



## **Application Notes for Configuring Nuance Speech Attendant with Avaya Aura® Session Manager R6.3 and Avaya Aura® Communication Manager R6.3 – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required to integrate the Nuance Speech Attendant with Avaya Aura® Session Manager and Avaya Aura® Communication Manager using SIP integration. Nuance Speech Attendant allows callers to speak the name of a person, department, service, or location and be automatically transferred to the requested party without waiting to speak to an operator. In addition, the caller may dial an extension number and be transferred to the requested party.

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 steps required to integrate the Nuance Speech Attendant (SA) with Avaya Aura® Session Manager and Avaya Aura® Communication Manager using SIP integration. Nuance Speech Attendant allows callers to speak the name of a person, department, service, or location and be automatically transferred to the requested party without waiting to speak to an operator. In addition, the caller may dial an extension number to be transferred to the requested party.

## 2. General Test Approach and Test Results

The interoperability compliance testing included feature and serviceability test cases. No performance testing was done and the tests listed in **Section 2.1** were executed and verified.

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 Feature testing focused on Nuance SA successfully recognizing spoken names and extensions entered via DTMF, and then transferring the call to the correct destination. Blind and supervised transfers were verified. Other features covered included: DNIS and CLID handling, barge-in /no barge-in, adding new transfer entries, recording caller utterances, and accessing Maintenance Mode and Personal Administration Mode to record name and change PIN.

Serviceability testing focused on verifying the ability of the Nuance SA to recover from adverse conditions, such as server restarts, power failures, and disconnecting cables to the IP network.

### 2.2. Test Results

The objectives outlined in **Section 2.1** were verified and all test cases passed.

- Nuance SA does not support shuffling (i.e., direct IP-IP media) and should be disabled either in the IP Network Region or SIP signaling group as shown in **Section 5.2**.

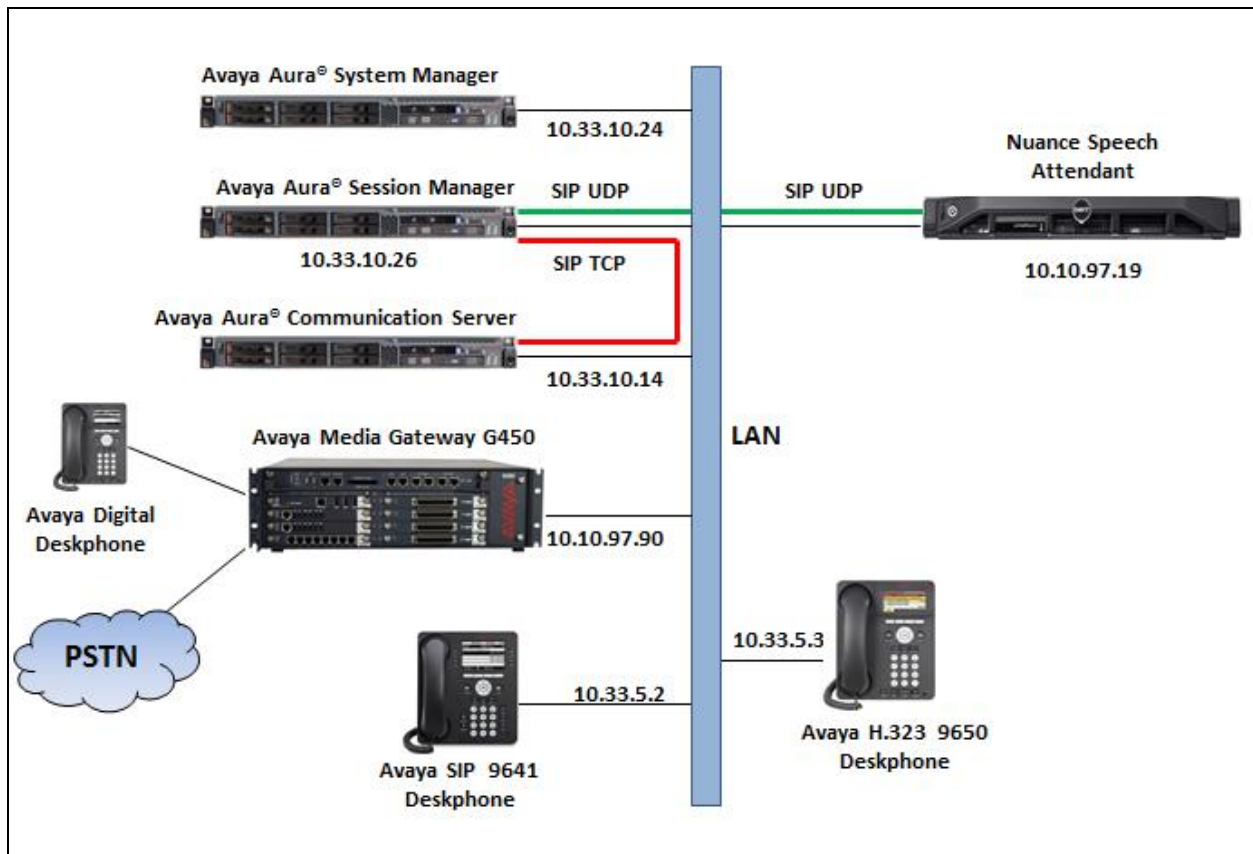
### 2.3. Support

To obtain technical support for Nuance Speech Attendant, contact Nuance via their website, email, or phone number.

- Web: [www.network.nuance.com](http://www.network.nuance.com).
- Email: [SpeechAttendant.Support@nuance.com](mailto:SpeechAttendant.Support@nuance.com).
- Phone: +1 (866) 434-2564 or +1 (514) 390-3922.

### 3. Reference Configuration

**Figure 1** illustrates the setup used to verify the Nuance Speech Attendant (SA) solution with Avaya Aura® Session Manager and Avaya Aura® Communication Manager. Nuance SA is deployed on a dedicated server running Windows 2008 R2 Enterprise server. Session Manager interfaces to Communication Manager using a SIP trunk, and Nuance SA interfaces to Session Manager via SIP. To access the Nuance SA application, a call is simply routed from Communication Manager to the SA server through the Session Manager. Multiple SIP ports were configured on the Nuance SA server. Avaya Aura® System Manager was used to configure Session Manager.



**Figure 1: Reference Configuration Diagram**

## 4. Equipment and Software Validated

The following equipment and software was used during the lab testing:

Equipment	Software Version
Avaya Aura® Session Manager running on S8800 Server	Release: 6.3.7 Build No. 6.3.0.0.630002-6.3.7.637004
Avaya Aura® System Manager running on S8800 Server	6.3.7 – FP3 Build No. 6.3.0.8.5682 - 6.3.8.3204
Avaya Aura® Communication Manager running on Avaya S8800Server	R016x. 03.0.124.0 Patch 21460
Avaya Media Gateway G450	35.8.0
Avaya 9641G IP Deskphone (SIP)	SIP 6.3.1
Avaya 9650 IP Deskphone (H.323)	3.2.2
Nuance Speech Attendant	V12

## 5. Configure Avaya Aura® Communication Manager

This section provides the procedures for configuring Communication Manager. The procedures include the following areas:

- Verify SIP Trunk Capacity.
- Configure a SIP trunk between Communication Manager and Session Manager.
- Configure AAR Call Routing to Nuance SA.

Use the System Access Terminal (SAT) to configure Communication Manager and log in with the appropriate credentials. In the Communication Manager SAT screens shown throughout this document, the SAT command used to access each screen is displayed in the upper left-hand corner of the screen.

### 5.1. Verify SIP Trunk Capacity

Using the SAT, verify that SIP trunks are enabled in the **system-parameters customer-options** form. The license file installed on the system controls these options. If a required feature is not enabled, contact an authorized Avaya sales representative. On Page 2 of the system-parameters customer-options form, verify that the number of SIP trunks supported by the system is sufficient.

<b>display system-parameters customer-options</b>		Page 2 of 11
OPTIONAL FEATURES		
IP PORT CAPACITIES	USED	
Maximum Administered H.323 Trunks:	12000	0
Maximum Concurrently Registered IP Stations:	18000	3
Maximum Administered Remote Office Trunks:	12000	0
Maximum Concurrently Registered Remote Office Stations:	18000	0
Maximum Concurrently Registered IP eCons:	414	0
Max Concur Registered Unauthenticated H.323 Stations:	100	0
Maximum Video Capable Stations:	41000	0
Maximum Video Capable IP Softphones:	18000	6
<b>Maximum Administered SIP Trunks:</b>	<b>24000</b>	<b>20</b>
Maximum Administered Ad-hoc Video Conferencing Ports:	24000	0
Maximum Number of DS1 Boards with Echo Cancellation:	522	0
Maximum TN2501 VAL Boards:	128	0
Maximum Media Gateway VAL Sources:	250	1
Maximum TN2602 Boards with 80 VoIP Channels:	128	0
Maximum TN2602 Boards with 320 VoIP Channels:	128	0
Maximum Number of Expanded Meet-me Conference Ports:	300	0

## 5.2. Configure SIP Trunk

In the IP Node Names form, assign a host name and an IP address for the Session Manager SIP interface (e.g. **SM** and **10.33.10.26**). The host name will be used throughout the other configuration screens of Communication Manager.

change node-names ip		Page 1 of 2
IP NODE NAMES		
Name	IP Address	
<b>SM</b>	<b>10.33.10.26</b>	
default	0.0.0.0	
<b>procr</b>	<b>10.33.10.14</b>	
procr6	::	

In the IP Network Region form, the Authoritative Domain field is configured to match the domain name configured on Session Manager in **Section 6.1**. In this configuration, the domain name is **avayalab.com**. By default, IP-IP Direct Audio (shuffling) is enabled to allow audio traffic to be sent directly between IP endpoints without using media resources in the Avaya G450 Media Gateway. However, Nuance SA does not support shuffling so it should be disabled either in the IP Network Region configured below or in the SIP signaling group. The IP Network Region form also specifies the Codec Set to be used for calls routed over the SIP trunk to Session Manager. This codec set is used when its corresponding network region (i.e., IP Network Region '1') is specified in the SIP signaling group.

change ip-network-region 1		Page 1 of 20
IP NETWORK REGION		
Region: 1		
Location: 1	Authoritative Domain: <b>avayalab.com</b>	
Name: 1	Stub Network Region: n	
MEDIA PARAMETERS	<b>Intra-region IP-IP Direct Audio: no</b>	
<b>Codec Set: 1</b>	<b>Inter-region IP-IP Direct Audio: no</b>	
UDP Port Min: 2048	IP Audio Hairpinning? n	
UDP Port Max: 3329		
DIFFSERV/TOS PARAMETERS		
Call Control PHB Value: 46		
Audio PHB Value: 46		
Video PHB Value: 26		
802.1P/Q PARAMETERS		
Call Control 802.1p Priority: 6		
Audio 802.1p Priority: 6		
Video 802.1p Priority: 5		
H.323 IP ENDPOINTS	AUDIO RESOURCE RESERVATION PARAMETERS	
H.323 Link Bounce Recovery? y	RSVP Enabled? n	
Idle Traffic Interval (sec): 20		
Keep-Alive Interval (sec): 5		
Keep-Alive Count: 5		

In the IP Codec Set form, select the audio codec type supported for calls routed over the SIP trunk to Nuance SA. The form is accessed via the **change ip-codec-set 1** command. Note that IP codec set 1 was specified in IP Network Region form shown above. The default settings of the IP Codec Set form are shown below. Nuance SA supports G.711mu-law.

<b>change ip-codec-set 1</b>		Page 1 of 2	
IP Codec Set			
Codec Set: 1			
Audio Codec	Silence Suppression	Frames Per Pkt	Packet Size (ms)
1: G.711MU	n	2	20

Prior to configuring a SIP trunk group for communication with Session Manager, a SIP signaling group must be configured. Configure the Signaling Group form as follows:

- Set the Group Type field to **sip**.
- Set the IMS Enabled field to **n**.
- The Transport Method field was set to **tcp**.
- Specify the processor (**procr**) board and the Session Manager as the two ends of the signaling group in the Near-end Node Name field and the Far-end Node Name field, respectively. These field values are taken from the IP Node Names form.
- Ensure that the TCP port value of **5060** is configured in the Near-end Listen Port and the Far-end Listen Port fields.
- The preferred codec for the call will be selected from the IP codec set assigned to the IP network region specified in the Far-end Network Region field.
- Enter the domain name of Session Manager in the Far-end Domain field. In this configuration, the domain name is **avayalab.com**.
- The Direct IP-IP Audio Connections field was disabled on this form since Nuance SA does not support shuffling.
- The DTMF over IP field should be set to the default value of **rtp-payload**. Communication Manager supports DTMF transmission using RFC 2833. The default values for the other fields may be used.

add signaling-group 1		Page 1 of 2
SIGNALING GROUP		
Group Number: 1	Group Type: sip	
IMS Enabled? n	Transport Method: tcp	
Q-SIP? n		
IP Video? n	Enforce SIPS URI for SRTP? y	
Peer Detection Enabled? y	Peer Server: SM	
Prepend '+' to Outgoing Calling/Alerting/Diverting/Connected Public Numbers? y		
Remove '+' from Incoming Called/Calling/Alerting/Diverting/Connected Numbers? n		
Near-end Node Name: procr	Far-end Node Name: SM	
Near-end Listen Port: 5060	Far-end Listen Port: 5060	
	Far-end Network Region: 1	
Far-end Domain: avayalab.com		
Incoming Dialog Loopbacks: eliminate	Bypass If IP Threshold Exceeded? n	
DTMF over IP: rtp-payload	RFC 3389 Comfort Noise? n	
Session Establishment Timer(min): 3	Direct IP-IP Audio Connections? n	
Enable Layer 3 Test? y	IP Audio Hairpinning? n	
	Alternate Route Timer(sec): 6	

Configure the Trunk Group form as shown below. This trunk group is used for calls to SIP endpoints. Set the Group Type field to **sip**, set the Service Type field to **tie**, specify the signaling group associated with this trunk group in the Signaling Group field, and specify the Number of Members supported by this SIP trunk group. Configure the other fields in bold and accept the default values for the remaining fields.

add trunk-group 1		Page 1 of 21	
TRUNK GROUP			
Group Number: 1	<b>Group Type: sip</b>	CDR Reports: y	
Group Name: SIP-PRIVATE	COR: 1	TN: 1	TAC: #01
Direction: two-way	Outgoing Display? n		
Dial Access? n	Night Service:		
Queue Length: 0			
Service Type: <b>tie</b>	Auth Code? n	Member Assignment Method: auto	
		<b>Signaling Group: 1</b>	
		<b>Number of Members: 10</b>	

On Page 3 of the trunk group form, set the Numbering Format field to **private**. This field specifies the format of the calling party number sent to the far-end.

add trunk-group 1		Page 3 of 21	
TRUNK FEATURES			
ACA Assignment? n	Measured: none	Maintenance Tests? y	
<b>Numbering Format: private</b>		UI Treatment: service-provider	
		Replace Restricted Numbers? n	
		Replace Unavailable Numbers? n	
Modify Tandem Calling Number: no			
Show ANSWERED BY on Display? y			

Configure the Numbering – Private Format form to send the calling party number to the far end. Add an entry so that local stations with a 5-digit extension beginning with ‘6’, whose calls are routed over the trunk group 1, have the extension sent to the Nuance SA for proper CLID handling.

change private-numbering 0					Page 1 of 2	
NUMBERING - PRIVATE FORMAT						
Ext Len	Ext Code	Trk Grp(s)	Private Prefix	Total Len		
4	3	1		4	Total Administered: 2	
<b>5</b>	<b>6</b>	<b>1</b>		<b>5</b>	Maximum Entries: 540	

### 5.3. Configure AAR Call Routing to Nuance Speech Attendant

In the **dialplan analysis** table, use the command **change dialplan analysis** to define a dialing plan for Nuance SA with **5**-digit starting from '7' with the call type as **aar**.

change dialplan analysis										Page 1 of 12
DIAL PLAN ANALYSIS TABLE										
Location: all										Percent Full: 2
Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type		
6	5	ext								
<b>7</b>	<b>5</b>	<b>aar</b>								
9	1	fac								
*	3	dac								
#	3	dac								

In the AAR Digit Analysis Table, specify a Dialed String that would match the Nuance SA extension (**70000**) and specify the Route Pattern that will be used to route the call.

change aar analysis 0										Page 1 of 2
AAR DIGIT ANALYSIS TABLE										
Location: all										Percent Full: 0
Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req				
<b>70000</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>aar</b>		<b>n</b>				

In the Route Pattern form, specify the SIP trunk group for Grp No, and set the Numbering Format for the route preference to **lev0-pvt**.

change route-pattern 1															Page 1 of 3
Pattern Number: 1															
Pattern Name: SIP-Private															
SCCAN? n															
Secure SIP? n															
Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted						DCS/	IXC	
			Mrk	Lmt	List	Del	Digits						QSIG		
							Dgts						Intw		
<b>1: 1</b>	<b>0</b>												n	user	
2:													n	user	
3:													n	user	
4:													n	user	
5:													n	user	
6:													n	user	
	BCC	VALUE	TSC	CA-TSC		ITC	BCIE	Service/Feature	PARM	No.	Numbering	LAR			
	0	1	2	M	4	W		Request		Dgts	Format				
										Subaddress					
1:	y	y	y	y	y	n	n			rest	<b>lev0-pvt</b>	none			
2:	y	y	y	y	y	n	n			rest		none			
3:	y	y	y	y	y	n	n			rest		none			
4:	y	y	y	y	y	n	n			rest		none			
5:	y	y	y	y	y	n	n			rest		none			
6:	y	y	y	y	y	n	n			rest		none			

## 6. Configure Avaya Aura® Session Manager

This section provides the procedures for configuring Session Manager. The procedures include adding the following items:

- SIP domain.
- Logical/physical Locations that can be occupied by SIP Entities.
- SIP Entities corresponding to Session Manager and Communication Manager.
- Entity Links, which define the SIP trunk parameters used by Session Manager when routing calls to/from SIP Entities.
- Routing Policies, which control call routing between the SIP Entities.
- Dial Patterns, which govern to which SIP Entity a call is routed.

Configuration is accomplished by accessing the browser-based GUI of System Manager using the URL “https://<ip-address>”, where <ip-address> is the IP address of System Manager. Log in with the appropriate credentials (not shown). Select **Routing** after logging in (not shown).

### 6.1. Specify SIP Domain

Add the SIP domain for which the communications infrastructure will be authoritative. Do this by selecting **Domains** on the left and clicking the **New** button on the right (not shown). The following screen will then be shown. Fill in the following:

- Name: The authoritative domain name (e.g., avayalab.com).
- Notes: Descriptive text (optional).

Click Commit.

Since the sample configuration does not deal with any other domains, no additional domains need to be added.

AVAYA  
Aura® System Manager 6.3

Last Logged on at August 5, 2014 8:18 AM  
Help | About | Change Password | Log off admin

Home Routing \*  
Home / Elements / Routing / Domains

Domain Management

Commit Cancel

1 Item Filter: Enable

Name	Type	Notes
* avayalab.com	sip	

Commit Cancel

## 6.2. Add Locations

Locations can be used to identify logical and/or physical locations where SIP Entities reside for purposes of bandwidth management. To add a location, select **Locations** on the left and then click the **New** button on the right (not shown). The following screen will then be shown. Fill in the following:

- Under **General**:
  - **Name**: A descriptive name.
  - **Notes**: Descriptive text (optional).

AVAYA  
Aura® System Manager 6.3

Last Logged on at June 9, 2014 8:26 AM  
Help | About | Change Password | Log off admin

Home Routing

Home / Elements / Routing / Locations

Location Details

Commit Cancel

Help ?

**General**

\* Name: Belleville

Notes:

**Dial Plan Transparency in Survivable Mode**

Enabled: ☐

Listed Directory Number:

Associated CM SIP Entity:

**Overall Managed Bandwidth**

Managed Bandwidth Units: Kbit/sec

Total Bandwidth:

Multimedia Bandwidth:

Audio Calls Can Take Multimedia

- Under **Location Pattern**:
  - **IP Address Pattern**: A pattern used to logically identify the location.
  - **Notes**: Descriptive text (optional).

The screen below shows addition of a location which includes the Communication Manager, Session Manager, and Speech Attendant. Click **Commit** to save the Location definition.

Location Pattern

Add Remove

4 Items Filter: Enable

IP Address Pattern	Notes
* 10.33.10.0	
* 10.33.5.0	
* 10.10.97.0	
* 10.10.98.0	

Select : All, None

Commit Cancel

## 6.3. Add SIP Entities

In the sample configuration, a SIP Entity is added for Session Manager, Communication Manager, and Nuance Speech Attendant.

### 6.3.1. Session Manager SIP Entity

A SIP Entity must be added for Session Manager. To add a SIP Entity, select **SIP Entities** on the left and click on the **New** button on the right (not shown). The following screen is displayed.

Fill in the following:

- Under **General**:
  - **Name**: A descriptive name.
  - **FQDN or IP Address**: IP address of the signaling interface on Session Manager.
  - **Type**: Select **Session Manager**.
  - **Location**: Select the location defined previously.
  - **Time Zone**: Time zone for this location.

Defaults can be used for the remaining fields. Click **Commit** to save each SIP Entity definition.

**Note**: The Ports section of this screen (not shown) is assumed to have been previously configured.

The screenshot displays the Avaya Aura System Manager 6.3 web interface. The top navigation bar includes the Avaya logo, the text 'Aura System Manager 6.3', and a user status bar indicating 'Last Logged on at June 9, 2014 8:26 AM' with links for 'Help', 'About', 'Change Password', and 'Log off admin'. The left sidebar contains a menu with options: Home, Routing, Domains, Locations, Adaptations, SIP Entities (selected), Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area is titled 'Home / Elements / Routing / SIP Entities' and features a 'SIP Entity Details' section with a 'General' tab. The 'General' tab contains the following fields: 'Name' (SM63), 'FQDN or IP Address' (10.33.10.26), 'Type' (Session Manager), 'Notes' (empty), 'Location' (Belleville), 'Outbound Proxy' (empty), 'Time Zone' (America/Toronto), and 'Credential name' (empty). A 'SIP Link Monitoring' section at the bottom shows 'SIP Link Monitoring' set to 'Use Session Manager Configuration'. The 'Commit' and 'Cancel' buttons are located at the top right of the form area.

### 6.3.2. Communication Manager SIP Entity

A SIP Entity must be added for the Communication Manager. To add a SIP Entity, select **SIP Entities** on the left and click on the **New** button on the right (not shown). The following screen is displayed. Fill in the following:

- Under **General**:

- **Name:** A descriptive name.
- **FQDN or IP Address:** IP address of the signaling interface (e.g., procr board) on the telephony system.
- **Type:** Select **CM**.
- **Location:** Select the location defined previously.
- **Time Zone:** Time zone for this location.

Defaults can be used for the remaining fields. Click **Commit** to save each SIP Entity definition.

AVAYA  
Aura® System Manager 6.3

Last Logged on at June 9, 2014 8:26 AM  
Help | About | Change Password | Log off admin

Home Routing

Home / Elements / Routing / SIP Entities

SIP Entity Details

Commit Cancel

General

\* Name: SP-CM63

\* FQDN or IP Address: 10.33.10.14

Type: CM

Notes:

Adaptation:

Location: Belleville

Time Zone: America/Toronto

\* SIP Timer B/F (in seconds): 4

Credential name:

Call Detail Recording: none

Loop Detection

Loop Detection Mode: Off

SIP Link Monitoring

SIP Link Monitoring: Use Session Manager Configuration

### 6.3.3. Nuance Speech Attendant SIP Entity

A SIP Entity must be added for Nuance SA. To add a SIP Entity, select **SIP Entities** on the left and click on the **New** button on the right (not shown). The following screen is displayed. Fill in the following:

- Under **General**:
  - **Name**: A descriptive name.
  - **FQDN or IP Address**: Nuance SA IP address.
  - **Type**: Select **Other**.
  - **Location**: Select the location defined previously.
  - **Time Zone**: Time zone for this location.

Defaults may be used for the remaining fields. Click **Commit** to save each SIP Entity definition.

The screenshot shows the 'SIP Entity Details' configuration page for a Nuance Speech Attendant. The left sidebar contains a navigation menu with options: Routing, Domains, Locations, Adaptations, SIP Entities (selected), Entity Links, Time Ranges, Routing Policies, Dial Patterns, Regular Expressions, and Defaults. The main content area is titled 'SIP Entity Details' and includes a 'General' tab. The 'General' tab contains the following fields: 'Name' (Nuance), 'FQDN or IP Address' (10.10.97.19), 'Type' (Other), 'Notes' (empty), 'Adaptation' (empty), 'Location' (Belleville), 'Time Zone' (America/Toronto), 'SIP Timer B/F (in seconds)' (4), 'Credential name' (empty), 'Call Detail Recording' (none), and 'CommProfile Type Preference' (empty). Below the 'General' tab are sections for 'Loop Detection' (Loop Detection Mode: Off) and 'SIP Link Monitoring' (SIP Link Monitoring: Use Session Manager Configuration). The 'Commit' and 'Cancel' buttons are located at the top right of the configuration area.

### 6.4. Add Entity Links

The SIP trunk from Session Manager to Communication Manager and Nuance SA are described by Entity Links. To add an Entity Link, select **Entity Links** on the left and click on the **New** button on the right (not shown). Fill in the following fields in the new row that is displayed:

- **Name**: A descriptive name.
- **SIP Entity 1**: Select the Session Manager.
- **Protocol**: Select the appropriate protocol.
- **Port**: Port number to which the other system sends SIP requests.
- **SIP Entity 2**: Select the name of Communication Manager or Nuance SA.

- **Port:** Port number on which the other system receives SIP requests.
- **Trusted:** Select Trusted.

The following screens display the two Entity Links. The first entity link is for Session Manager and Communication Manager.

AVAYA  
Aura® System Manager 6.3

Last Logged on at June 9, 2014 8:26 AM  
Help | About | Change Password | Log off admin

Home Routing

Home / Elements / Routing / Entity Links

Entity Links

Commit Cancel

1 Item Filter: Enable

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	DNS Override	Port	Connection Policy
* SM63_SP1CM63_5060_T	* SM63	TCP	* 5060	* SP1CM63	<input type="checkbox"/>	* 5060	trusted

Select : All, None

The second entity link is between Session Manager and Nuance Speech Attendant.

AVAYA  
Aura® System Manager 6.3

Last Logged on at June 9, 2014 8:26 AM  
Help | About | Change Password | Log off admin

Home Routing

Home / Elements / Routing / Entity Links

Entity Links

Commit Cancel

1 Item Filter: Enable

Name	SIP Entity 1	Protocol	Port	SIP Entity 2	DNS Override	Port	Connection Policy
* SM63_Nuance_5060_UD	* SM63	UDP	* 5060	* Nuance	<input type="checkbox"/>	* 5060	trusted

Select : All, None

## 6.5. Add Routing Policy

Routing policies describe the conditions under which calls will be routed to the SIP Entities. Two routing policies were added – one for Communication Manager and one for Nuance SA. To add a routing policy, select **Routing Policies** on the left and click on the **New** button on the right (not shown). The following screen is displayed. Fill in the following:

- Under **General**: Enter a descriptive name in Name.
- Under **SIP Entity as Destination**: Click **Select**, and then select the appropriate SIP entity to which this routing policy applies.

Defaults can be used for the remaining fields. Click **Commit** to save each Routing Policy definition. The following screen shows the Routing Policy for Communication Manager.

Home / Elements / Routing / Routing Policies

**Routing Policy Details** [Commit] [Cancel] [Help ?]

**General**

\* Name:

Disabled: ☐

\* Retries:

Notes:

**SIP Entity as Destination**

Select

Name	FQDN or IP Address	Type	Notes
SP-CM63	10.33.10.14	CM	

**Time of Day**

Add Remove View Gaps/Overlaps

1 Item Filter: Enable

Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
0	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

Select : All, None

The following screen shows the Routing Policy for Nuance SA. Note in the example below, this routing policy was given a Ranking of 0. The ranking will be discussed in the next section.

Home / Elements / Routing / Routing Policies

**Routing Policy Details** [Commit] [Cancel] [Help ?]

**General**

\* Name:

Disabled: ☐

\* Retries:

Notes:

**SIP Entity as Destination**

Select

Name	FQDN or IP Address	Type	Notes
Nuance	10.10.97.19	Other	

**Time of Day**

Add Remove View Gaps/Overlaps

1 Item Filter: Enable

Ranking	Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start Time	End Time	Notes
0	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

Select : All, None

## 6.6. Add Dial Pattern

Dial patterns must be defined that will direct calls to the appropriate SIP Entity. In the sample configuration, 5-digit extensions beginning with “6” reside on Communication Manager, extension “70000” is the Nuance SA number. To add a dial pattern, select **Dial Patterns** on the left and click on the **New** button on the right (not shown). Fill in the following:

Under General:

- **Pattern:** Dialed number or prefix.
- **Min:** Minimum length of dialed number.
- **Max:** Maximum length of dialed number.
- **SIP Domain:** Select **avayalab.com** SIP domain as defined in **Section 6.1**.
- Under **Originating Locations and Routing Policies:** Click **Add**, and then select the appropriate location and routing policy from the list.

Default values can be used for the remaining fields. The following screen shows the dial pattern definitions for local extensions on Communication Manager. Click Commit to save this dial pattern.

The following screen shows the dial pattern definition for Communication Manager extensions beginning with “6”.

Home / Elements / Routing / Dial Patterns

**Dial Pattern Details** [Commit] [Cancel] [Help ?]

**General**

\* Pattern: 6

\* Min: 5

\* Max: 5

Emergency Call: ☐

Emergency Priority: 1

Emergency Type:

SIP Domain: avayalab.com

Notes:

**Originating Locations and Routing Policies**

[Add] [Remove]

1 Item [Filter: Enable]

<input type="checkbox"/>	Originating Location Name ▲	Originating Location Notes	Routing Policy Name	Rank	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Belleville		To-SPCM63	0	<input type="checkbox"/>	SP-CM63	

The following screen shows the dial pattern definition for the Nuance SA number (70000). As mentioned in **Section 6.5**, the “To-Nuance SA” routing policy was assigned a Rank of 0. If desired, additional routing policies may be created with the desired ranks (the lower the rank number, the higher the priority). In the example below, under **Originating Locations and Routing Policies**, a second routing policy (To-DevCM) is assigned to this dial pattern. The To\_DevCM routing policy was assigned a rank of 1. When a call to extension70000 is dialed, Session Manager will first use the routing policy with the lowest rank and route the call to Nuance SA. By default, Nuance SA is configured to send a 503 SIP message when all the SA ports are busy. As a result, when Session Manager receives a 503 SIP message response, Session Manager will then attempt to reroute the call using the next lowest ranked routing policy.

Routing

Domains

Locations

Adaptations

SIP Entities

Entity Links

Time Ranges

Routing Policies

Dial Patterns

Regular Expressions

Defaults

Home / Elements / Routing / Dial Patterns

Dial Pattern Details

Commit Cancel

Help ?

General

\* Pattern: 70000

\* Min: 5

\* Max: 5

Emergency Call: ☐

Emergency Priority: 1

Emergency Type:

SIP Domain: avayalab.com

Notes:

Originating Locations and Routing Policies

Add Remove

2 Items Filter: Enable

	Originating Location Name	Originating Location Notes	Routing Policy Name	Rank	Routing Policy Disabled	Routing Policy Destination	Routing Policy Notes
<input type="checkbox"/>	Belleville		To-Nuance SA	0	<input type="checkbox"/>	Nuance	
<input type="checkbox"/>	Belleville		To-DevCM	1	<input type="checkbox"/>	DevCM	

Select : All, None

## 7. Configure Nuance Speech Attendant

This section covers the procedure for configuring Nuance Speech Attendant (SA). The procedure includes the following areas:

- Configure SIP interface in the Configuration Panel.
- Configure the number of SIP ports supported by Nuance SA.

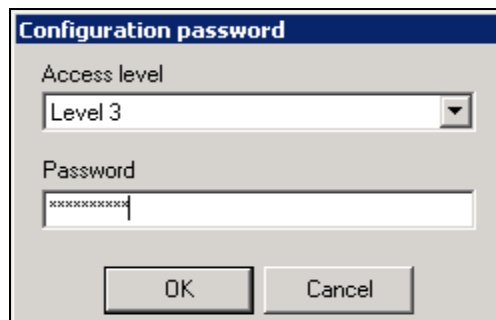
**Note:** Configuration of transfer entries and menus in Nuance SA is outside the scope of these Application Notes and will not be covered.

Nuance SA is configured through Admin Tools which can be started by navigating to Start → Programs → Speech Attendant → Admin Tools (not shown). The initial screen is displayed below.

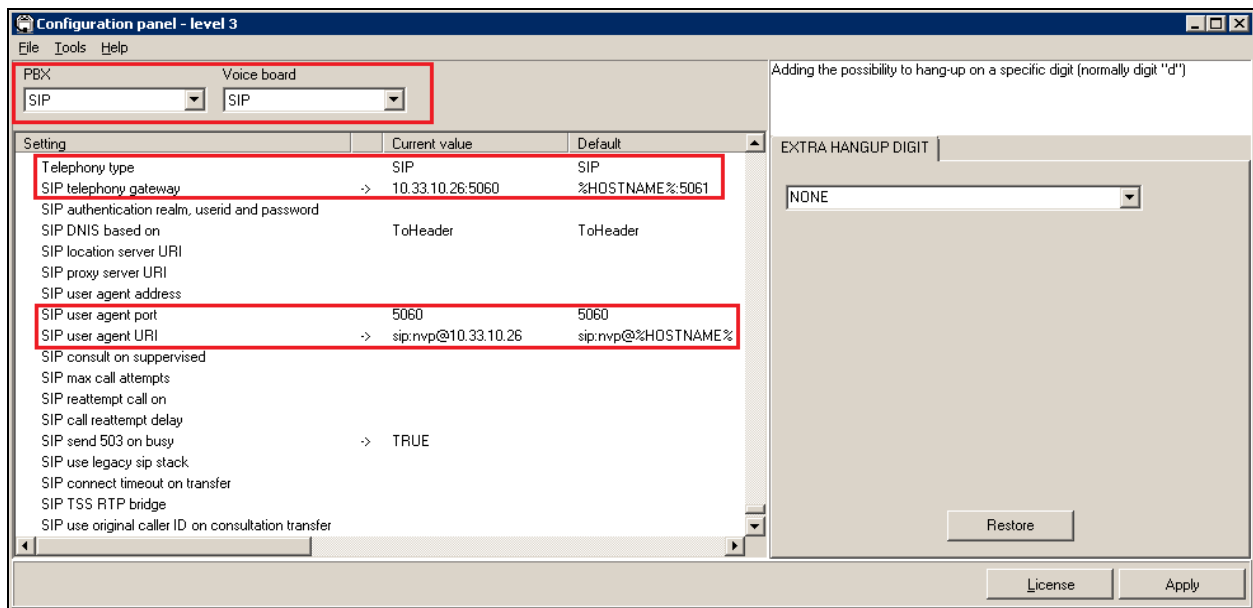


### 7.1. Configure SIP Interface in Configuration Panel

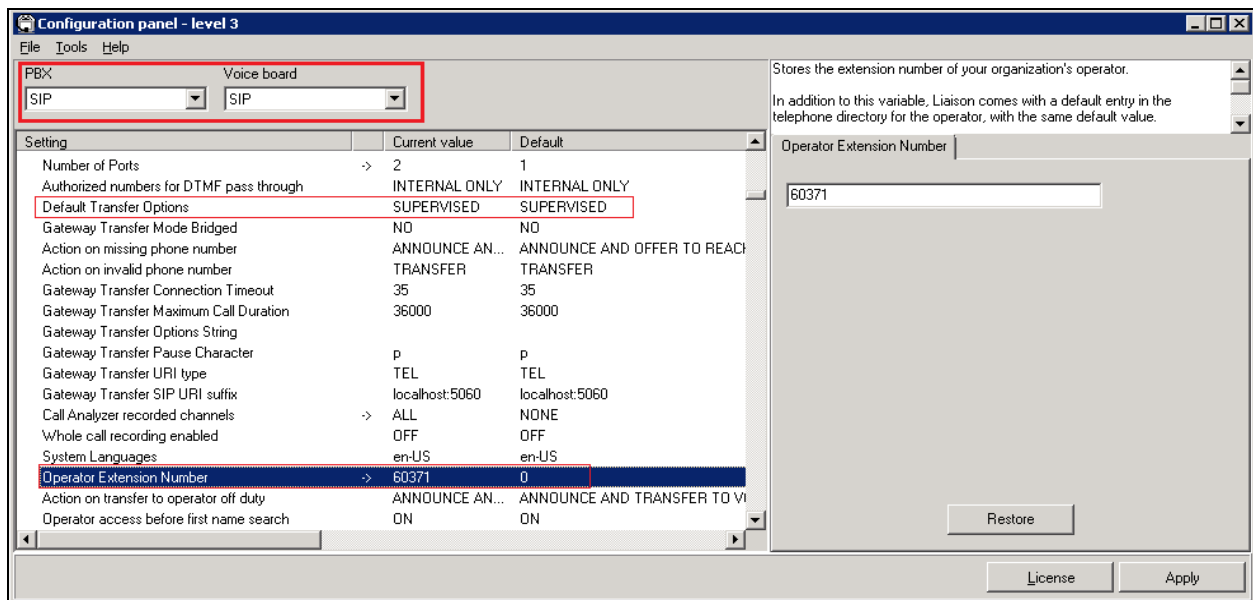
To open the Configuration Panel, click on this option in the Admin Tools window shown above. The login prompt will be displayed to the user as shown below. Log in with the appropriate credentials using Level 3 access level.



The Configuration Panel shown below is displayed. The Configuration Panel allows the SIP interface, transfer mode, and operator extension number to be configured. SA supports blind and supervised transfers. To configure the SIP interface, set the PBX and Voice Board fields to **SIP**. Next, set the Telephony type field to **SIP** and specify the Session Manager IP address and port in the SIP telephony gateway field. Configure the SIP port that SA listens on in the SIP user agent port field and specify the SIP user agent URI for SA.

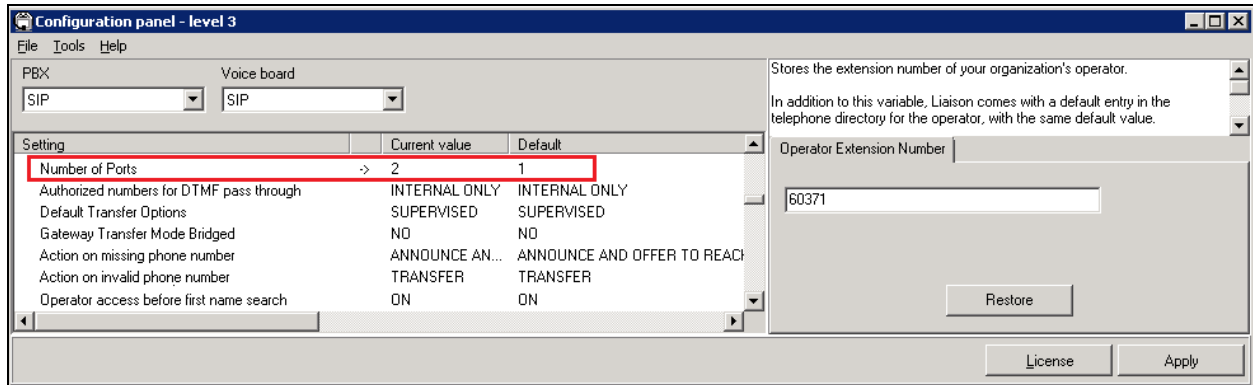


In the Configuration Panel, specify the transfer mode (supervised or unsupervised) in the Default Transfer Options field, and specify the Operator Extension Number, which should be set to a valid extension on Communication Manager.

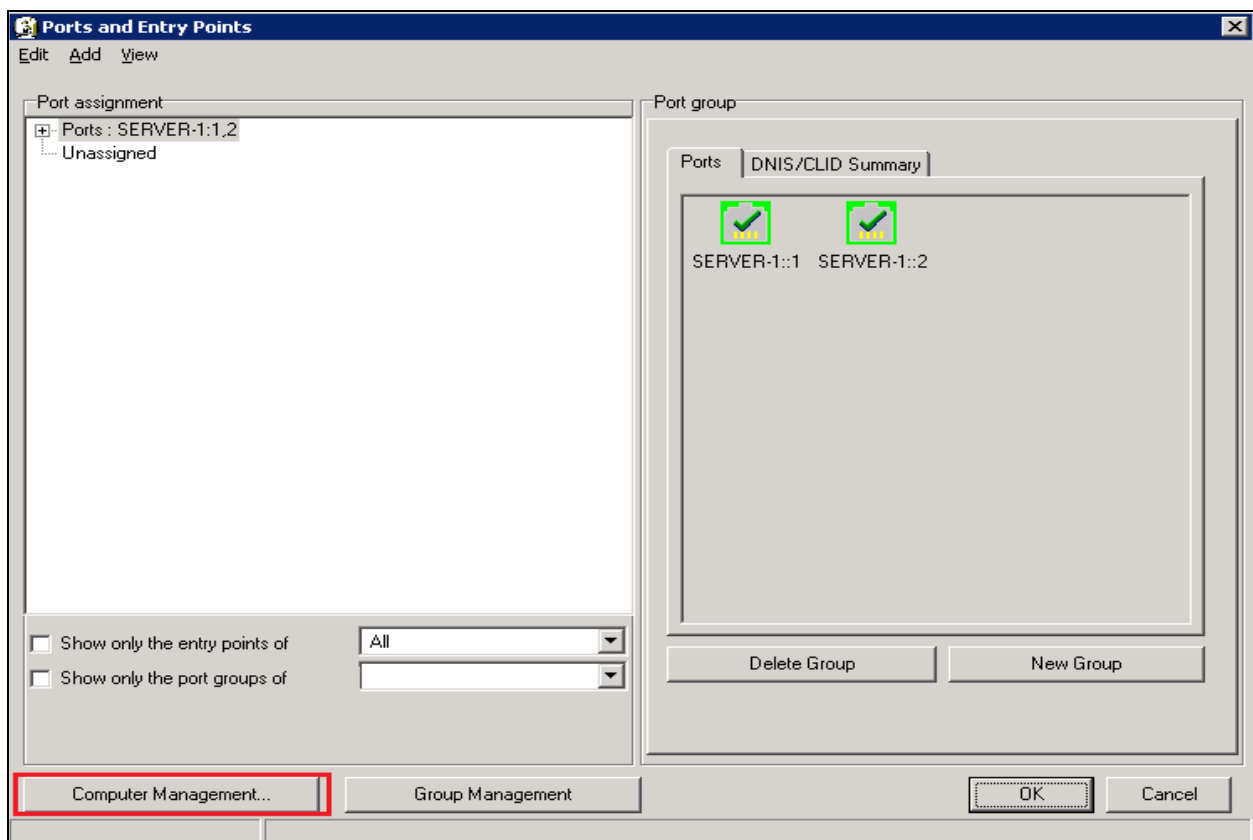


## 7.2. Configure Number of Ports

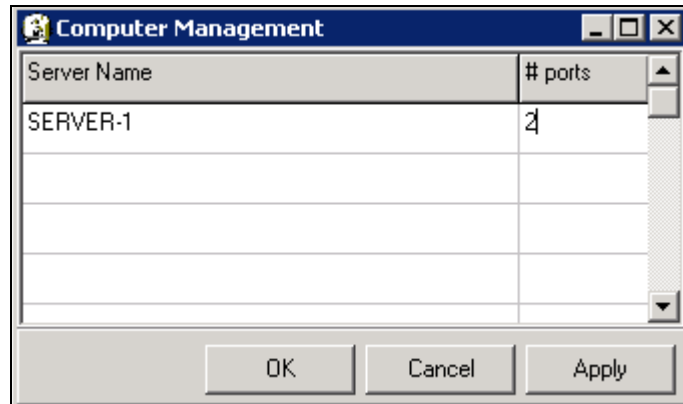
In the **Configuration Panel**, set the **Number of Ports** field to the desired value. In this example, 2 ports were configured. Click **Apply** and then close the Configuration Panel. Allow the SA application to be restarted when prompted.



From **Admin Tools**, click on the **Phone Directory and Menu Editor** option and login with the appropriate credentials. In the Menu Editor (not shown), navigate to **Edit Ports and Entry Points** to display the window below. Once the Ports and Entry Points window is opened, click on the **Computer Management** button at the bottom of the screen.



In the **Computer Management** window, set the # ports column to the desired value. In this example, 2 ports were configured. Click **OK**.



Next, close the **Configuration Panel**. Allow the system to restart when prompted.

## 8. Verification Steps

This section provides the verification steps that may be performed to verify that Nuance SA is operating properly with Avaya Aura® Session Manager and Avaya Aura® Communication Manager using SIP integration.

- Verify SIP trunk from CM to SM is in-service/idle by issue the command **status trunk <trunk group id>** as below.

```
status trunk 1
```

TRUNK GROUP STATUS			
Member	Port	Service State	Mtce Connected Ports Busy
0001/001	T00001	in-service/idle	no
0001/002	T00002	in-service/idle	no
0001/003	T00003	in-service/idle	no
0001/004	T00004	in-service/idle	no
0001/005	T00005	in-service/idle	no
0001/006	T00006	in-service/idle	no
0001/007	T00007	in-service/idle	no
0001/008	T00008	in-service/idle	no
0001/009	T00009	in-service/idle	no
0001/010	T00010	in-service/idle	no

- Place a call to Nuance SA. From the Nuance SA server, open the SA Monitor from Admin Tools (refer to **Section 7** for accessing Admin Tools) and login with the appropriate credentials. Verify that SA detects an active call as shown below. For example, the first entry indicates that the call is **in progress**.

**SpeechAttendant®**  
Hosted on Server-1

Description: Auto Attendant Version: SA 12.0.0 (with E01) (no hot fix installed)

**Sections**

- Summary status
- Reports
- Alarms
- OSA Servlet
  - Environment
  - Configuration
  - Installation log
  - Monitoring
    - Farm status
    - Process
    - Errors
    - Handlers
    - Audio Files
    - Cache
    - Threads
    - Backend
- Replication Monitor
  - Replication Status
  - Replication Errors
- Call Logs

**CALL LOGS**

Select period:  
Date from: 06/04/2014  
Date to: 06/04/2014

Filter by:  
DNIS: Starts With  
CLID: Starts With

Filter by call termination codes:  
None  
ADNT - Announce number but Do Not Transfer (CS)  
B - Busy (INF)  
BO - Busy on Operator (INF)  
CC - Cancelled by Caller (INF)

Filter by call complexity: <=>  
Filter by call duration: <=> seconds

all types last 50 calls Submit

**Logs (from database), 43 sessions**

Call start	DNIS	CLID	Call complexity	Call duration	Error	Termination code	Destination	System comment	Tagging
04/06/2014 14:37:18	70000	60396	0	0		...		in progress	
04/06/2014 14:35:41	70000	60396	0	34		OUT	Toplevel Menu	transfer completed	
04/06/2014 14:31:59	70000	60396	0	19		OUT	Toplevel Menu	transfer completed	
04/06/2014 14:15:36	70000	3000	0	4		SRI1	Toplevel Menu	caller says Good bye	
04/06/2014 14:13:35	70000	3000	0	19		HAFNF	Toplevel Menu	caller hangup	
04/06/2014 14:13:16	70000	60371	0	12		HAFNF	Toplevel Menu	caller hangup	

- Verify that the Nuance SA greeting is heard and SA transfers the call to the proper destination specified in a spoken name or extension entered via DTMF.

## 9. Conclusion

These Application Notes describe the configuration steps required to integrate Nuance Speech Attendant with Avaya Aura® Session Manager and Avaya Aura® Communication Manager using SIP integration. All feature and serviceability test cases were completed successfully. Refer to **Section 2.2** for test results and any observations.

## 10. Additional References

This section references product documentation relevant to these Application Notes.

Documentation for Avaya products can be found at <http://support.avaya.com>.

- [1] *Administering Avaya Aura® Communication Manager*, Release 6.3, Document Number 03-300509, Issue 9, October 2013
- [2] *Avaya Aura® Communication Manager Feature Description and Implementation*, Release 6.3, Document Number 555-245-205, Issue 11, October 2013
- [3] *Administering Avaya Session Manager*, Release 6.3, Issue 6 August 2014

Nuance product documentation is available at <https://network.nuance.com/portal/server.pt>

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