



Avaya Solution & Interoperability Test Lab

Application Notes for Interactions Curo Automated Speech Recognizer and Text-to-Speech Server with Avaya Aura® Experience Portal – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Curo Automated Speech Recognizer and Text-to-Speech Server with Avaya Aura® Experience Portal.

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

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

1. Introduction

The objective of compliance test was to validate interoperability of Curo Automated Speech Recognizer and Text-to-Speech Server with Avaya Aura® Experience Portal.

Curo provides a complete set of speech recognition and text-to-speech technologies for use in interactive voice response (IVR) applications. The product set includes the Curo Automatic Speech Recognizer (ASR) and Text-to-Speech (TTS) Server. Both products are used in conjunction with the Curo Media Server which provides an interface to Avaya Aura® Experience Portal using the Media Resource Control Protocol (MRCP).

2. General Test Approach and Test Results

General test approach was to test various VoiceXML scripts that exercise various types of grammars in Curo ASR and TTS. A predefined set of VoiceXML scripts tested built-in DTMF, voice grammars, and menu grammars.

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 tests. Feature tests focused on the ability of Curo ASR and TTS to successfully exercise appropriate grammar and return expected results.

Serviceability testing focused on verifying the ability of Curo ASR and TTS server to recover from adverse conditions, such as restart, power failures and network disconnects.

2.2. Test Results

All test cases were executed and passed with the following observations.

- Curo ASR and TTS cannot not be configured to use as IBM_WVS engine type it will cause a core dump in the Media Processing Platform of Experience Portal.
- Voice change within a single TTS request is currently not supported by Curo Speech.
- VXML <menu> and Semantic Interpretation for Speech Recognition (SISR) grammar are currently not working in the integration between Avaya Experience Portal and Curo Speech, therefore VXML <menu> and SISR are not supported with this solution at the current time. This issue is under investigation.
- There was an update on the SISR grammar issue, the new patch 7.1.0.0.1116 of Avaya Experience Portal fixed a part of SISR issue which is SISR <tag> parsing for single-level level object component.

2.3. Support

To obtain technical support for Curo:

- **Web:** <http://www.interactions.com/>
- **Phone:** (866) 637-9049

3. Reference Configuration

Following diagram shows the configuration used during interoperability compliance test. Reference configuration consisted of: Avaya Aura® Experience Portal, Avaya Aura® Communication Manager, Avaya Aura® Session Manager, Avaya Aura® System Manager, Avaya G450 Media Gateway, Avaya Aura® Media Server, Avaya IP Telephones and Interactions Curo Speech server. Simulated PSTN connected to the G450 via PRI/T1 trunk.

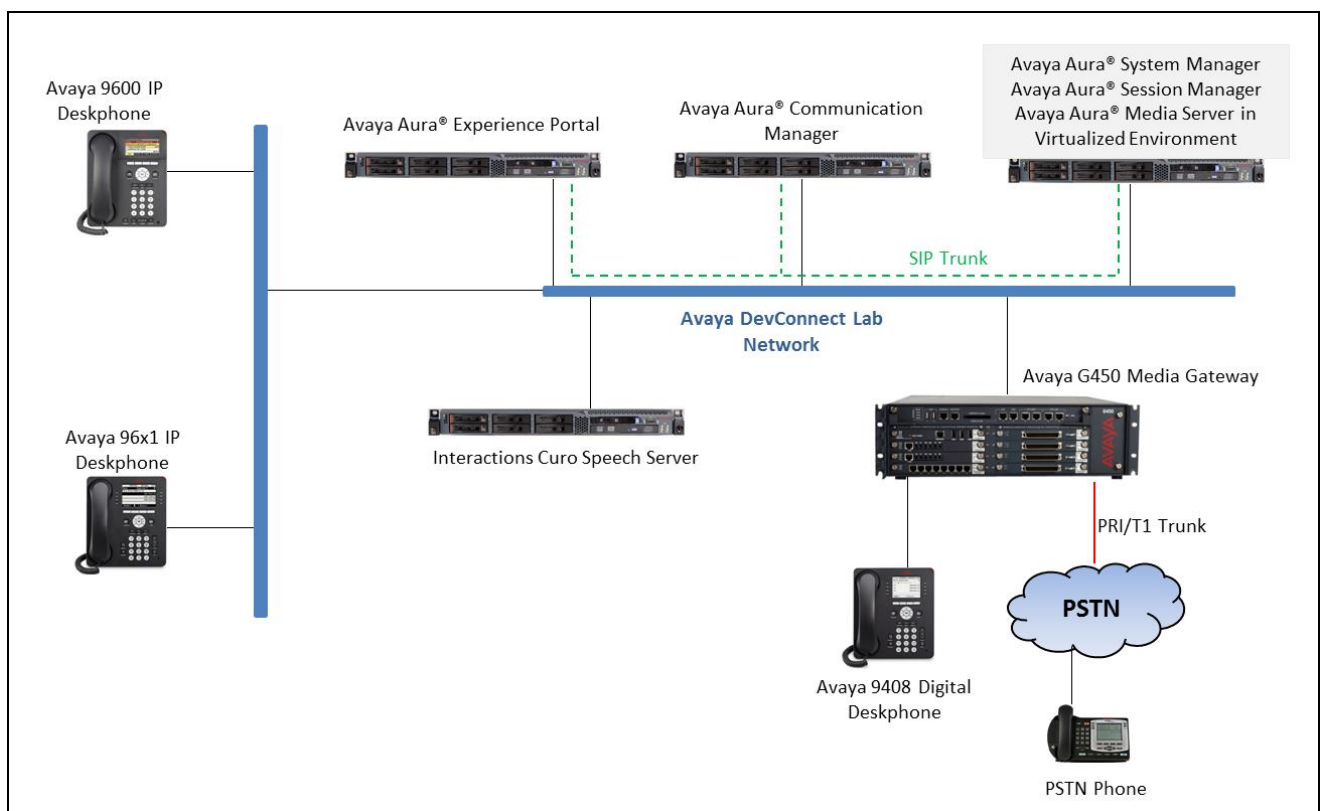


Figure 1: Test Configuration Diagram

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 Virtualized Environment	R017x.00.0.441.0
Avaya Aura® System Manager running on Virtualized Environment	7.0.1.0.064859
Avaya Aura® Session Manager running on Virtualized Environment	7.0.1.0.701007
Avaya Aura® Media Server running on Virtualized Environment	7.7.0.34
Avaya Aura® Experience Portal running on Virtualized Environment	7.1.0
Avaya G450 Media Gateway	37.19.0
Avaya 9641 H323 IP Deskphone	6.6.29
Avaya 9611 SIP IP Deskphone	7.1
Avaya 9640 H323 IP Deskphone	3.20A
Interactions Curo Speech running on Virtualized Environment	7.0.6

5. Configure Avaya Aura® Communication Manager

This document assumes installation and configuration of Avaya Aura® Communication Manager (CM) are already in place. For more information on how to configure CM, please refer to **Section 11**.

6. Configure Avaya Aura® Experience Portal

Avaya Aura® Experience Portal is configured via the Experience Portal Manager (EPM) web interface, to access the web interface, enter **http://<ip-addr>/** as the URL in a web browser, where <ip-addr> is the IP address of the EPM. Log in using the appropriate credentials.

Note: Some of the screens in this section are shown after the Experience Portal had been configured. Don't forget to save the screen parameters as configured in Avaya Aura® Experience Portal

The screenshot displays the Avaya Aura® Experience Portal Manager (EPM) web interface. The top header includes the Avaya logo, a welcome message for 'admin', and the last login time. The main content area is titled 'Avaya Aura® Experience Portal Manager' and provides an overview of the EPM's role in administering the Experience Portal. A sidebar on the left lists various management categories such as User Management, Real-time Monitoring, System Maintenance, System Management, System Configuration, Security, Reports, Multi-Media Configuration, and POM. The main content area also lists 'Installed Components' including Media Processing Platform, Email Service, HTML Service, Proactive Outreach Manager, and SMS Service. A legal notice section is visible at the bottom.

AVAYA Welcome, admin
Last logged in yesterday at 11:43:04 AM PDT

Avaya Aura® Experience Portal 7.1.0 (ExperiencePortal) Home ? Help Logoff

Expand All | Collapse All

You are here: Home

Avaya Aura® Experience Portal Manager

Avaya Aura® Experience Portal Manager (EPM) is the consolidated web-based application for administering Experience Portal. Through the EPM interface you can configure Experience Portal, check the status of an Experience Portal component, and generate reports related to system operation.

Installed Components

Media Processing Platform
Media Processing Platform (MPP) is an Avaya media processing server. When an MPP receives a call from a PBX, it invokes a VoiceXML (or CCXML) application on an application server. It then communicates with ASR and TTS servers as necessary to process the call.

Email Service
Email Service is an Experience Portal feature which provides e-mail capabilities.

HTML Service
HTML Service is an Experience Portal feature which supports web applications with HTML5 capabilities. It includes support for browser based services for mobile devices.

Proactive Outreach Manager
Avaya Proactive Outreach Manager (POM) provides a solution for unified, multichannel, inbound and outbound architecture, with the capability to communicate through different channels of interaction, from Short Message Service (SMS) to e-mail to the traditional voice and video.

SMS Service
SMS Service is an Experience Portal feature which provides SMS capabilities.

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Notice

6.1. Administer VoIP Connection

On the left pane, click on the VoIP Connections under System Configuration (not shown). To add a **SIP Connection**, click on **SIP** tab on **VoIP Connections** page (not shown). Fill in **Name**, in the **Address** and **Port** boxes, fill the IP address and Port of the SIP Proxy used for call transport. In this case Avaya Aura® Session Manager was used, in **SIP Domain**, fill in the domain and set the **Maximum Simultaneous Calls**. All other values can be left as **Default**. Click **Save** to save changes.

You are here: [Home](#) > [System Configuration](#) > [VoIP Connections](#) > [Change SIP Connection](#)

Change SIP Connection

Use this page to change the configuration of a SIP connection.

Name:

Enable: ☒ Yes ☐ No

Proxy Transport:

☒ Proxy Servers ☐ DNS SRV Domain

Address	Port	Priority	Weight	
<input type="text" value="10.33.1.12"/>	<input type="text" value="5060"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	Remove

[Additional Proxy Server](#)

Listener Port:

SIP Domain:

P-Asserted-Identity:

Maximum Redirection Attempts:

Consultative Transfer: ☒ INVITE with REPLACES ☐ REFER

SIP Reject Response Code: ☒ ASM (503) ☐ SES (480) ☐ Custom

SIP Timers

T1: milliseconds

T2: milliseconds

B and F: milliseconds

Call Capacity

Maximum Simultaneous Calls:

☒ All Calls can be either inbound or outbound

☐ Configure number of inbound and outbound calls allowed

[Save](#) [Apply](#) [Cancel](#) [Help](#)

6.2. Administer Speech Server

6.2.1. Administer ASR

On the left pane, navigate to **System Configuration** → **Speech Servers** (not shown). To add an **ASR** server, click on **ASR** tab(not shown) and click **Add**(not shown). Enter a **Name**, set **Enable** to **Yes** and set **Engine Type** to **Nuance**. Fill in the IP address of Curo speech ARS in **Network Address**. In **Base Port**, fill in **10554**, enter appropriate value in **Total Number of Licensed ASR Resources**, set **New Connection per Session** to **Yes**, set **Languages** to **English(USA) en-US** and set **RTSP URL** to **/10.10.97.30/media/speechrecognizer**. Click **Save** to save changes.

You are here: [Home](#) > [System Configuration](#) > [Speech Servers](#) > [Change ASR Server](#)

Change ASR Server

Use this page to change the configuration of an ASR server.

Name:	CuroASR
Enable:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Engine Type:	<input type="text" value="Nuance"/>
Network Address:	<input type="text" value="10.10.97.30"/>
Base Port:	<input type="text" value="10554"/>
Total Number of Licensed ASR Resources:	<input type="text" value="5"/>
New Connection per Session:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Languages:	<div><div>English(Australia) en-AU</div><div>English(UK) en-GB</div><div>English(India) en-IN</div><div>English(Singapore) en-SG</div><div>English(South_Africa) en-ZA</div><div>English(USA) en-US</div></div>

MRCP

Ping Interval:	<input type="text" value="15"/>	seconds
Response Timeout:	<input type="text" value="4"/>	seconds
Protocol:	<input type="text" value="MRCP V1"/>	
RTSP URL:	<input type="text" value="10.10.97.30/media/speechrecognizer"/>	

6.2.2. Administer TTS

On the left pane, navigate to **System Configuration → Speech Servers** (not shown). To add an **TTS** server, click on **TTS** tab(not shown) and click **Add**(not shown). Enter a **Name**, set **Enable** to **Yes** and set **Engine Type** to **Nuance**. Fill in the IP address of Curo speech TTS in **Network Address**. In **Base Port**, fill in **10554**, enter appropriate value in **Total Number of Licensed ASR Resources**, set **New Connection per Session** to **Yes**, set **Voices** to **English(USA) en-US Lisa F** and set **RTSP URL** to **/10.10.97.30/media/speechsynthesizer**. Click **Save** to save changes.

You are here: [Home](#) > [System Configuration](#) > [Speech Servers](#) > Change TTS Server

Change TTS Server

Use this page to change the configuration of a TTS server.

Name: CuroTTS

Enable: ☒ Yes ☐ No

Engine Type: Nuance

Network Address: 10.10.97.30

Base Port: 10554

Total Number of Licensed TTS Resources: 5

New Connection per Session: ☒ Yes ☐ No

Voices:

English(USA) en-US Zoe F

English(USA) en-US Donna F

English(USA) en-US Erica F

English(USA) en-US Jennifer F

English(USA) en-US Jill F

English(USA) en-US Lisa F

MRCP

Ping Interval: 15 seconds

Response Timeout: 4 seconds

Protocol: MRCP V1

RTSP URL: 10.10.97.30/media/speechsynthesizer

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

6.3. Administer Applications

Applications are needed to drive calls in Experience Portal. To add a new application, from the left pane, navigate to **System Configurations** → **Applications** and in the Application page click Add button (not shown). Below are sample of application used during the compliance test. In the Speech Server section, select the ASR and TTS servers as configured in **Section 5.2**.

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

Change Application

Use this page to change the configuration of an application.

Name: Curo_Date

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: Nuance
Languages: English(USA) en-US
Spanish(USA) es-US

TTS: Nuance
Voices: English(USA) en-US Lisa F

Application Launch

☒ Inbound ☐ Inbound Default ☐ Outbound

☒ Number ☐ Number Range ☐ URI

Called Number: **Add**

Remove

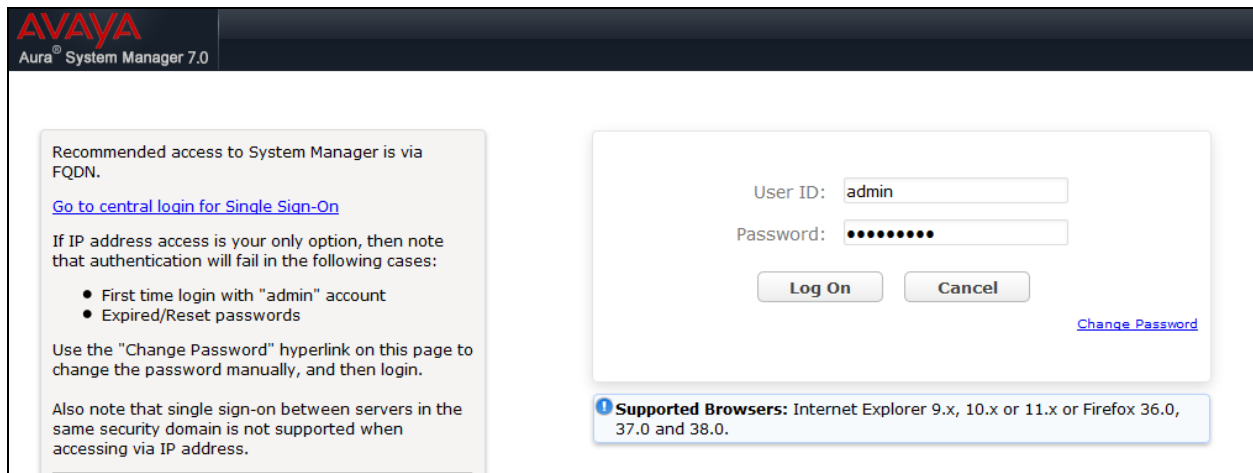
Speech Parameters ▸
Reporting Parameters ▸
Advanced Parameters ▸

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

7. Configure Avaya Aura® Session Manager

Configuration for Session manager is performed via System Manager. From a web browser type in [https://IP-Address\]/SMGR](https://IP-Address]/SMGR) where IP-Address is the IP Address of System Manager. Log in using appropriate credentials.

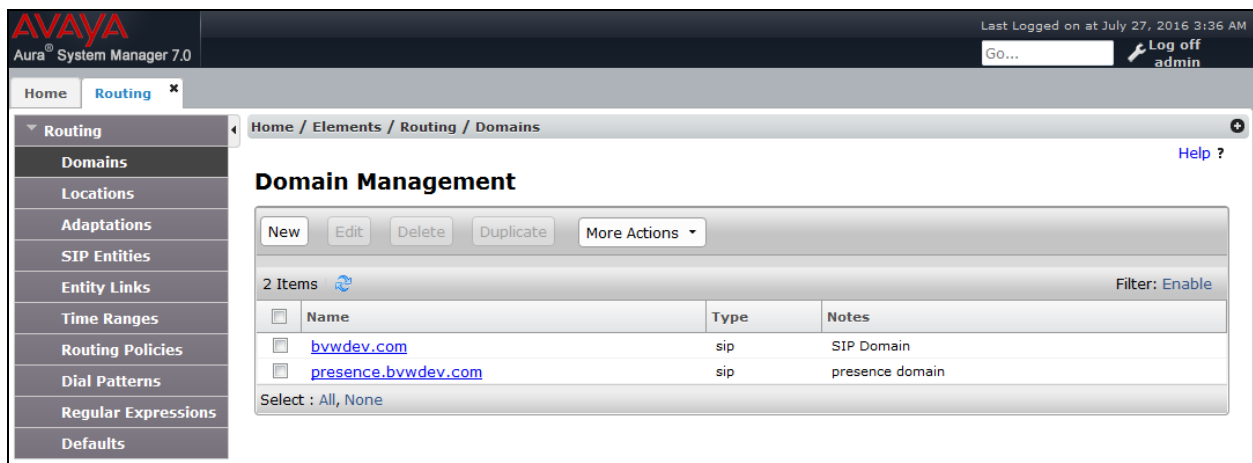
Please note that configuration of each item is not shown in detail. In the following sections, screen captures of the configured items during compliance testing are shown. For details steps on configuration of each item, refer to Document [2].



The screenshot shows the Avaya Aura System Manager 7.0 login interface. On the left, there is a sidebar with instructions: "Recommended access to System Manager is via FQDN. Go to central login for Single Sign-On. If IP address access is your only option, then note that authentication will fail in the following cases: • First time login with 'admin' account • Expired/Reset passwords. Use the 'Change Password' hyperlink on this page to change the password manually, and then login. Also note that single sign-on between servers in the same security domain is not supported when accessing via IP address." On the right, there is a login form with fields for "User ID" (containing "admin") and "Password" (masked with dots). Below the fields are "Log On" and "Cancel" buttons, and a "Change Password" link. At the bottom, a blue box states: "Supported Browsers: Internet Explorer 9.x, 10.x or 11.x or Firefox 36.0, 37.0 and 38.0."

7.1. Configure Domain

Once logged in, select **Routing** (not shown). On the left pane select **Domains**. Click **New** to add a new domain. For compliance testing, domain of **bvwdev.com** was added.

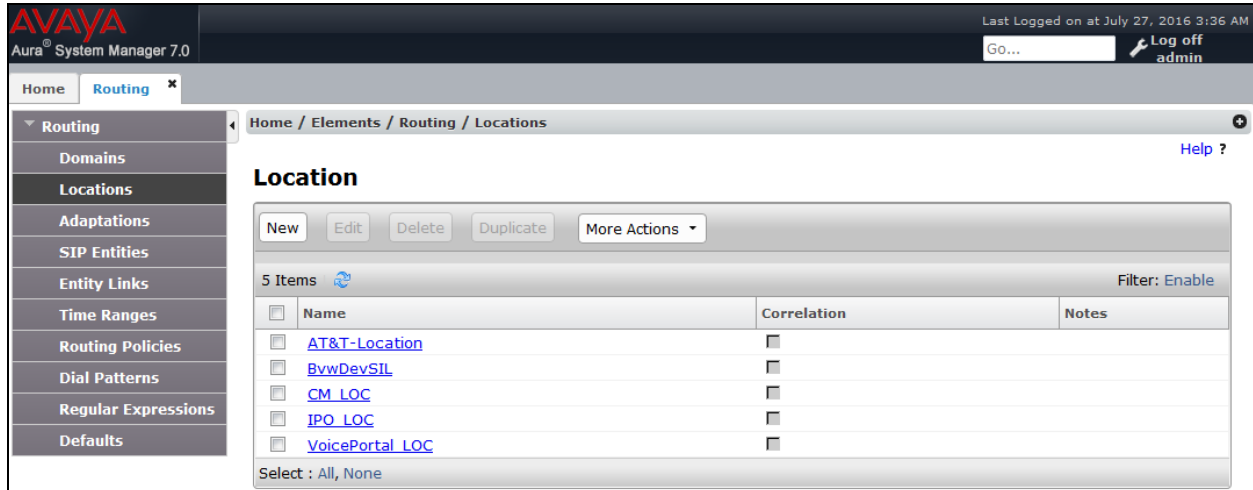


The screenshot shows the Avaya Aura System Manager 7.0 Domain Management page. The top navigation bar includes "Home", "Routing" (selected), and "Domains". The left sidebar lists various configuration options: Routing, Domains, Locations, Adaptations, SIP Entities, Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area is titled "Domain Management" and shows a table with 2 items. The table has columns for Name, Type, and Notes. The items are "bvwdev.com" (SIP Domain) and "presence.bvwdev.com" (presence domain). There are buttons for "New", "Edit", "Delete", "Duplicate", and "More Actions". A "Filter: Enable" link is also present.

Name	Type	Notes
bvwdev.com	sip	SIP Domain
presence.bvwdev.com	sip	presence domain

7.2. Configure Locations

From the left pane, select **Location**. To add a new location, select **New**. For compliance testing, location of **CM_LOC** and **VoicePortal_LOC** were added.



AVAYA
Aura® System Manager 7.0

Last Logged on at July 27, 2016 3:36 AM
Go... Log off admin

Home Routing

Home / Elements / Routing / Locations

Location

New Edit Delete Duplicate More Actions

5 Items Filter: Enable

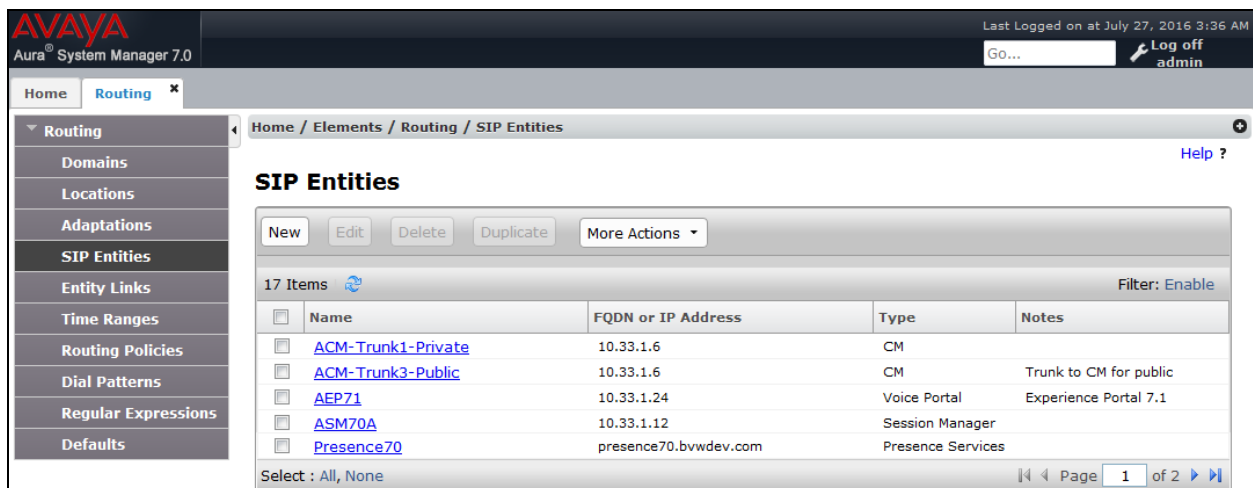
<input type="checkbox"/>	Name	Correlation	Notes
<input type="checkbox"/>	AT&T-Location	<input type="checkbox"/>	
<input type="checkbox"/>	BvwDevSIL	<input type="checkbox"/>	
<input type="checkbox"/>	CM_LOC	<input type="checkbox"/>	
<input type="checkbox"/>	IPO_LOC	<input type="checkbox"/>	
<input type="checkbox"/>	VoicePortal_LOC	<input type="checkbox"/>	

Select : All, None

7.3. Configure SIP Entities

From the left pane, select **SIP Entities**. To add a new SIP Entity, select **New**. For compliance testing, three SIP Entities were added as shown below.

- AEP71: Experience Portal SIP Entity
- ASM70A: Session Manager SIP Entity
- ACM-Trunk1-Private: Communication Manager SIP Entity



AVAYA
Aura® System Manager 7.0

Last Logged on at July 27, 2016 3:36 AM
Go... Log off admin

Home Routing

Home / Elements / Routing / SIP Entities

SIP Entities

New Edit Delete Duplicate More Actions

17 Items Filter: Enable

<input type="checkbox"/>	Name	FQDN or IP Address	Type	Notes
<input type="checkbox"/>	ACM-Trunk1-Private	10.33.1.6	CM	
<input type="checkbox"/>	ACM-Trunk3-Public	10.33.1.6	CM	Trunk to CM for public
<input type="checkbox"/>	AEP71	10.33.1.24	Voice Portal	Experience Portal 7.1
<input type="checkbox"/>	ASM70A	10.33.1.12	Session Manager	
<input type="checkbox"/>	Presence70	presence70.bvwdev.com	Presence Services	

Select : All, None

Page 1 of 2

7.4. Configure Entity Links

For each SIP Entity, with the exception of Session Manager, an entity link needs to be added. On the left pane, select **Entity Links**. To add a new entity link, select **New**. For compliance testing two entity links, one for Communication Manager and another for Experience Portal, were added.

The screenshot shows the Avaya Aura System Manager 7.0 interface. The left sidebar has a menu with 'Entity Links' selected. The main content area is titled 'Entity Links' and shows a table with 19 items. The table has columns for Name, SIP Entity 1, Protocol, Port, SIP Entity 2, DNS Override, Port, Connection Policy, Deny New Service, and Notes. Two items are visible:

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	DNS Override	Port	Connection Policy	Deny New Service	Notes
ASM70A_AEP71_5060_TCP	ASM70A	TCP	5060	AEP71	<input type="checkbox"/>	5060	trusted	<input type="checkbox"/>	
ASM70A_ACM-Trunk1-Private_5061_TLS	ASM70B	TLS	5061	ACM-Trunk1-Private	<input type="checkbox"/>	5061	trusted	<input type="checkbox"/>	

7.5. Configure Time Ranges

On the left pane, select **Time Ranges**. To add a new time range, select **New**. For compliance testing, time range of 24/7 was added.

The screenshot shows the Avaya Aura System Manager 7.0 interface. The left sidebar has a menu with 'Time Ranges' selected. The main content area is titled 'Time Ranges' and shows a table with 1 item. The table has columns for Name, Mo, Tu, We, Th, Fr, Sa, Su, Start Time, End Time, and Notes. One item is visible:

Name	Mo	Tu	We	Th	Fr	Sa	Su	Start Time	End Time	Notes
24/7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00:00	23:59	Time Range 24/7

7.6. Configure Routing Policies

On the left pane, select **Routing Policies**. To add a new routing policy, select **New**. For compliance testing, two routing policies were added, one for Communication Manager and another for Experience Portal.

AVAYA
Aura® System Manager 7.0

Last Logged on at July 27, 2016 3:36 AM
GO... Log off admin

Home Routing

Home / Elements / Routing / Routing Policies

Routing Policies

New Edit Delete Duplicate More Actions

10 Items Filter: Enable

<input type="checkbox"/>	Name	Disabled	Retries	Destination	Notes
<input type="checkbox"/>	To-EPVM71	<input type="checkbox"/>	0	AEP71	Route to Experience Portal 7.1
<input type="checkbox"/>	To-CM-Trunk1	<input type="checkbox"/>	0	ACM-Trunk1-Private	

Select : All, None

7.7. Configure Dial Patterns

On the left pane, select **Dial Patterns**. To add a new dial pattern, select **New**. For compliance testing three dial patterns were added:

- 33 and 34: All calls starting with pattern 33 and 34 with 4 digits were routed to communication manager. For compliance test, Experience Portal routed calls to extensions 3301, 3302 and 3401 which were routed to Communication Manager
- 48: All calls starting with pattern 48 and 4 digits long were routed to Experience Portal
- 9: All calls starting with 9 and 11 digits long were routed to Communication Manager. This was used for routing calls out to PSTN via PRI trunk configured in Communication Manager.

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Aura® System Manager 7.0

Last Logged on at July 27, 2016 3:36 AM
GO... Log off admin

Home Routing

Home / Elements / Routing / Dial Patterns

Dial Patterns

New Edit Delete Duplicate More Actions

21 Items Filter: Enable

<input type="checkbox"/>	Pattern	Min	Max	Emergency Call	Emergency Type	Emergency Priority	SIP Domain	Notes
<input type="checkbox"/>	33	4	4	<input type="checkbox"/>			bvwdev.com	
<input type="checkbox"/>	34	4	4	<input type="checkbox"/>			bvwdev.com	
<input type="checkbox"/>	48	4	4	<input type="checkbox"/>			bvwdev.com	
<input type="checkbox"/>	9	11	11	<input type="checkbox"/>			bvwdev.com	

Select : All, None

Page 1 of 2

8. Configure Interactions Curo Speech Server

The configuration of Integration Curo speech system is done by Interactions engineer and is outside of the scope of these Application Notes. To obtain further information on Integration Curo system configuration please contacts an authorized Interactions representative.

9. Verification Steps

This section provides the verification steps that may be performed to verify that Avaya Aura® Experience Portal can run Curo Speech ASR and TTS servers.

1. From the EPM web interface, verify that the MPP servers are online and running. On the left pane, navigate to **System Management** → **MPP Manager** (not shown).

You are here: [Home](#) > System Management > MPP Manager

MPP Manager (Aug 23, 2016 10:53:01 AM PDT)

[Refresh](#)

This page displays the current state of each MPP in the Experience Portal system. To enable the state and mode commands, select one or more MPPs. To enable the mode commands, the selected MPPs must also be stopped.

Last Poll: Aug 23, 2016 10:53:00 AM PDT

<input type="checkbox"/>	Server Name	Mode	State	Config	Auto Restart	Restart Schedule		Active Calls	
						Today	Recurring	In	Out
<input type="checkbox"/>	mpp71	Online	Running	OK	No	No	None	0	0

State Commands

Mode Commands


Restart/Reboot Options

☒ One server at a time
☐ All servers

2. Verify that the ports on the MPP server are in service. On the left lane, click on **Port Distribution**. Select the MPP server and click **OK**.

You are here: [Home](#) > [Real-Time Monitoring](#) > [Port Distribution](#) > Port Distribution Report

Port Distribution Report (Aug 23, 2016 10:55:49 AM PDT)

[Refresh](#)

This page displays information about how the telephony resources have been distributed to the MPPs. You configure the telephony resources on the VoIP Connections page.

Servers: mpp71
Total Ports: 50 **Last Poll:** Aug 23, 2016 10:55:41 AM PDT

Port	Mode	State	Port Group	Protocol	Current Allocation	Base Allocation
50	Online	In service	ASM70	SIP_Trunk	mpp71	

[Help](#)

3. Place calls to the experience portal number 4806 as configured in Section 6.3, listen to the prompt and select a proper option to test ASR and TTS.

10. Conclusion

These Application Notes describe the configuration steps required to integrate Interactions Curo Automated Speech Recognizer and Text-to-Speech Server with Avaya Aura® Experience Portal. All feature and serviceability test cases were completed successfully refer to **Section 2.2** for details.

11. Additional References

This section references the Avaya documentation relevant to these Application Notes. The following Avaya product documentation is available at <http://support.avaya.com>.

- [1] Administering Avaya Aura® Communication Manager, Release 7.0.3, Document 03-300509, Issue 10, June 2016
- [2] Administering Avaya Aura® Session Manager, Release 7.0, Issue 7, Jan 2016
- [3] Administering Avaya Aura® Experience Portal, Release 7.0.1, April 2015

Interactions Curo documentation is always available from <http://www.interactions.com/library/>

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