AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for Configuring VSFT Holdings Inc. User Authentication to Interoperate with Avaya Aura® Experience Portal and Avaya Aura® Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps for VSFT Holdings Inc. User Authentication 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 VSFT Holdings Inc. User Authentication with Avaya Aura® Experience Portal R7.2.3 and Avaya Aura® Communication Manager R8.1.

ValidSoft is part of VSFT Holdings Inc. VSFT Holdings Inc. does business as ValidSoft® and will be referred to as ValidSoft throughout this document.

ValidSoft secures transactions using personal authentication and device assurance. ValidSoft enables its customers to enhance their security while improving their user experience, utilizing its multi-factor authentication platform, Voice Biometric engine and Device Trust technology, all of which may be used as 'stand-alone' or integrated into multi-vendor solutions.

Multi-factor authentication is the means by which a user is authenticated by a number of different authentication methods or factors. This can be coupled with contextual data analysis, layered together to deliver a stronger and more user-friendly solution. As security breaches have increased, industry has realized that they require more than one element (typically a password) or 'factor' of security but also need to create a simple and frictionless user experience. ValidSoft's User Authentication platform is designed to utilise a combination of 'Something You Have' (device), and 'Something You Are' (biometric), which can be combined with other factors and contextual data, according to requirements and the channel of operation.

2. General Test Approach and Test Results

The tested solution contains a web application, from ValidSoft, hosted on Apache Tomcat that sends calling party's voice audio to ValidSoft's cloud-based User Authentication gateway for voice biometric authentication. The Avaya DevConnect platform is configured to call upon this web application during a phone call, the web application gathers voice audio and sends it to the biometric gateway to authenticate an enrolled user. The Tomcat host was running on Windows 10. The web application will be referred to as ValidSoft Avaya Integration throughout this document.

The general test approach was to configure the ValidSoft Avaya Integration web 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 User Authentication to process voice recordings made during VoiceXML application 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 serviceability testing introduced simulated LAN failures observing the caller experience during and after such a failure. Please see **Section 3**, which includes a diagram and a description of the call flow including all components of the solution, this may help give a clearer picture of how this solution fits together and how a typical call would flow.

Note: The solution from ValidSoft consists of the ValidSoft Avaya Integration installed on Apache Tomcat Web Server and ValidSoft User Authentication located at ValidSoft. ValidSoft Avaya Integration is a web Application that sits between Experience Portal and User Authentication.

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 ValidSoft Avaya Integration application did not cover any specific encryption features. The connection from ValidSoft Avaya Integration out to the User Authentication cloud gateway is fully encrypted and secured with SSL.

2.1. Interoperability Compliance Testing

The interoperability compliance test included both feature functionality and serviceability testing. The testing included:

- **Connectivity** – Test that the ValidSoft Avaya Integration application was installed correctly on Apache Tomcat Web Server.
- **Enrolling a new user** – Create a new user 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 –** Delete an existing voiceprint that was previously created.
- **Serviceability testing** – Test the experience of the caller and the behaviour of User Authentication Voice Biometrics when the User Authentication node is not available due to a simulated LAN failure.

2.2. Test Results

All functionality and serviceability test cases were completed successfully. The following observations were noted.

- The accuracy of the voice biometrics engine was not the focus of the compliance testing.
- The Apache Tomcat Web Server is considered a third-party product that hosts web applications such as ValidSoft Avaya Integration. Tomcat can ru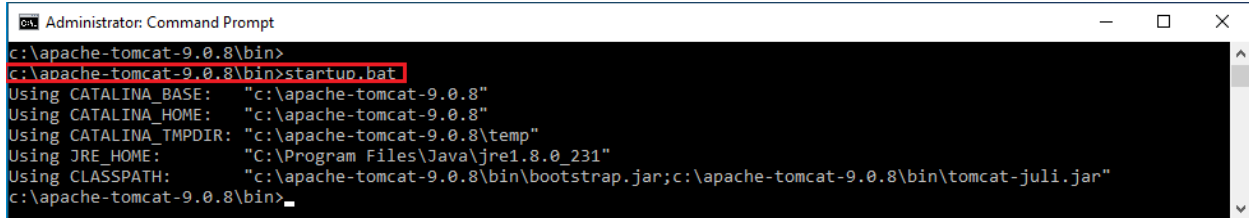n on the same server as Experience Portal but for this solution a Windows 10 PC was preferred to run Tomcat to avoid any issues with Secure Sockets Layer (SSL) and certificates.

2.3. Support

Technical support can be obtained for ValidSoft as follows:

- Website: www.validsoft.com/contact
- Phone: +44 20 7164 6460 (UK)

3. Reference Configuration

Figure 1 shows the network topology during interoperability testing. Communication Manager was used as the hosting PBX. The ValidSoft Avaya Integration web application was installed on an Apache Tomcat Web Server, running on a Windows 10 PC. Session Manager is used to route calls to Experience Portal which then calls upon the User Authentication to test the users/callers voice and authenticate it with what it has previously enrolled.
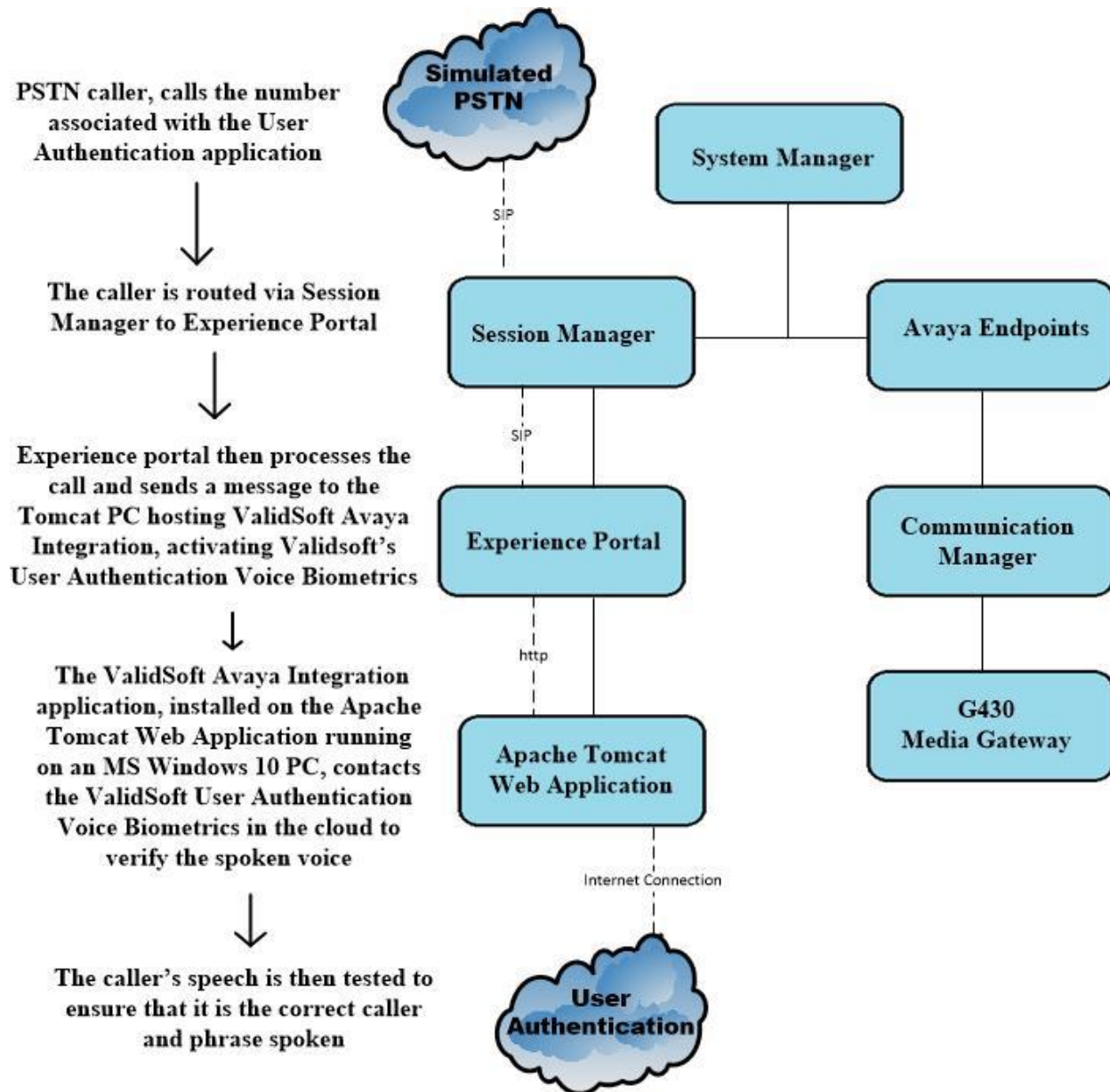
Figure 1: ValidSoft User Authentication integrating with Avaya Aura® Experience Portal using Avaya Aura® Communication Manager

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	System Manager 8.1.1.0 Build No. – 8.1.0.0.733078 Software Update Revision No: 8.1.1.0.0310504 Feature Pack 1
**Avaya Aura® Session Manager	Session Manager R8.1 Build No. – 8.1.0.0.810007
**Avaya Aura® Communication Manager	R8.1.0.2.0 – SP2 R018x.01.0.890.0 Update ID 01.0.890.0-25578

**Avaya Aura® Experience Portal
   - EPM
   - MPP
	7.2.3
	7.2.3.0.0482
	7.2.3.0.0482

**Avaya Aura® Media Server	8.0.0.169
Avaya G430 Media Gateway	38.21.1/1
Avaya 9608 H323 Deskphone	6.6.115
Avaya J179 H323 Deskphone	6.7.002U
Avaya 9641 SIP Deskphone	7.1.2.0.14
Avaya J129 SIP Deskphone	3.0.0.0.0.20
Avaya 9408 Digital Deskphone	2.0
ValidSoft User Authentication Gateway	6.5.0
ValidSoft Avaya Integration running on Apache Tomcat	1.0.3
Apache Tomcat Web Server Java (64bit) (Running on Windows 10)	9.0.8 1.8.0_231-b11 Windows 10 Enterprise N

** These machines are all Virtual Servers running on VMWare 6.7.

5. Configure ValidSoft Avaya Integration on Apache Tomcat Web Application

The Apache Tomcat Web application is considered a third-party product that hosts web applications such as ValidSoft Avaya Integration. Tomcat can run on the same server as Experience Portal but for this solution a Windows 10 PC was preferred to run Tomcat to avoid any issues with Secure Sockets Layer (SSL) and certificates.

The installation and configuration of Apache Tomcat is outside the scope of these Application Notes. In a production environment the Windows Service Installer is recommended, but it is assumed clients will have their own Tomcat installation standards. For more information on this see **Section 10**.

From the Windows machine running Tomcat, locate the Apache Tomcat folder. Within this folder navigate to **webapps** and place the **.war** file into the **webapps** folder as it is shown below.
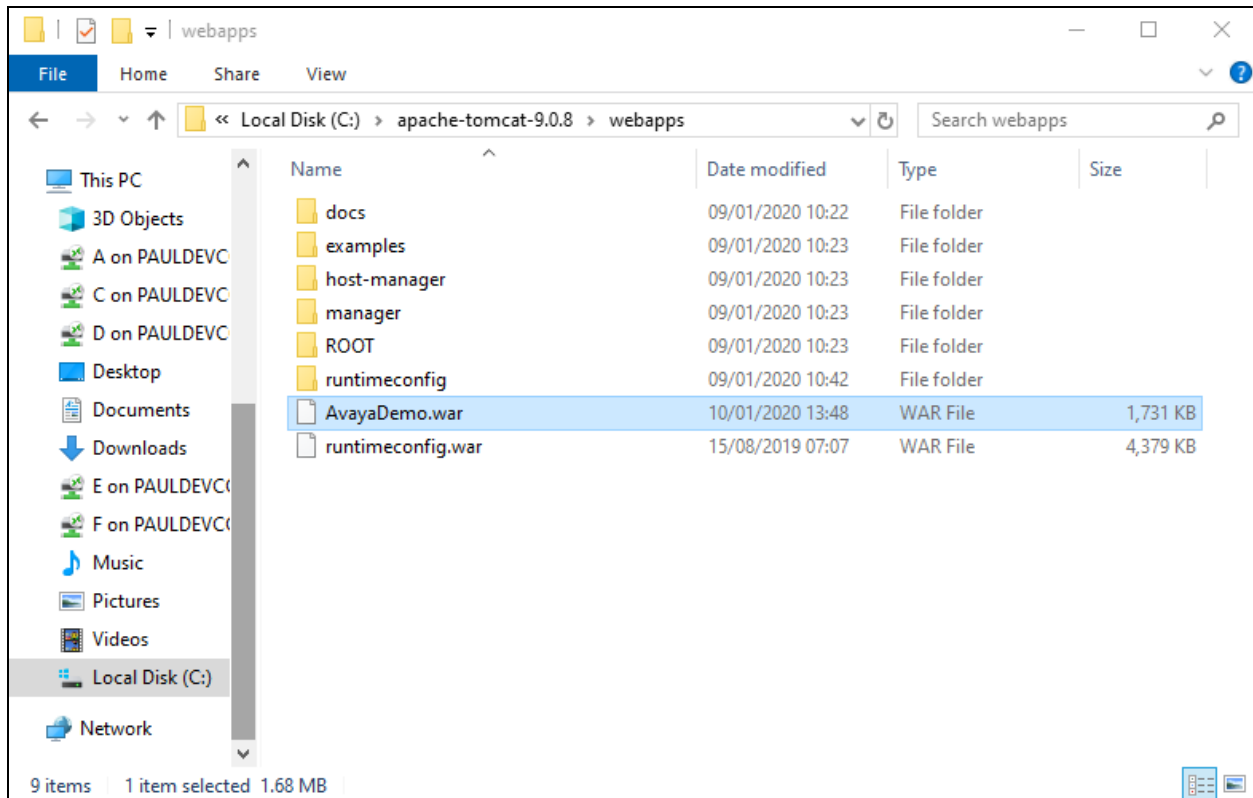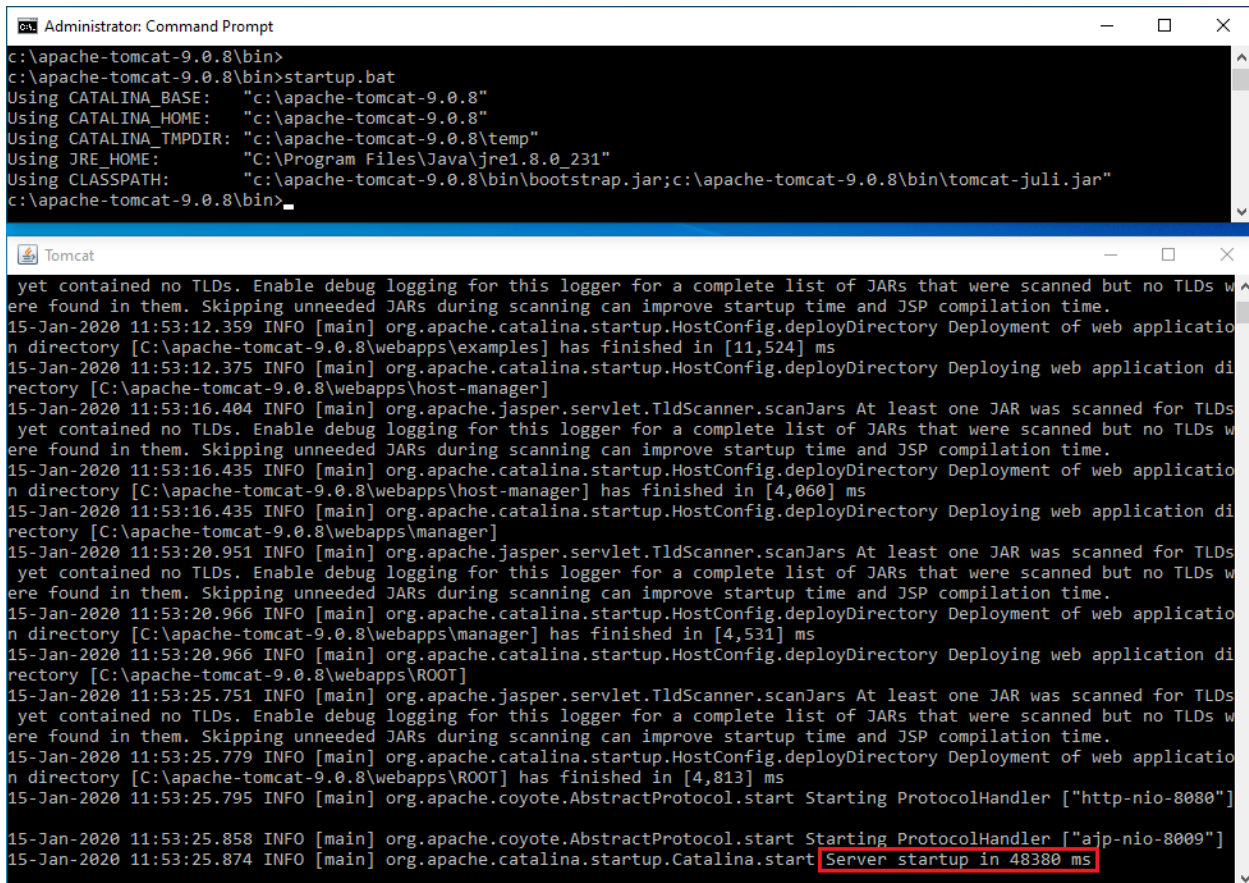
From the command line navigate to **C:\<Tomcat folder>\bin** and type **startup.bat**.

Once Tomcat is started a **Tomcat** window should appear like the one shown below and the .war file is expanded and the applications running in the **webapps** folder are started. Once the message **Server startup** is shown the application should be ready to receive requests from Experience Portal.

The **webapps** folder should now contain the expanded **AvayaDemo** folder expanded from the **AvayaDemo.war** file that was dropped in there.
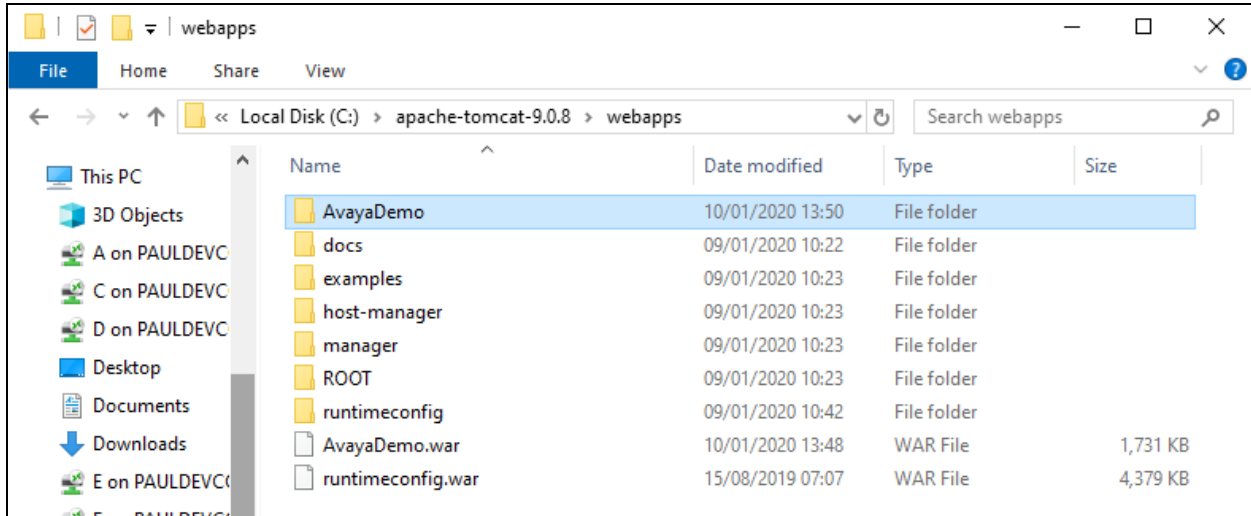
6. Configure Avaya Aura® Experience Portal

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 10**.

Open a web browser and navigate to the Experience Portal address as shown below **https://<Experience Portal IP>/VoicePortal**. Enter the appropriate credentials and click on **Logon**.
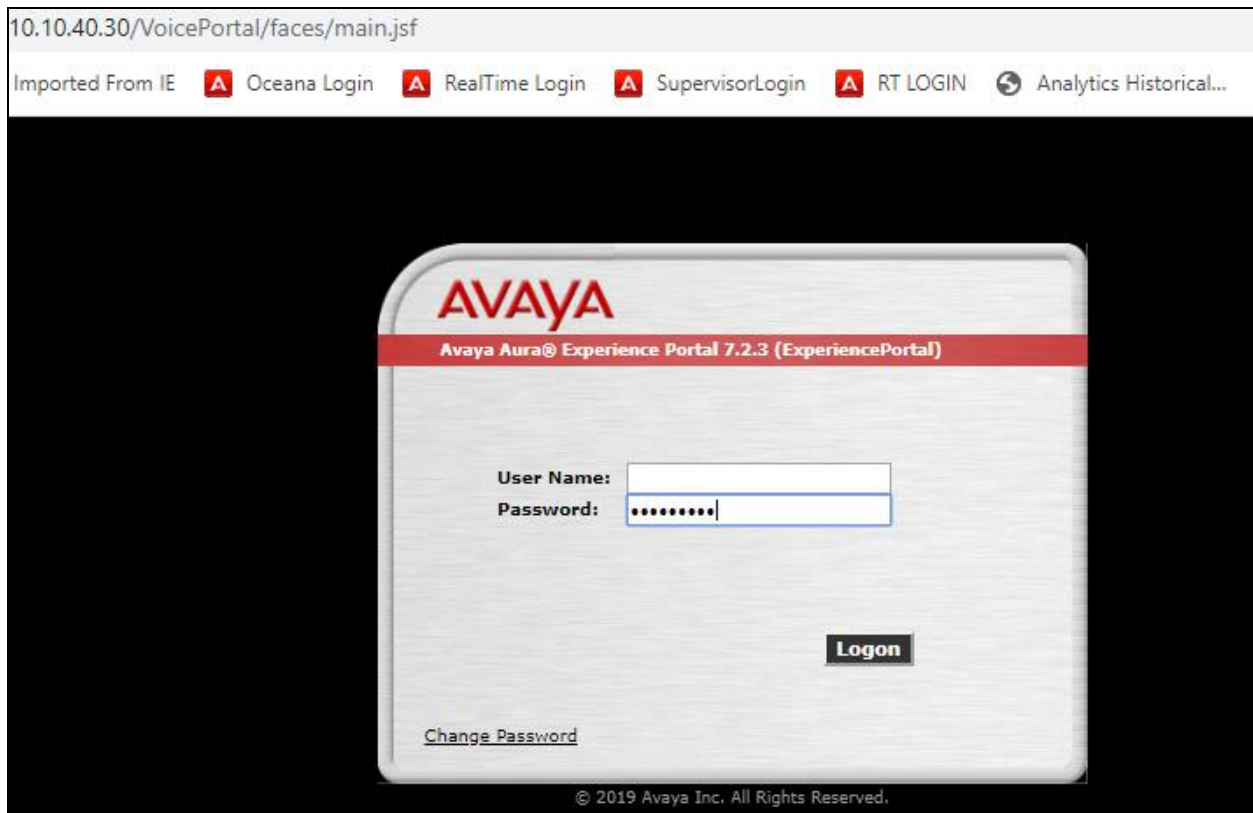
An application is added on Experience Portal as a Voice XML application. This will then call on the ValidSoft Avaya Integration application running on Tomcat. From Experience Portal navigate to **System Configuration → Applications** in the left window. In the main window click on **Add**.
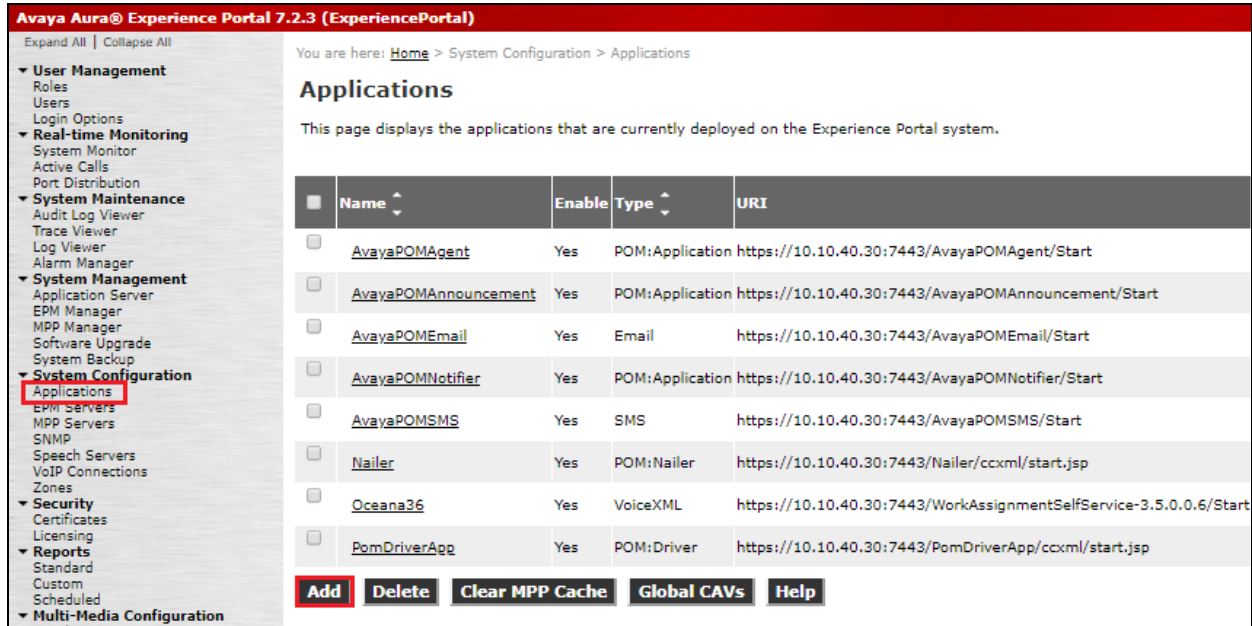
The following information must be added.

- **Name** – Enter a suitable name for the new application in the example on the following page is **ValidSoft Demo**.
- **Type** – This is set to **VoiceXML**.
- **VoiceXML URL** – This will be the location of the deployed application. As the tomcat server is running on a Window machine this will be the IP address of the Windows 10 PC address followed by **8080** as this is the port used for the http connection. The application name follows in this case **AvayaDemo** followed by **/Start**.
- **ASR** – There is no ASR used for this application.
- **TTS** – The speech server is added for the text to speech (TTS), in the example on the following page **Nuance** is the configured Speech Server. This Speech Server is already configured as part of the Experience Portal configuration. This Speech Server will have **Voices** already configured and the example on the following page shows two voices available with **English (UK) en-GB Emily F** chosen as the Voice for this application.
- **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 **2791** was chosen.

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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.

7. Configure ValidSoft User Authentication

The solution from ValidSoft consists of the ValidSoft Avaya Integration installed on Apache Tomcat Web Server and ValidSoft User Authentication located at ValidSoft. ValidSoft Avaya Integration is a piece of middleware between Experience Portal and User Authentication. The ValidSoft Avaya Integration consists of a .war file that is created by ValidSoft. The installation of this .war file is outlined in **Section 5** and any further information on this can be obtained directly from ValidSoft using the contact information provided in **Section 2.3**.

8. Verification Steps

This section provides the steps that can be performed to verify correct configuration of Experience Portal with ValidSoft User Authentication.

8.1. Make a call to the User Authentication Voice Biometric Application

Make a call to the number associated with the User Authentication Voice Biometrics application. This is the "Called Number" as per **Section 6**. The caller should be greeted by the application instructing the caller to participate in voice biometric enrolment and/or verification.

8.2. Verify User Authentication Application on Experience Portal

Log into Experience Portal as per **Section 6**.
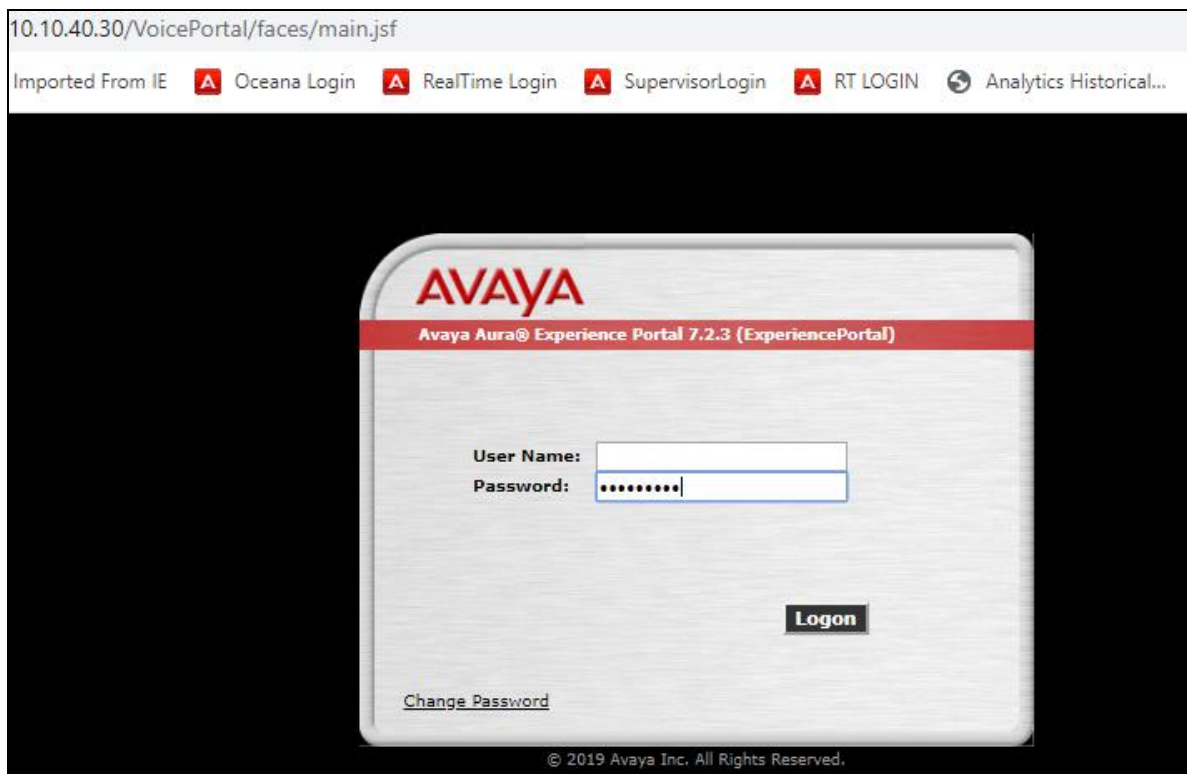
Navigate to **System Configuration → Applications** in the left window (not shown). The **ValidSoft Demo** application should be visible in the main window. Click on this application.

Applications

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

Name	Enable	Type	URI	Launch
AvayaPOMAgent	Yes	POM:Application	https://10.10.40.30:7443/AvayaPOMAgent/Start	Outbound
AvayaPOMAnnouncement	Yes	POM:Application	https://10.10.40.30:7443/AvayaPOMAnnouncement/Start	Outbound
AvayaPOMEmail	Yes	Email	https://10.10.40.30:7443/AvayaPOMEmail/Start	Inbound Default
AvayaPOMNotifier	Yes	POM:Application	https://10.10.40.30:7443/AvayaPOMNotifier/Start	Outbound
AvayaPOMSMS	Yes	SMS	https://10.10.40.30:7443/AvayaPOMSMS/Start	Inbound Default
Nailer	Yes	POM:Nailer	https://10.10.40.30:7443/Nailer/ccxml/start.jsp	Outbound
Oceana36	Yes	VoiceXML	https://10.10.40.30:7443/WorkAssignmentSelfService-3.5.0.0.6/Start	2799
PomDriverApp	Yes	POM:Driver	https://10.10.40.30:7443/PomDriverApp/ccxml/start.jsp	Outbound
Test1	Yes	VoiceXML	http://10.10.40.31/mpp/misc/avptestapp/intro.vxml	2790
ValidSoft Demo	Yes	VoiceXML	http://10.10.40.238:8080/AvayaDemo/Start	2791

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

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

Use this page to change the configuration of an application.

Name: ValidSoft Demo
Enable: ◉ Yes ○ No
Type: [VoiceXML ▼]
Reserved SIP Calls: ◉ None ○ Minimum ○ Maximum
Requested: [   ]
URI
                        ◉ Single ○ Fail Over ○ Load Balance
VoiceXML URL: [http://10.10.40.238:8080/AvayaDemo/Start]   **Verify**

Mutual Certificate Authentication: ○ Yes ◉ No
Basic Authentication: ○ Yes ◉ No

ASR Speech Servers ▼

Engine Types		Selected Engine Types	
Nuance	▲ ⊙ ⊙	<None>	▲ ▼

ASR:

TTS Speech Servers ▼

Voices		Selected Voices	
English(USA) en-US Jennifer F	▲ ⊙ ⊙	English(UK) en-GB Emily F	▲ ▼

TTS: [Nuance ▼]

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.
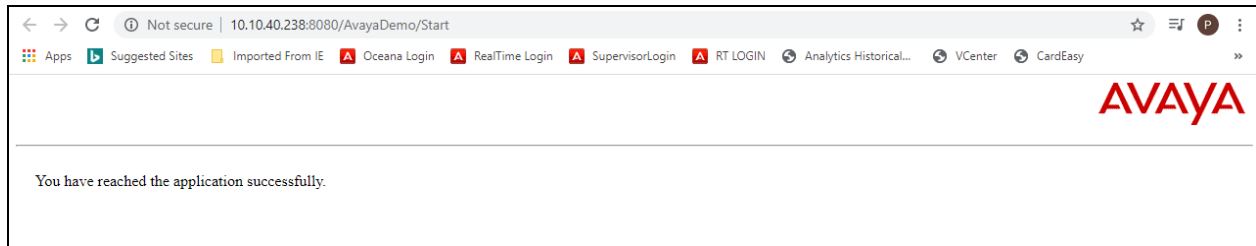
9. Conclusion

These Application Notes describe the configuration steps required for VSFT Holdings Inc. User Authentication to successfully interoperate with Avaya Aura® Experience Portal R7.2.3 and Avaya Aura® Communication Manager R8.1. All feature functionality and serviceability test cases were completed successfully, with observations noted in **Section 2.2**.

10. Additional References

This section references the Avaya and User Authentication 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* Release 7.2
- *Deploying Avaya Aura® Experience Portal in an Avaya Customer Experience Virtualized Environment* Release 7.2
- *Administering Avaya Aura® Experience Portal* Release 7.2
- *Administering Avaya Aura® Communication Manager,* Release 8.1
- *Avaya Aura® Communication Manager Feature Description and Implementation,* Release 8.1

Product documentation for User Authentication can be obtained from the website www.ValidSoft.com

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