credentials and click in **Login**.



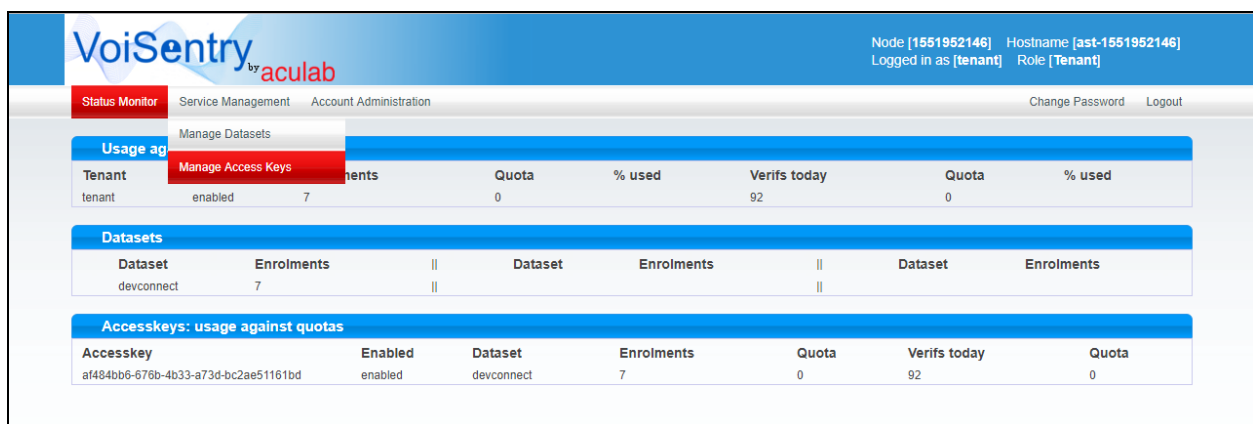
Cluster Login

Please enter your Username and Password.

Username:

Password:

Once logged in navigate to **Service Management** → **Manage Access Keys** as shown below.



Usage against Quotas

Tenant	Enabled	Verifies today	Quota	% used
tenant	enabled	92	0	

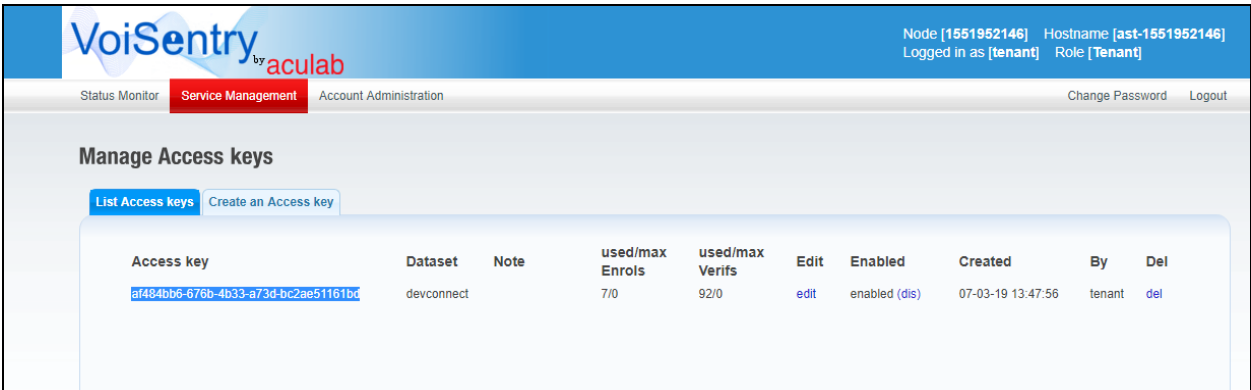
Datasets

Dataset	Enrolments
devconnect	7

Accesskeys: usage against quotas

Accesskey	Enabled	Dataset	Enrolments	Quota	Verifies today	Quota
af484bb6-676b-4b33-a73d-bc2ae51161bd	enabled	devconnect	7	0	92	0

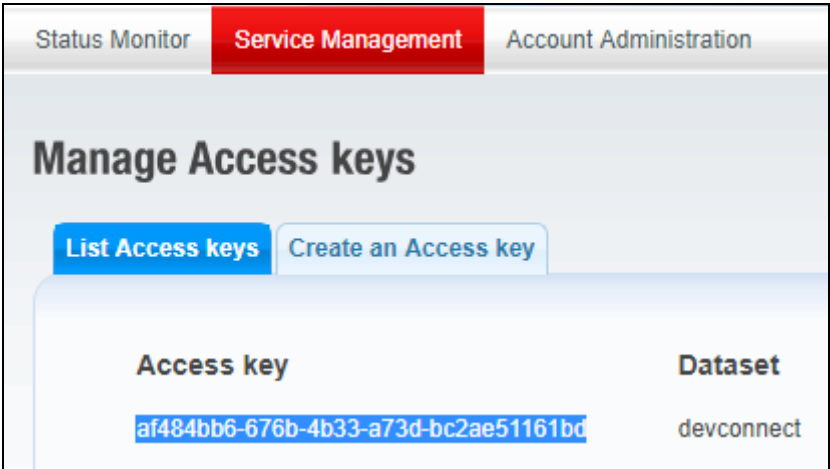
The access key is displayed for the **Dataset** that was created during the initial installation.



The screenshot shows the VoiSentry interface with the 'Service Management' tab selected. The 'Manage Access keys' section contains a table with the following data:

Access key	Dataset	Note	used/max Enrols	used/max Verifs	Edit	Enabled	Created	By	Del
af484bb6-676b-4b33-a73d-bc2ae51161bd	devconnect		7/0	92/0	edit	enabled (dis)	07-03-19 13:47:56	tenant	del

On closer inspection this **Access key** should be copied for use in **Section 5.3**.



This is a close-up view of the table from the previous screenshot, focusing on the 'Access key' and 'Dataset' columns.

Access key	Dataset
af484bb6-676b-4b33-a73d-bc2ae51161bd	devconnect

7. Verification Steps

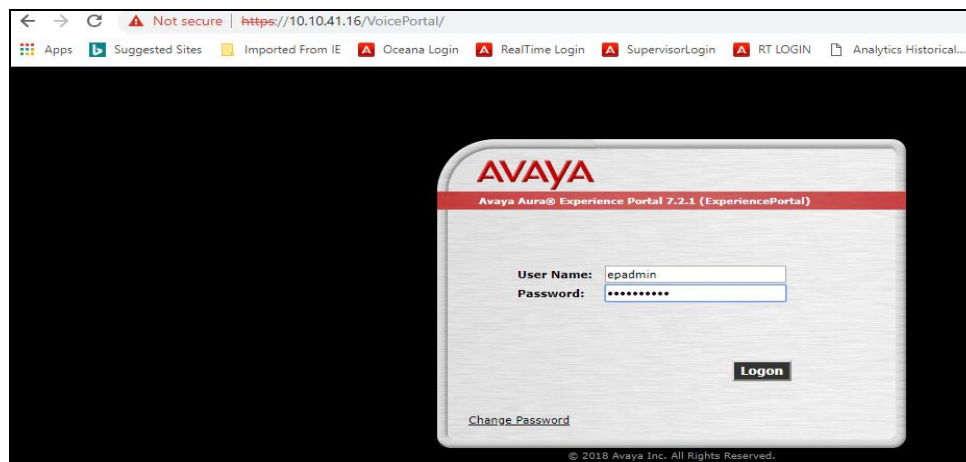
This section provides the steps that can be performed to verify correct configuration of Experience Portal with Aculab VoiSentry.

7.1. Make a call to the VoiSentry Voice Biometric Application

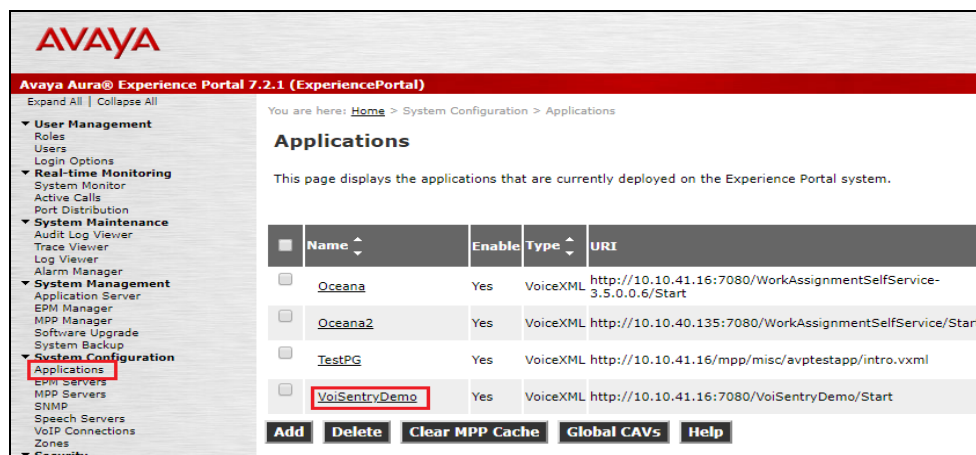
Make a call to the number associated with the VoiSentry Voice Biometrics application. This is the “Called Number” as per **Section 5.2**. The caller should be greeted by the application instructing the caller to participate in voice biometric enrolment and/or verification. Upon a successful verification the caller is then transferred to the “Agent Phone” as outlined in **Section 5.3**.

7.2. Verify VoiSentry Voice Biometric Application on Avaya Aura® Experience Portal

Log into Experience Portal as per **Section 5.1**.



Navigate to **System Configuration** → **Applications** in the left window. The **VoiSentryDemo** application should be visible in the main window. Click on this application.



Click on **Verify** opposite the **VoiceXML URL**.

Change Application

Use this page to change the configuration of an application.

Name: VoISentryDemo

Enable: ☒ Yes ☐ No

Type: VoiceXML ▼

Reserved SIP Calls: ☒ None ☐ Minimum ☐ Maximum

Requested:

URI

☒ Single ☐ Fail Over ☐ Load Balance

VoiceXML URL: **Verify**

Mutual Certificate Authentication: ☐ Yes ☒ No

Basic Authentication: ☐ Yes ☒ No

Speech Servers

ASR: No ASR ▼

TTS: No TTS ▼

Application Launch

☒ Inbound ☐ Inbound Default ☐ Outbound

☒ Number ☐ Number Range ☐ URI

Called Number: **Add**

2909 **Remove**

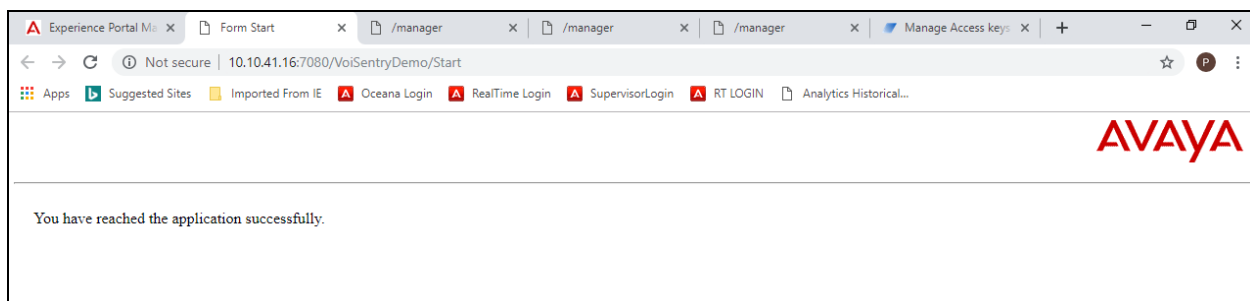
Speech Parameters ▶

Reporting Parameters ▶

Advanced Parameters ▶

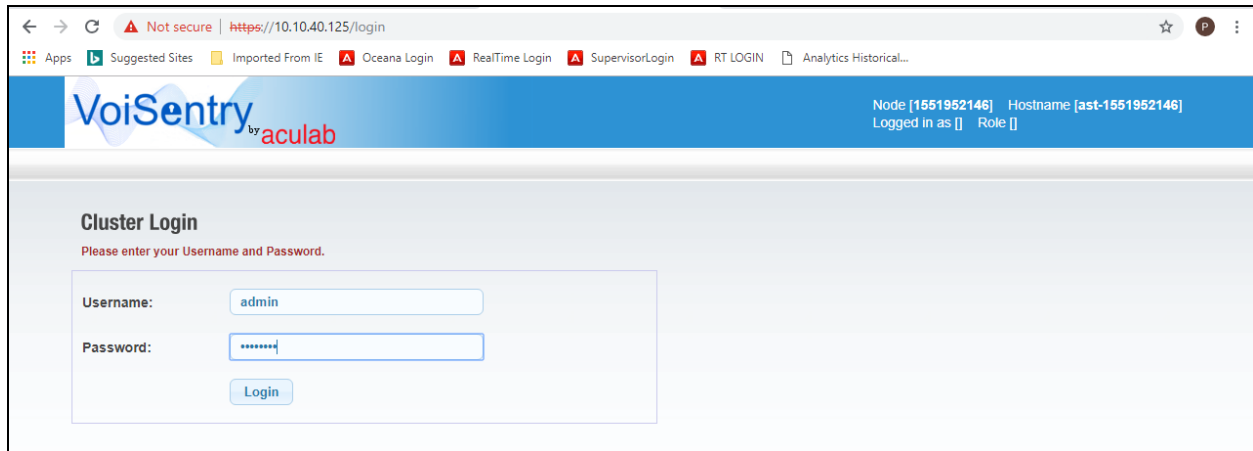
Save **Apply** **Cancel** **Help**

A new web page should be opened showing the page below stating **You have reached the application successfully**. This is a successful verification of the application.

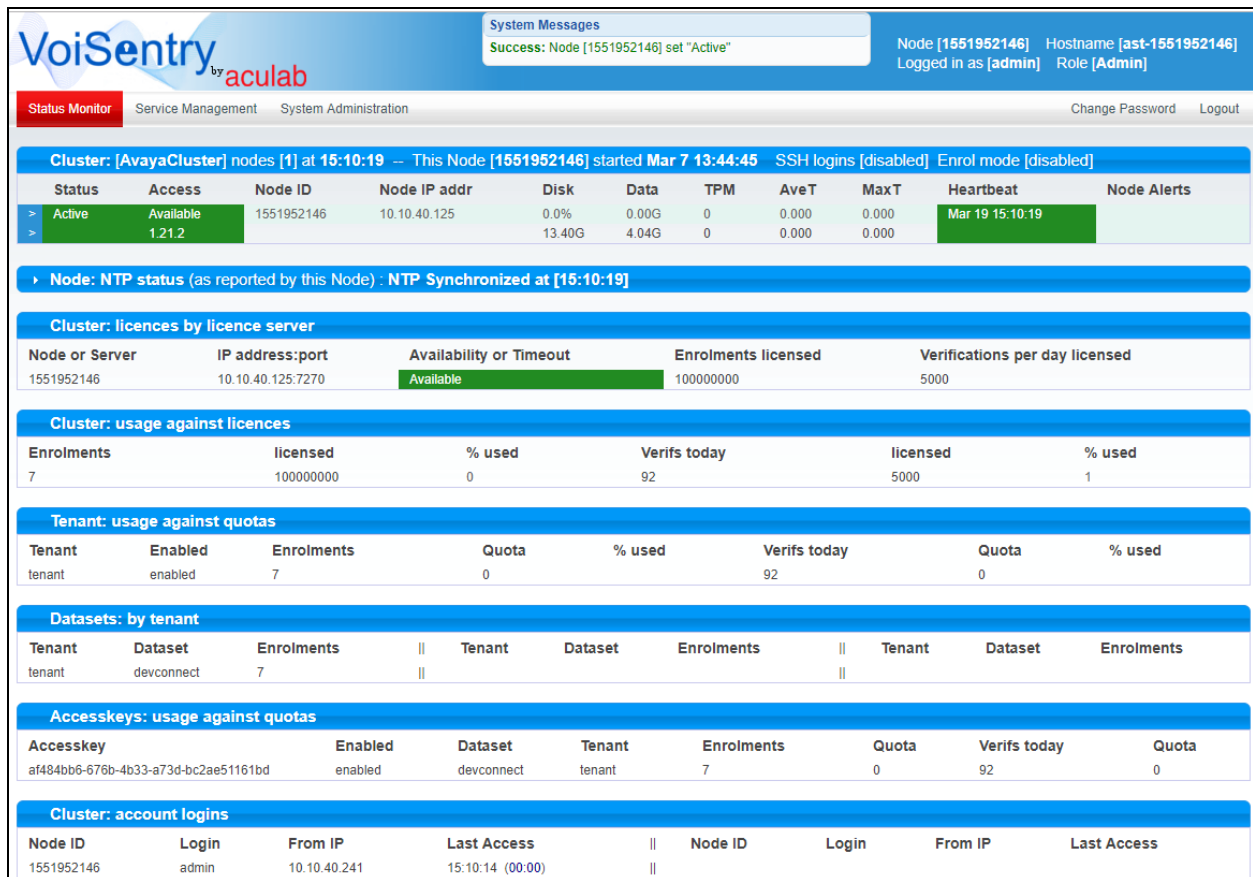


7.3. Verify the status of VoiSentry

Logging into the VoiSentry web page using the admin credentials will display a status page upon login. Navigate to **https://VoiSentryServer/login** and enter the appropriate credentials and click on **Login**.



The **Status Monitor** shows that the cluster is **Active** and **Available**.



Cluster: [AvayaCluster] nodes [1] at 15:10:19 -- This Node [1551952146] started Mar 7 13:44:45 -- SSH logins [disabled] Enrol mode [disabled]

Status	Access	Node ID	Node IP addr	Disk	Data	TPM	AveT	MaxT	Heartbeat	Node Alerts
> Active	Available 1.21.2	1551952146	10.10.40.125	0.0% 13.40G	0.00G 4.04G	0 0	0.000 0.000	0.000 0.000	Mar 19 15:10:19	

Node: NTP status (as reported by this Node) : NTP Synchronized at [15:10:19]

Cluster: licences by licence server

Node or Server	IP address:port	Availability or Timeout	Enrolments licensed	Verifications per day licensed
1551952146	10.10.40.125:7270	Available	100000000	5000

Cluster: usage against licences

Enrolments	licensed	% used	Verifs today	licensed	% used
7	100000000	0	92	5000	1

Tenant: usage against quotas

Tenant	Enabled	Enrolments	Quota	% used	Verifs today	Quota	% used
tenant	enabled	7	0		92	0	

Datasets: by tenant

Tenant	Dataset	Enrolments		Tenant	Dataset	Enrolments		Tenant	Dataset	Enrolments
tenant	devconnect	7								

Accesskeys: usage against quotas

Accesskey	Enabled	Dataset	Tenant	Enrolments	Quota	Verifs today	Quota
af484bb6-676b-4b33-a73d-bc2ae51161bd	enabled	devconnect	tenant	7	0	92	0

Cluster: account logins

Node ID	Login	From IP	Last Access		Node ID	Login	From IP	Last Access
1551952146	admin	10.10.40.241	15:10:14 (00:00)					

8. Conclusion

These Application Notes describe the configuration steps required for VoiSentry to successfully interoperate with Avaya Aura® Experience Portal R7.2.1 and Avaya Aura® Communication Manager R8.0. All feature functionality and serviceability test cases were completed successfully, with any issues and observations noted in **Section 2.2**.

9. Additional References

This section references the Avaya and VoiSentry product documentation that are relevant to these Application Notes.

Product documentation for Avaya products may be found at <https://support.avaya.com>.

- *Avaya Aura® Experience Portal Overview and Specification*
- *Deploying Avaya Aura® Experience Portal in an Avaya Customer Experience Virtualized Environment* Release 7.2 Issue 1 July 2017
- *Administering Avaya Aura® Communication Manager*, Document ID 03-300509
- *Avaya Aura® Communication Manager Feature Description and Implementation*, Document ID 555-245-205

Product documentation for VoiSentry can be obtained from the website www.aculab.com

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