Avaya Solution & Interoperability Test Lab

Application Notes for Nuance Avaya Line Mapping Service 9.3 with Avaya Aura® Communication Manager 6.3 and Avaya Aura® Application Enablement Services 6.3 – Issue 1.0

Abstract

These Application Notes describe the procedures for configuring Nuance Avaya Line Mapping (ALM) service with Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Service.

ALM service used Application Enablement Service System Management Service (SMS) to access Communication Manager configuration data to retrieve the list of registered stations and writes collected data to the Line Mapping table on server and periodically checks the Communication Manager and updates the database.

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 a compliance-tested configuration comprised of an Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services and ALM Service.

ALM Service is a component of Nuance Voice Biometrics Server installed on Window 2008 Server that utilises Avaya Aura® AE Services System Management Service to access Communication Manager Configuration data to:

- Retrieve the list of **registered stations** with dynamic IP addresses (DHCP), using the service when the IP address of the RTP stream cannot be retrieved from the CTI in real time (e.g. station number, IP address)
- Update collected data to the Line Mapping table of the Voice Biometrics system, periodically checking the Communication Manager and updating database.

ALM Service utilises the SMS web service to display changes that occur on Avaya Aura® Communication Manager.

System Management Service (SMS) is a web service that exposes selected management features of Communication Manager. SMS enables Simple Access protocol (SOAP) clients to display, list, add, change and remove specific managed objects on Communication Manager. SMS allows programmatic access, via a standard protocol , to functionality that is otherwise only accessible via a proprietary low-level protocol (OSSI) or terminal emulation via system administration (SAT) forms.

2. General Test Approach and Test Results

All feature test cases were performed manually. All fields and values in Communication Manager are copied onto the Nuance Line Mapping database. ALM Service constantly checks the Communication Manager to see if there are updated stations to be modified.

For the manual part of testing, user manually change the IP address of station, add and remove registered station on Communication Manager. Verify ALM Service able to update Line Mapping table with corrected data retrieved from Communication Manager.

The serviceability test cases were performed manually by restart ALM, IIS and Voice Biometrics Service and disconnect/reconnect Ethernet connection to Nuance Server.

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

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on Nuance Server:

- Use of *SubmitRequest (submitRequest)* AES SMS command to access and retrieved list of registered station (model <*RegisteredIPStations*>) on Communication Manager.
- Retrieved data is copied to Line Mapping database.
- Use of Release Request (*release)* to release resource after successfully retrieved database from Communication Manager.
- Corrected IP address is updated to existing station in Line Mapping table if there is any change in IP address of that station on Communication Manager.
- New registered station on Communication Manager is added to Line Mapping database.
- Deleted/Unregistered station is removed from Line Mapping database.

ALM service will retrieve the list of registered station information on Communication Manager using SMS then published in Line mapping table.

The serviceability testing focused on verifying the ability of ALM service to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet connection to Nuance Server and restart ALM, IIS and Voice Biometrics Service.

2.2. Test Results

All test cases was executed and verified. No errors were detected.

2.3. Support

Nuance customers adopting the ALM Service, can open incidents through the following website: https://network.nuance.com/

3. Reference Configuration

Figure 1 shows the network topology adopted during compliance testing. The Nuance server was placed on the Avaya Telephony LAN. The SMS SDK on the AES provides the ALM service an interface to retrieve station information Communication Manager.

A user looking at the Line Mapping table in the Voice Biometrics database view the retrieved data from the Avaya Aura® AE Services System Management Service.

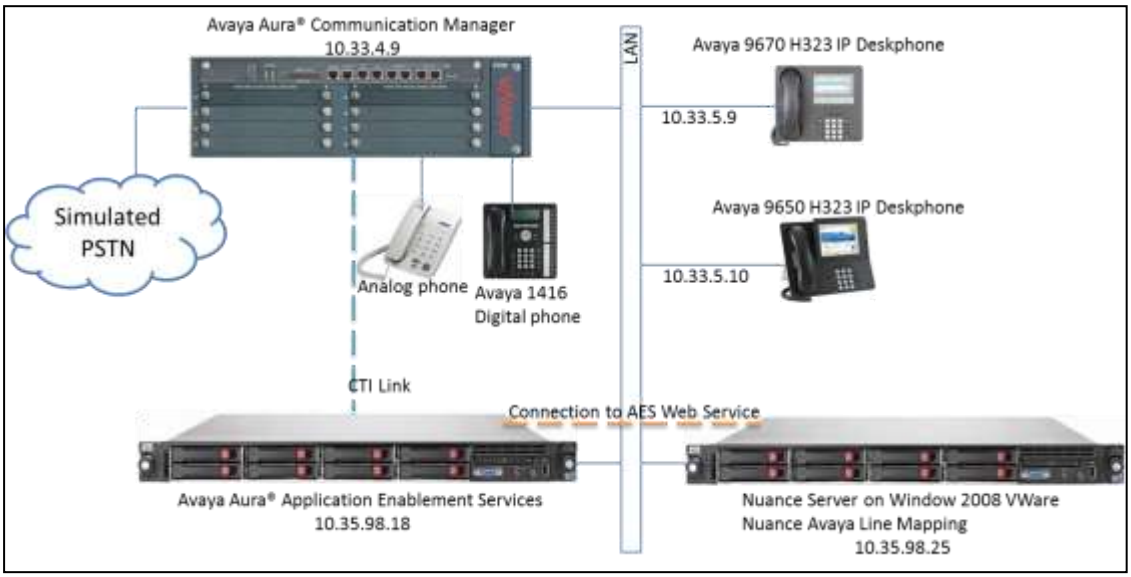


Figure 1: Nuance Voice Biometrics System with ALM Service - Test Sample Configuration

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 S8300 Server (w/ G450)	6.3.10
Avaya G450 Media Gateway : MM710BP (DS1) MM712AP (DCP)	 HW11, FW044 HW07, FW009
Avaya Aura® Application Enablement Services (AES) Server	6.3.3.0.10
Avaya 9600 Series IP Phones: 9670 (H.323) 9650 (H323)	 3.230A 3.230A
Nuance Avaya Line Mapping MySQL Window 2008 R2 OS	9.3.1 Workbench 6.3

5. Configure Avaya Aura® Communication Manager

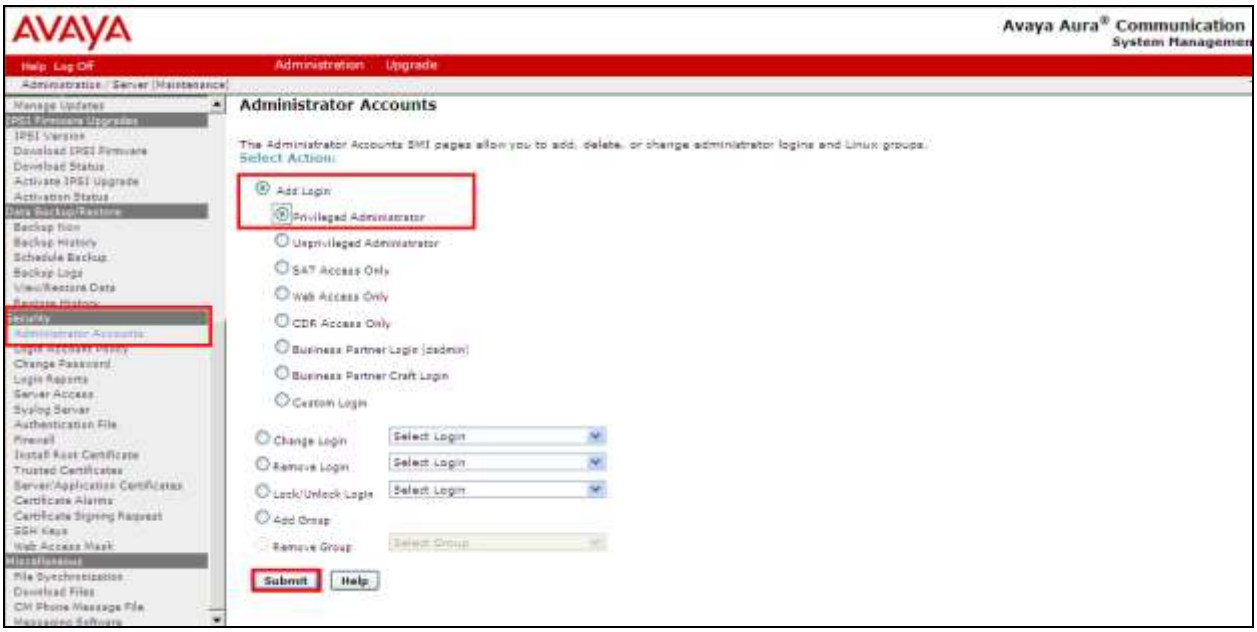
The detailed administration of basic connectivity between Avaya Aura® Communication Manager and Avaya Aura® Application Enablement Services are not the focus of these Application Notes and will not be fully described.

A new user for ALM service needs to be created on Communication Manager. Open a browser session to Communication Manager and log in as shown below. Enter the proper credentials and click on Logon.

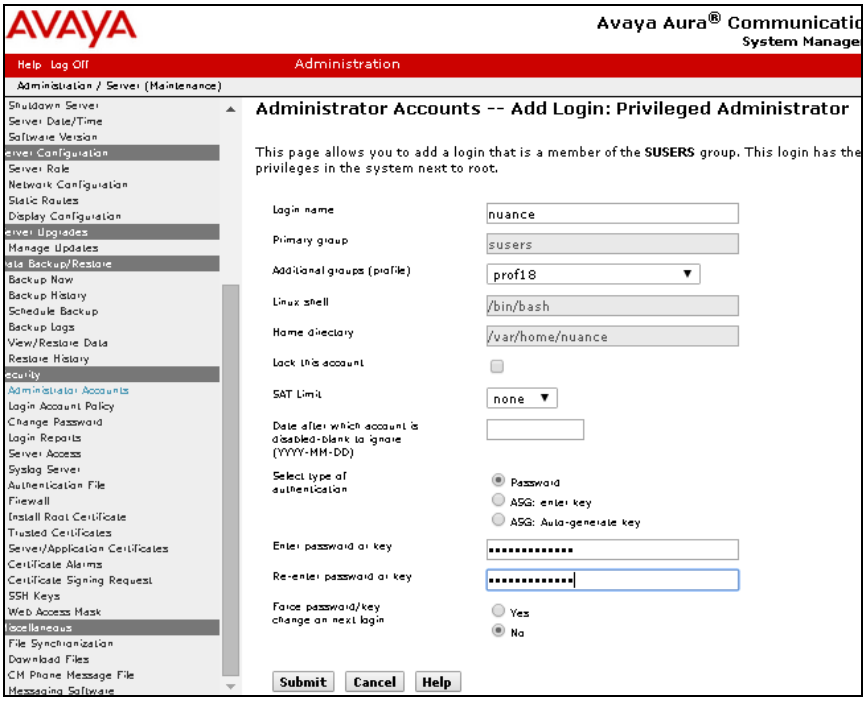
Once logged in click on **Administration** at the top of the page and select **Server (Maintenance)** from the drop-down menu.

In the left window select **Security → Administrator Accounts**. In the main window Select **Add Login**, for the compliance testing **Privileged Administrator** was chosen, but any account with

privileges to use SAT is all that is required in order for a Spotlight user to read and write to the fields in Communication Manager. Select **Submit** when done.



Enter the **Login name** and a suitable **Password.** Click on **Submit** when done.



6. Configure Avaya Aura® Application Enablement Services

Although ALM Service connection to the Avaya solution uses the SMS SDK on Avaya Aura® Application Enablement Services (AES), there is no configuration required on the AES server. The username and password utilised by ALM service is that which was created above in **Section 5**. There are no other configurations required on the Avaya solution.

7. Configure Nuance server

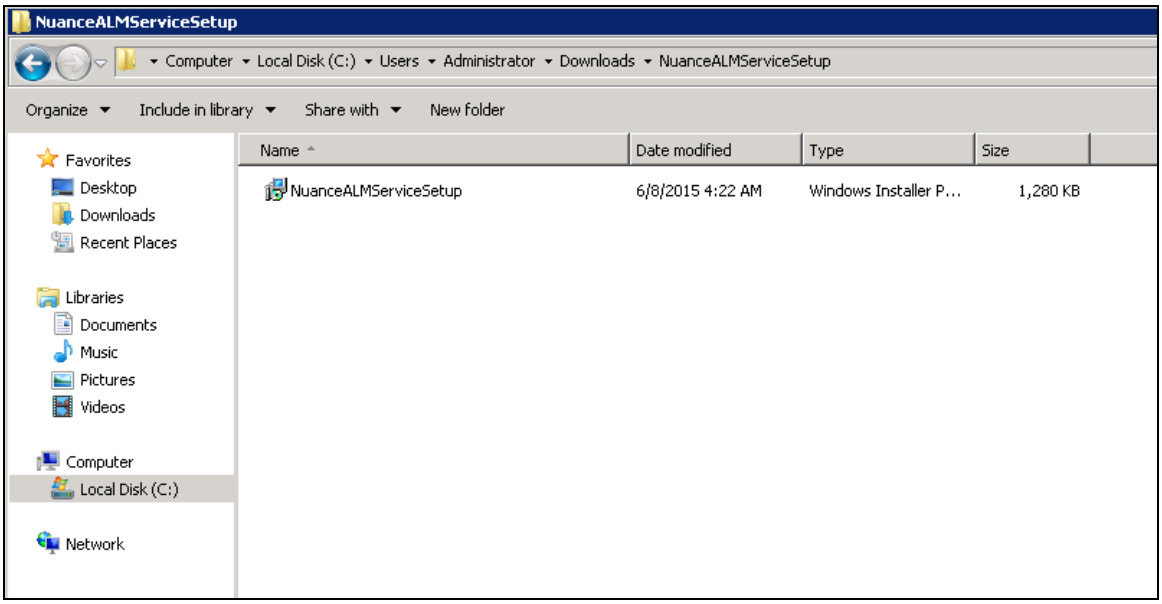
The initial configuration of the Nuance Voice Biometrics server is typically performed by Nuance technicians or authorized installers. The procedural steps to install the Voice Biometrics products are available in the Nuance product manuals. It is assumed that Nuance Voice Biometrics Server and Database, such as MySQL, are already in place and operational.

This document includes the following procedures:

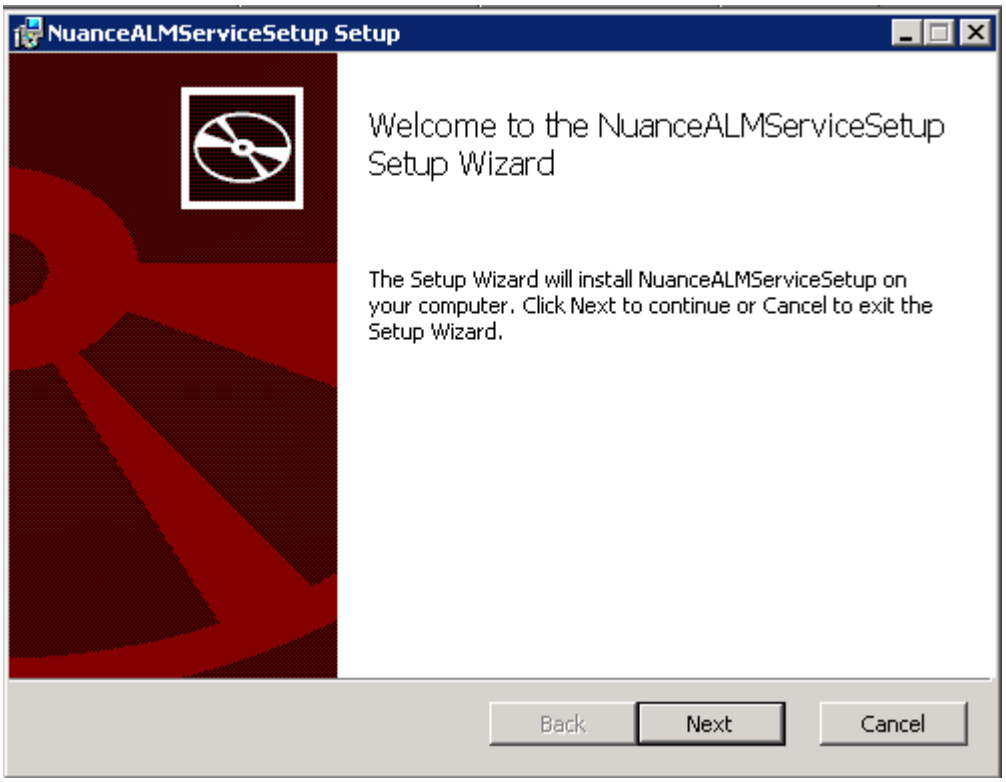
- Install ALM Service
- Verify ALM Service
- Configure ALM Service

7.1. Install ALM Service

Download and double click on executed file NuanceALMServiceSetup.exe to install the service.

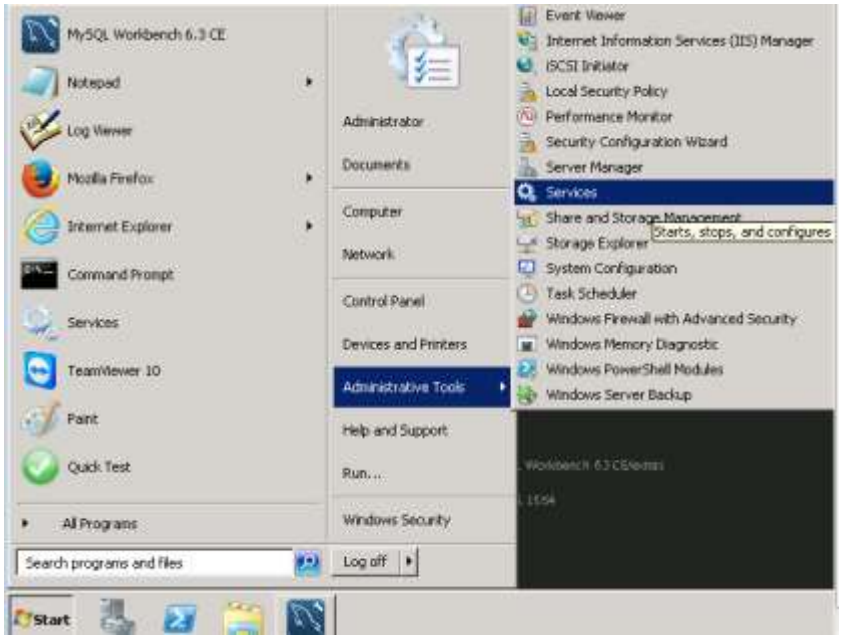


Follow the instructions on the screen to install and complete the process of installing ALM Service.

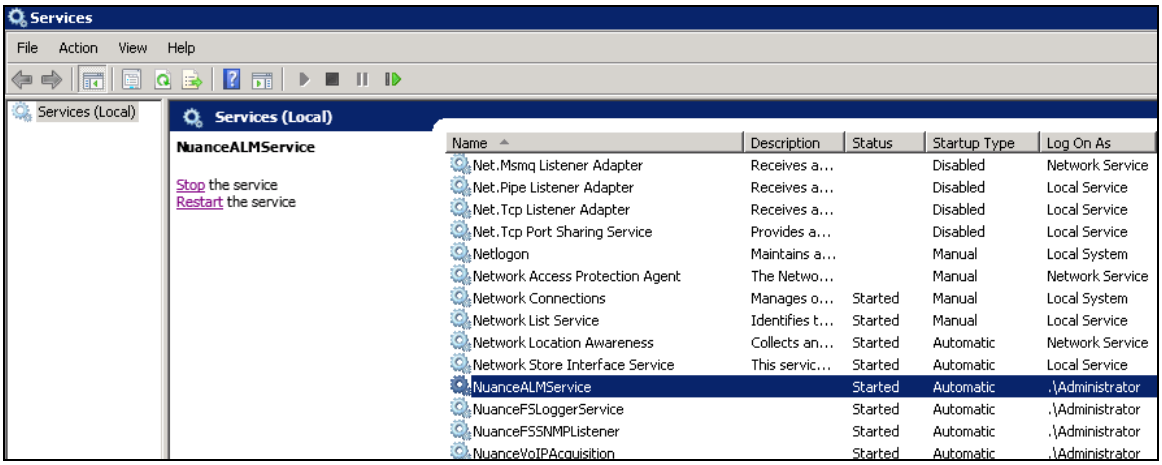


7.2. Verify ALM Service

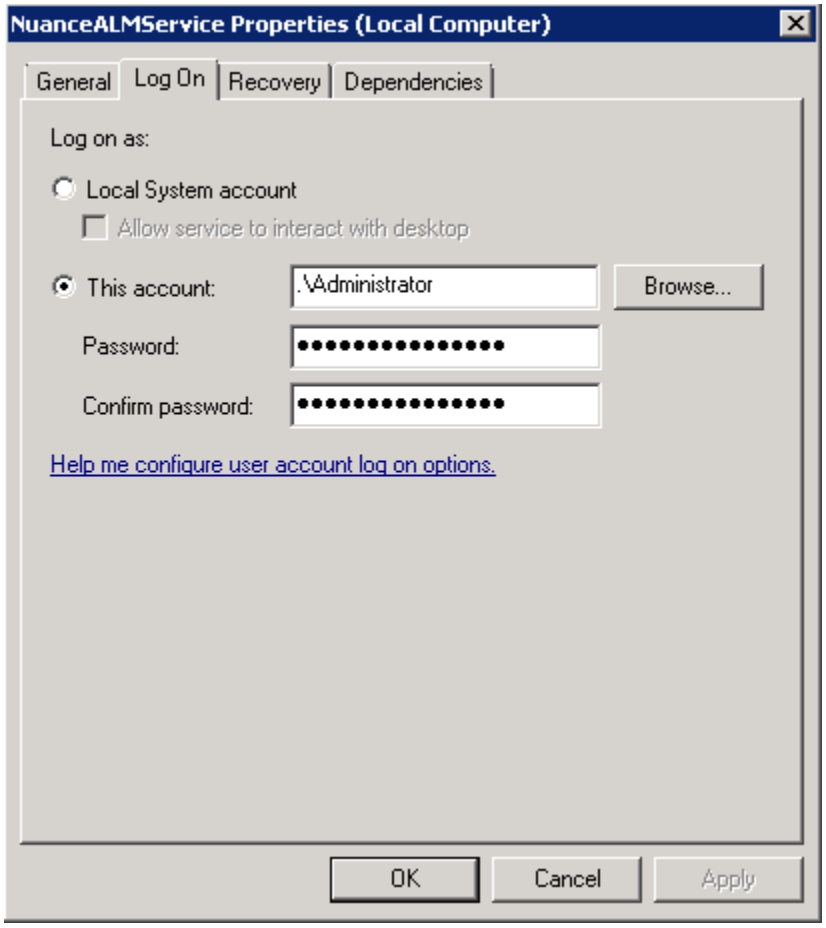
Click **Start → Administrator Tools → Services** to verify ALM Service is properly installed.



In the **Service**, go to **NuanceALMService**, and verify that it is installed and started.



Right click on **NuanceALMService**, select **Properties → Log On tab** to setup the user account for this service. In this example, **NuanceALMService** is running with the Administrator user, as shown below. Please use members of the Administrators group.



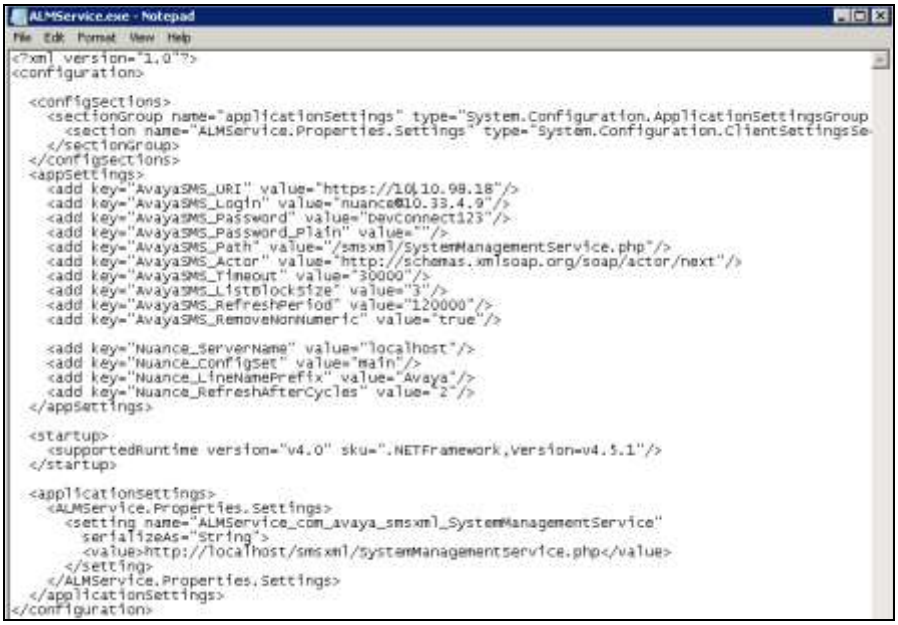
7.3. Configure Nuance Avaya Line Mapping

This section will describe steps to configure ALM Service to connect to the Avaya solution uses the SMS SDK on Avaya Aura® Application Enablement Services (AES).

A config. file is saved for each interface instance and is used by the application at startup to initialize services. The following information is necessary for NuanceALMService.exe file:

- **AvayaSMS_URI:** enter AES address (e.g. https://10.35.98.18)
- **AvayaSMS_Login:** enter user name created in **Section 5** and Communication Manager address (e.g. nuance@10.33.4.9)
- **AvayaSMS_Password:** enter encrypted** text password of user created in **Section 5.**
- **AvayaSMS_Password_plain (optional):** enter plain text password of user create in **Section 5.**
- **AvayaSMS_Path, AvayaSMS_Actor:** enter default data as shown below in the screenshot.
- **AvayaSMS_Timeout:** enter the connection timeout to Avaya platform (e.g. **30000** seconds)
- **AvayaSMS_ListBlockSize:** enter the maximum number of extensions to be retrieved for each request (e.g. **3** stations)
- **AvayaSMS_RefreshPeriod:** enter the period of time (in milliseconds) between two line mapping refreshes (e.g. **120000** seconds)

*** Nuance Encrypted password can be generated using a command line toolkit (MCLI), part of the Voice Biometrics product.*



8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura® Communication Manager, Avaya Aura® Application Enablement Services, and ALM Service.

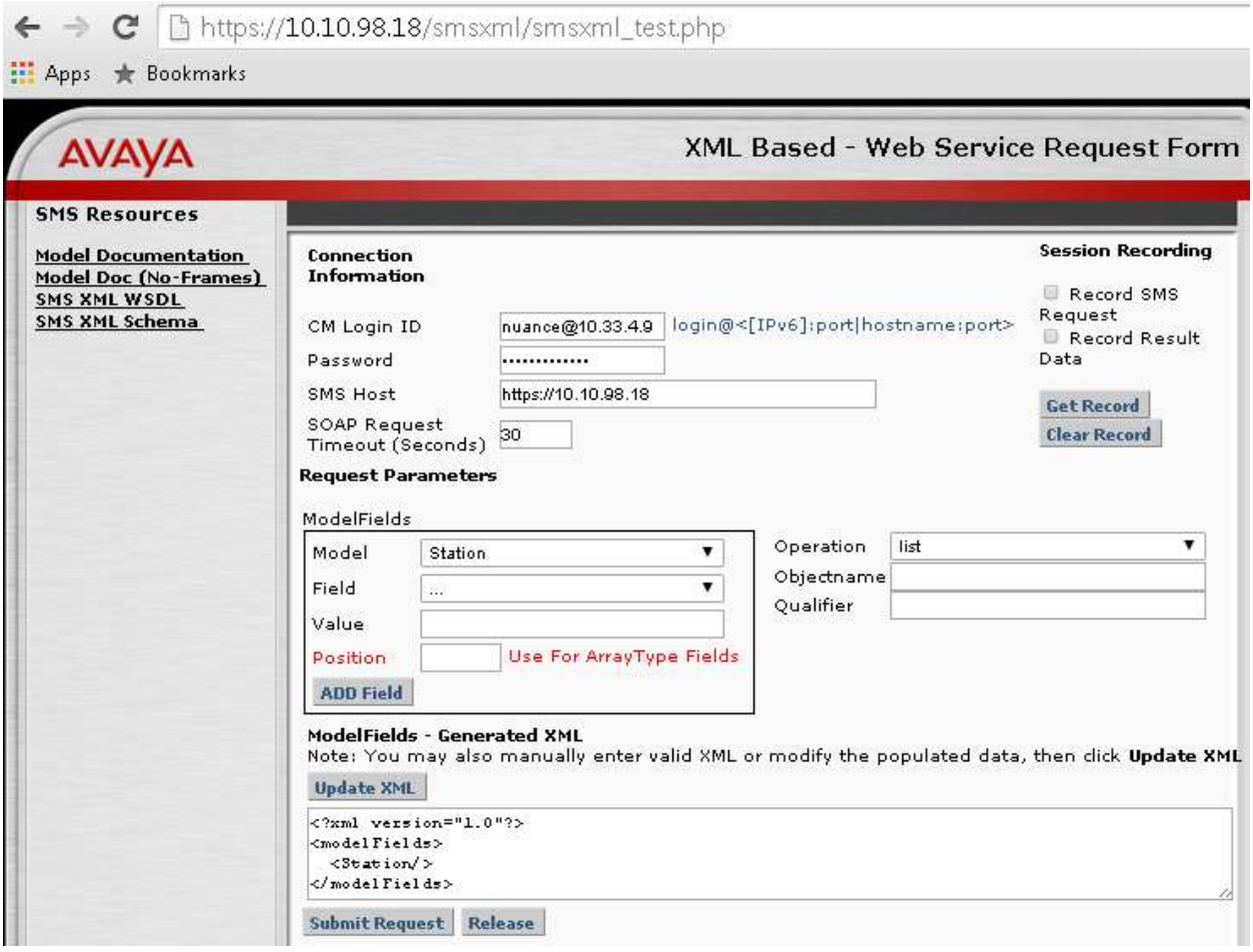
The following steps are used to verify the configuration:

- Verify connection to Application Enablement Services Web Services SDK
- Verify list of all registered station on Communication Manager (use the **list registered-ip-stations** command on the SAT)
- Verify Nuance Line Mapping table

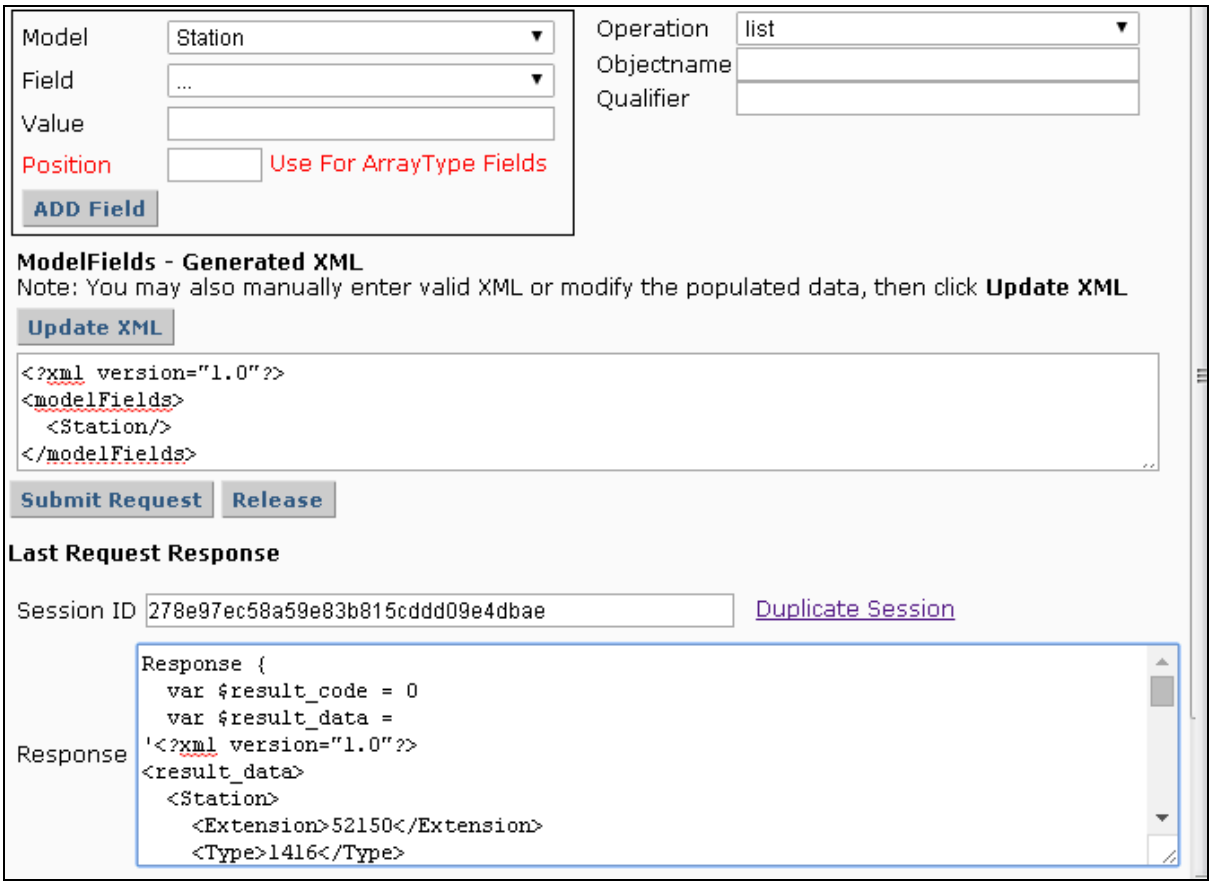
8.1. Verify connection to Avaya Aura® Application Enablement Services Web Services SDK

Open a browser session to **https://<AES Address>/smsxml/smsxml_test.php** this will open a web services test page as shown below.

Enter the proper credentials for the **CM Login ID** and **Password**. This will be the same username and password for the user created in **Section 5**. The CM Login ID should be in the format username@CMIPAddress. The **SMS Host** will be the IP Address of the AES server. Any **Model** and **Operation** can be selected from **ModelFields**. In the example below **Station** and **List** were chosen, simply to list the station. Click on **Submit Request** at the bottom of the screen.



If the SMS SDK is operational it should come back with a **Response** such as that shown below. If there is an issue an error message will be displayed.



8.2. Verify list of registered phones on Communication Manager

The **list registered-ip-stations** command will show all active registered stations in Communication Manager.

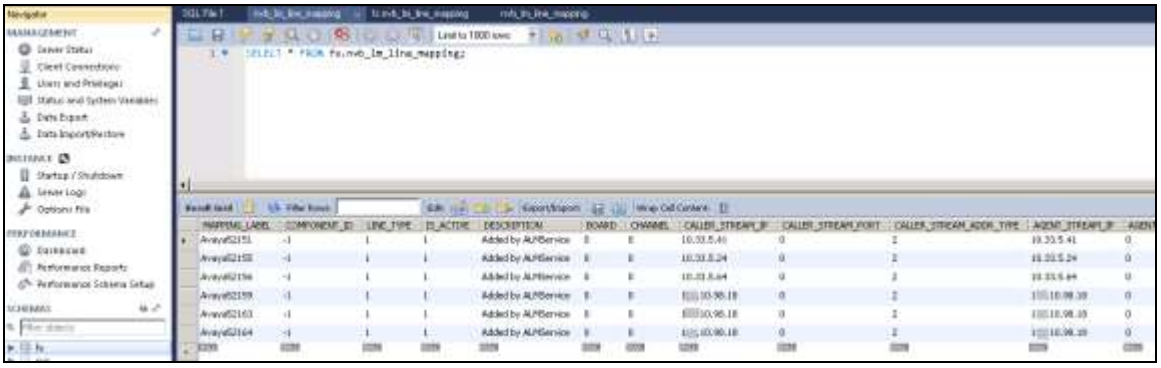
```
list registered-ip-stations

                          REGISTERED IP STATIONS

Station Ext   Set Type/ Prod ID/   TCP Station IP Address/
or Orig Port  Net Rgn   Release    Skt Gatekeeper IP Address
------------- --------- ---------- --- ---------------------------------------
52151         9630      IP_Phone    y  10.33.5.41
              1         3.220A         10.33.4.9
52155         9650      IP_Phone    y  10.33.5.24
              1         3.230A         10.33.4.9
52156         9650      IP_Phone    y  10.33.5.64
              1         3.230A         10.33.4.9
52158         4620      IP_API_A    y  10.10.98.18
              1         3.2040         10.33.4.9
52159         4620      IP_API_A    y  10.10.98.18
              1         3.2040         10.33.4.9
52163         4620      IP_API_A    y  10.10.98.18
              1         3.2040         10.33.4.9
52164         4620      IP_API_A    y  10.10.98.18
              1         3.2040         10.33.4.9
```

8.3. Verify Nuance Line Mapping table

Verify that ALM Service retrieves and writes all the registered stations configured in Communication in its Line Mapping table. Number of stations listed in this table should match with the number of stations shown in **Section 8.2.**



9. Conclusion

These Application Notes describes the configuration steps required for Nuance Avaya Line Mapping Service to successfully interoperate with Avaya Aura® Communication Manager R6.3 using the SMS SDK on Avaya Aura® Application Enablement Services R6.3.

Please refer to **Section 2.2** to see the compliance test results and observations.

10. Additional References

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

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

[1] *Administering Avaya Aura® Communication Manager*, Document ID 03-300509
[2] *Avaya Aura® Communication Manager Feature Description and Implementation*, Document ID 555-245-205
[3] *Avaya Aura® Application Enablement Services Administration and Maintenance Guide* Release 6.3

Information on the Avaya Aura® Application Enablement Services SMS SDK can be found by navigating to this link,
https://www.devconnectprogram.com/fileMedia/download/021e2e74-3726-4ce9-b3be-0edf5e4d4599

Other information on the Avaya Aura® Application Enablement Services SMS Web Services can be found by navigating to this link,
https://www.devconnectprogram.com/site/global/downloads/index.gsp?item=9c899e0e-e0c8-48eb-bd9d-3d1ea5db52c8

Further information about Nuance Voice Biometrics product line please visit
http://www.nuance.com