



## **Avaya Solution & Interoperability Test Lab**

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# **Application Notes for Nuance Speech Attendant with Avaya Aura® Communication Manager using Digital Interface – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration steps required to integrate Nuance Speech Attendant with Avaya Aura® Communication Manager using a digital interface. 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 transfer 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 Nuance Speech Attendant (SA) with Avaya Aura® Communication Manager using a digital interface. 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 transfer to the requested party.

## 1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. Feature testing focused on that Nuance SA can successfully recognize spoken names and extensions entered via DTMF, and transfer the call to the correct destination. Blind and supervised transfers were verified. Other features covered included: DNIS and CLID handling, adding new transfer entries, recording caller utterances, and accessing Maintenance Mode and Personal Administration Mode to record name and change PIN. In addition, failover support was also tested, which verified the ability to re-route the call to Nuance SA to an alternate destination if it was busy or unavailable.

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.

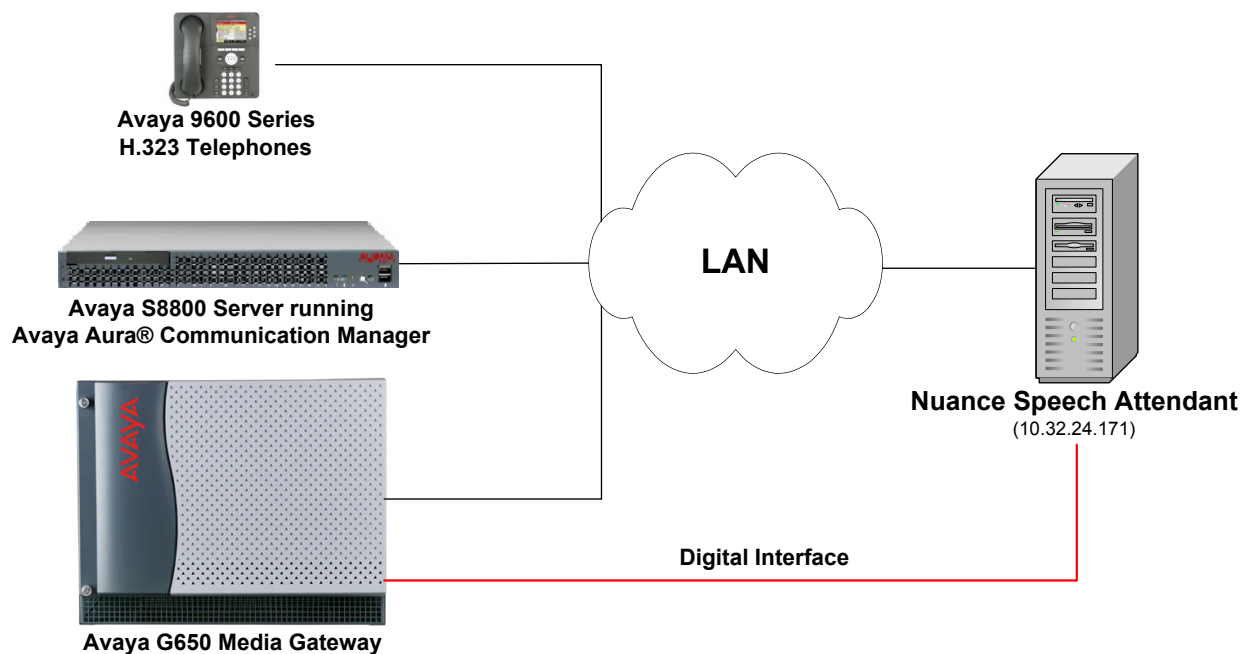
## 1.2. Support

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

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

## 2. Reference Configuration

**Figure 1** illustrates the configuration used to verify the Nuance Speech Attendant (SA) solution with Avaya Aura® Communication Manager using a digital interface. Nuance SA is deployed on a dedicated server running Windows 2003 Server. A TN2224B 2-wire Digital Line card in the G650 Media Gateway connects to a Dialogic D/82JCT-EW PBX Integration Board in the Nuance SA server. To access the Nuance SA application, a call is simply routed from Communication Manager and terminated to a digital station associated with a port on the Nuance SA server. Specifically, a call to a VDN invokes a vector that queues the call to a hunt group, which the Nuance SA ports log into using agent login-IDs. An available Nuance SA port answers the call, if available.



**Figure 1: Configuration with Nuance Speech Attendant and Avaya Aura® Communication Manager using a Digital Interface**

## 2.1. Equipment and Software Validated

The following equipment and software were used for the sample configuration:

Equipment	Software
Avaya S8800 Server	Avaya Aura® Communication Manager 6.0 with Service Pack 1
Avaya G650 Media Gateway <ul style="list-style-type: none"><li>▪ TN2224B – 2-Wire Digital Line</li></ul>	Vintage 000010
Avaya 9600 Series IP Telephones	3.110b (H.323)
Nuance Speech Attendant (SA) with a Dialogic D/82JCT-EW PBX Integration Board	11.0 with Hotfix 5

### 3. Configure Avaya Aura® Communication Manager

This section describes the configuration of the digital line interface between Communication Manager and Nuance SA. In addition, it covers the configuration of the Hunt Group, Vector Directory Number (VDN), Vector, and Agent Login-IDs used in this solution. Refer to [1] for additional information on configuring Communication Manager. The configuration described below covers the following capabilities:

- Configure login and logout access codes for logging in Agent Login-IDs into hunt group.
- Configure stations for the Nuance SA ports.
- Configure the **Hunt Group** that the Nuance SA ports will log into Agent Login-IDs.
- Configure the **Agent Login-IDs** for the Nuance SA ports. Stations associated with Nuance SA ports will log into the hunt group via **Agent LoginIDs**.
- Configure the **VDN** that receives incoming calls. Inbound calls are routed to VDN 75000 which invokes Vector 300.
- Configure the **Vector** that is invoked by VDN 75000. Vector 300 queues the incoming call to Hunt Group 270 (i.e., Nuance SA ports). If the Nuance SA ports are busy, out of service, not logged in, or Nuance SA is down, Vector 300 will route the call to an alternate destination.

The following configuration is performed via the System Access Terminal (SAT). Prior to configuring the stations for the Nuance SA ports, configure the Login and Logout Access Codes in the Feature Access Code form. In addition, configure the Auto-In and Aux Work access codes as shown below.

```
change feature-access-codes                                     Page 5 of 11
                                                                FEATURE ACCESS CODE (FAC)
                                                                Call Center Features
AGENT WORK MODES
    After Call Work Access Code: *10
    Assist Access Code:
    Auto-In Access Code: *19
    Aux Work Access Code: *17
    Login Access Code: *15
    Logout Access Code: *16
    Manual-in Access Code: *18
SERVICE OBSERVING
    Service Observing Listen Only Access Code: *12
    Service Observing Listen/Talk Access Code: *13
    Service Observing No Talk Access Code:
```

On the SAT, configure the digital stations that provide connectivity to Nuance SA. In the station form, set the **Type** field to *8434D* and configure an available port from the 2-Wire Digital Line card (TN2224B). Specify a descriptive name. Repeat for each Nuance SA port.

**Note 1:** The first port of the TN2224B Digital Line card is 1, the second port is 4, and so on.

**Note2:** For local stations on Communication Manager that will be calling Nuance SA, in order for Nuance SA to receive the CLID (calling party number), the station name must start with the extension.

add station 22001		Page 1 of 6
STATION		
Extension: 22001	Lock Messages? n	BCC: 0
<b>Type: 8434D</b>	Security Code:	TN: 1
<b>Port: 01A0601</b>	Coverage Path 1:	COR: 1
<b>Name: Nuance SA Port 1</b>	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 2	Time of Day Lock Table:	
Data Module? n	Personalized Ringing Pattern: 1	
Speakerphone: 2-way	Message Lamp Ext: 22001	
Display Language: english	Mute Button Enabled? y	
	Expansion Module? n	
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	IP SoftPhone? n	
	Remote Office Phone? n	
	IP Video? n	

On Page 4 of the station form, configure button 6 to *auto-in*, button 7 to *aux-work*, button 8 to the Logout Access code (*\*16*), and button 9 to the Login Access Code (*\*15*). The Login and Logout Access Codes were configured in the **Feature Access Code** form shown above.

add station 22001		Page 4 of 6
STATION		
SITE DATA		
Room:	Headset? n	
Jack:	Speaker? n	
Cable:	Mounting: d	
Floor:	Cord Length: 0	
Building:	Set Color:	
ABBREVIATED DIALING		
List1:	List2:	List3:
BUTTON ASSIGNMENTS		
1: call-appr	6: <b>auto-in</b>	Grp:
2: call-appr	7: <b>aux-work</b>	RC:
3: call-appr	8: <b>autodial</b>	<b>*16</b>
4:	9: <b>autodial</b>	<b>*15</b>
5:	10:	

The Nuance SA ports will log into Hunt Group 270 through the use of Agent Login-IDs configured later. Set the **Group Extension** field to a valid extension and enable the **ACD** and **Vector** options.

add hunt-group 270		Page 1 of 4	
HUNT GROUP			
Group Number: 270		ACD? y	
Group Name: Nuance SA (Digital)		Queue? y	
<b>Group Extension: 77000</b>		<b>Vector? y</b>	
Group Type: ucd-mia			
TN: 1			
COR: 1		MM Early Answer? n	
Security Code:		Local Agent Preference? n	
ISDN/SIP Caller Display:			
Queue Limit: unlimited			
Calls Warning Threshold:	Port:		
Time Warning Threshold:	Port:		

On Page 2 of the Hunt Group form, enable the **Skill** option.

add hunt-group 270		Page 2 of 4	
HUNT GROUP			
<b>Skill? y</b>		Expected Call Handling Time (sec): 180	
AAS? n		Service Level Target (% in sec): 80 in 20	
Measured: internal			
Supervisor Extension:			
Controlling Adjunct: none			
VuStats Objective:			
Timed ACW Interval (sec):			
Multiple Call Handling: none			

Add an **Agent LoginID** for each Nuance SA port. Provide a descriptive name and provide a password that will be used by Nuance SA to log into the hunt group specified on the Page 2. Repeat this configuration for each Nuance SA station. In this configuration, agent login ID 26201 was created.

add agent-loginID 26201		Page 1 of 3
AGENT LOGINID		
Login ID: 26201		AAS? n
<b>Name: Nuance SA Port 1</b>		AUDIX? n
TN: 1		LWC Reception: spe
COR: 1		LWC Log External Calls? n
Coverage Path:		AUDIX Name for Messaging:
Security Code:		
		LoginID for ISDN/SIP Display? n
		<b>Password: 26201</b>
		<b>Password (enter again): 26201</b>
		Auto Answer: station
		MIA Across Skills: system
		ACW Agent Considered Idle: system
		Aux Work Reason Code Type: system
		Logout Reason Code Type: system
Maximum time agent in ACW before logout (sec): system		
Forced Agent Logout Time: :		
WARNING: Agent must log in again before changes take effect		

On Page 2 of the **Agent LoginID** form, set the skill number (SN) to hunt group 270, which is the hunt group (skill) that the Nuance SA ports will log into.

add agent-loginID 26201		Page 2 of 3
AGENT LOGINID		
Direct Agent Skill:		Service Objective? n
Call Handling Preference: skill-level		Local Call Preference? n
SN	RL SL	
1: 270	1	
2:		
3:		
4:		
5:		
6:		
7:		
8:		
9:		
10:		
11:		
12:		
13:		
14:		
15:		



Incoming calls will be routed to VDN 75000 based on the DNIS. VDN 75000 will invoke vector 300 which will queue the call to the hunt group containing Nuance SA ports. Use the **add vdn 75000** command to create the VDN that will handle all incoming calls.

**Note:** VDN name must start with the extension for proper handling of the DNIS in Nuance SA.

```

add vdn 75000                                     Page 1 of 3
                                         VECTOR DIRECTORY NUMBER

      Extension: 75000
      Name*: 75000 SpeechAttendant
      Destination: Vector Number      300
Attendant Vectoring? n
Meet-me Conferencing? n
Allow VDN Override? n
      COR: 1
      TN*: 1
      Measured: both
Acceptable Service Level (sec): 20

VDN of Origin Annc. Extension*:
      1st Skill*:
      2nd Skill*:
      3rd Skill*:

* Follows VDN Override Rules

```

VDN 75000 will invoke vector 300 (configured below), which will queue the call to hunt group 270 in Step 02 of the vector. If Nuance is down or the ports are busy or out-of-service, the vector routes the call to an alternate destination, extension 77300, as specified in Step 03 of the vector.

```

change vector 300                                     Page 1 of 6
                                         CALL VECTOR

      Number: 300      Name: Nuance SA
Multimedia? n      Attendant Vectoring? n      Meet-me Conf? n      Lock? n
      Basic? y      EAS? y      G3V4 Enhanced? y      ANI/II-Digits? y      ASAI Routing? y
      Prompting? y      LAI? y      G3V4 Adv Route? y      CINFO? y      BSR? y      Holidays? y
      Variables? y      3.0 Enhanced? y
01 wait-time      2 secs hearing ringback
02 queue-to      skill 270 pri m
03 route-to      number 77300      with cov n if unconditionally
04 stop
05
06
07
08
09
10
11
12

Press 'Esc f 6' for Vector Editing

```

## 4. Configure Nuance Speech Attendant

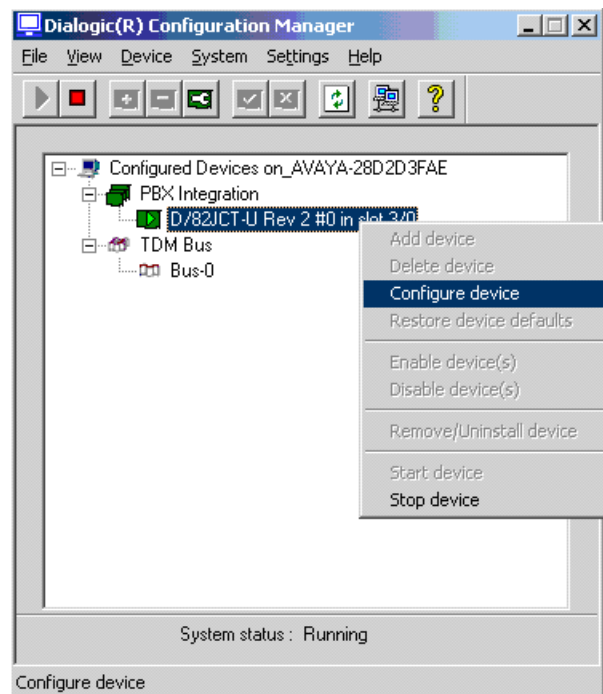
This section covers the procedure for configuring Nuance Speech Attendant (SA). The procedure includes the following areas:

- Configure the Dialogic board via the Dialogic Configuration Manager
- Configure Digital interface in the Configuration Panel
- Configure ACD login parameters in the Configuration Panel
- Configure the number of digital ports supported by Nuance SA

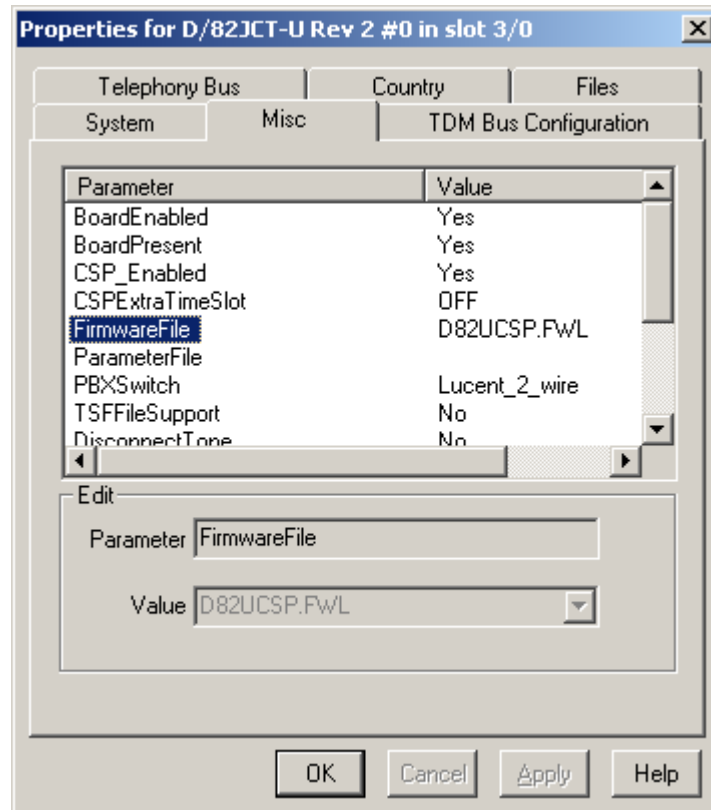
**Note:** Configuration of transfer entries and menus in Nuance SA is outside the scope of these Application Notes and will not be covered.

### 4.1. Configure the Dialogic Board

Open the Dialogic Configuration Manager on the Nuance SA server by navigating to **Start→Programs→Intel Dialogic System Release→Configuration Manager – DCM**. The window shown below is displayed. Right-mouse click on the D/82JCT board and select **Configure device** as shown below.

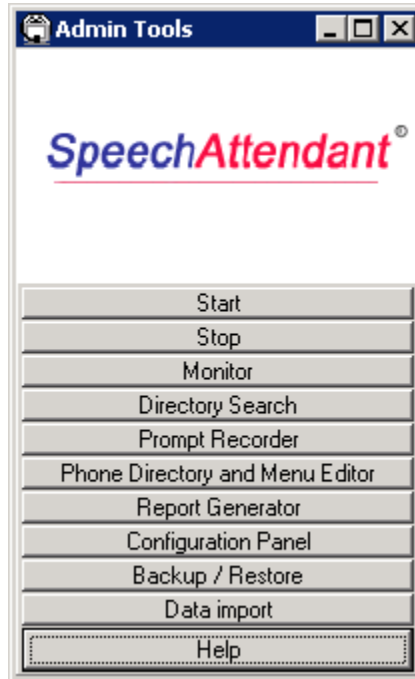


In the properties window shown below, select the **Misc** tab and set the **FirmwareFile** field to *D82UCSP.FWL* and set the **PBXSwitch** field to *Lucent\_2\_wire*. Click **OK**.

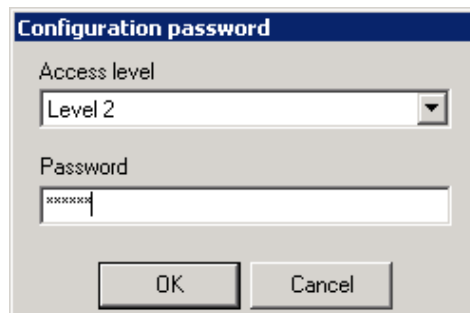


## 4.2. Configure Digital Interface in Configuration Panel

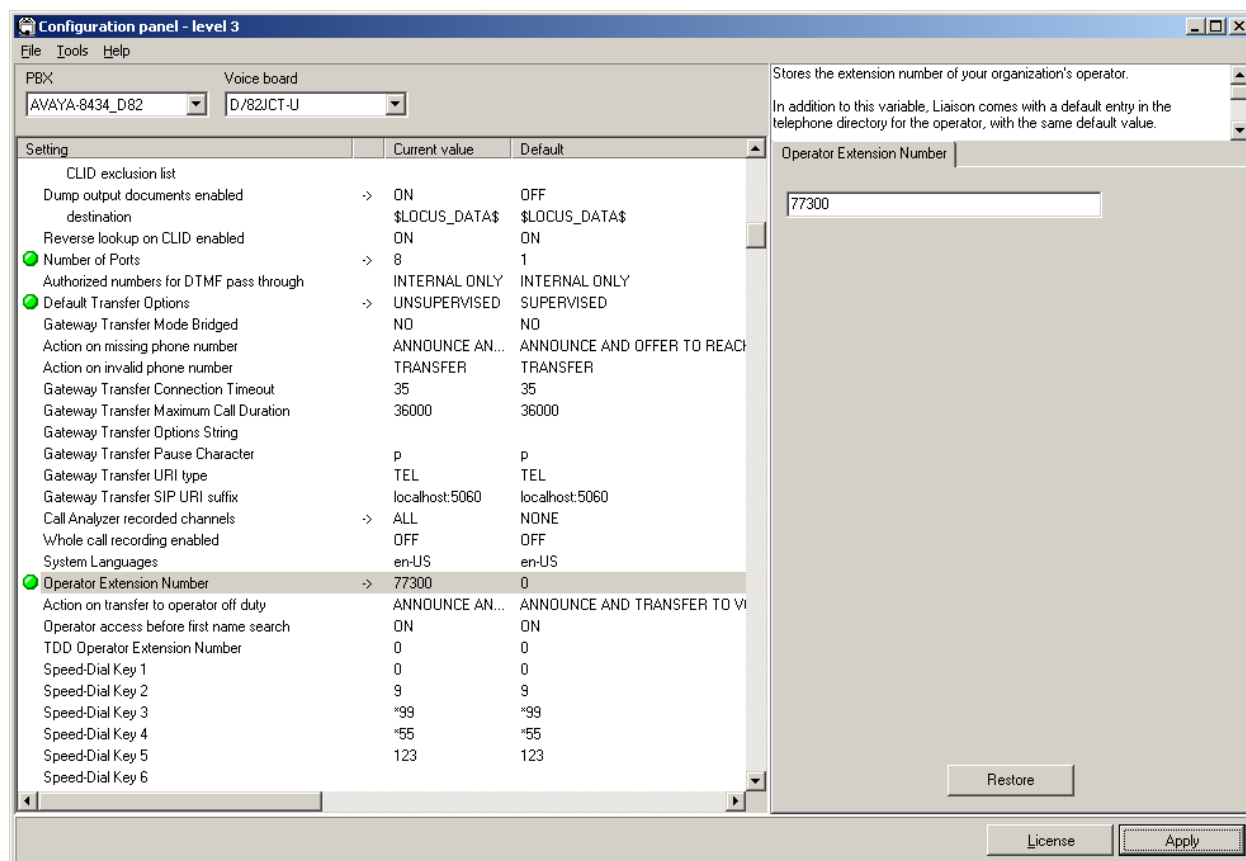
Nuance SA is configured through **Admin Tools** which can be started by navigating to **Start→Programs→Speech Attendant→Admin Tools**. The initial screen is displayed below.



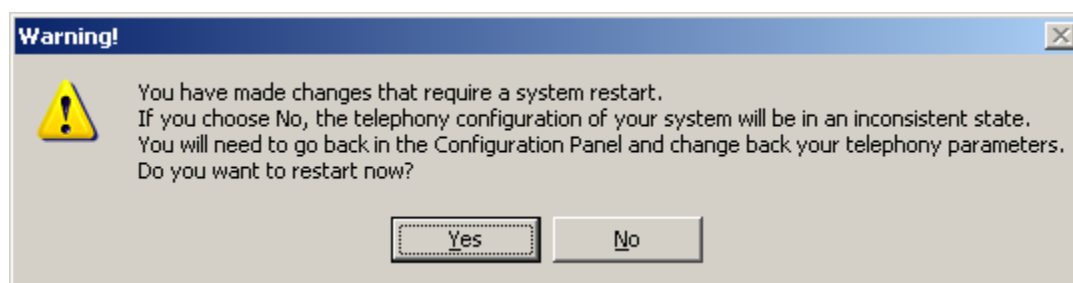
To open the **Configuration Panel**, click on this option in the **Admin Tools** window shown above. The login prompt will be displayed to the user as shown below. Log in with the appropriate credentials using *Level 2* access level.



The **Configuration Panel** shown below is displayed. The **Configuration Panel** allows the digital interface, transfer mode, and operator extension number to be configured. SA supports blind and supervised transfers. To configure the digital interface, set the **PBX** field to *AVAYA-8434\_D82* and the **Voice Board** field to *D/82JCT-U*. Next, set the **Number of Ports** supported. In this case, 8 ports are supported by the digital interface. The **Default Transfer Options** (supervised or unsupervised) and the **Operator Extension Number** is also configured here. Click **Apply**.



Next, close the **Configuration Panel**. Allow the system to restart when prompted by clicking **Yes** in the dialog box below.



### 4.3. Configure ACD Login Parameters

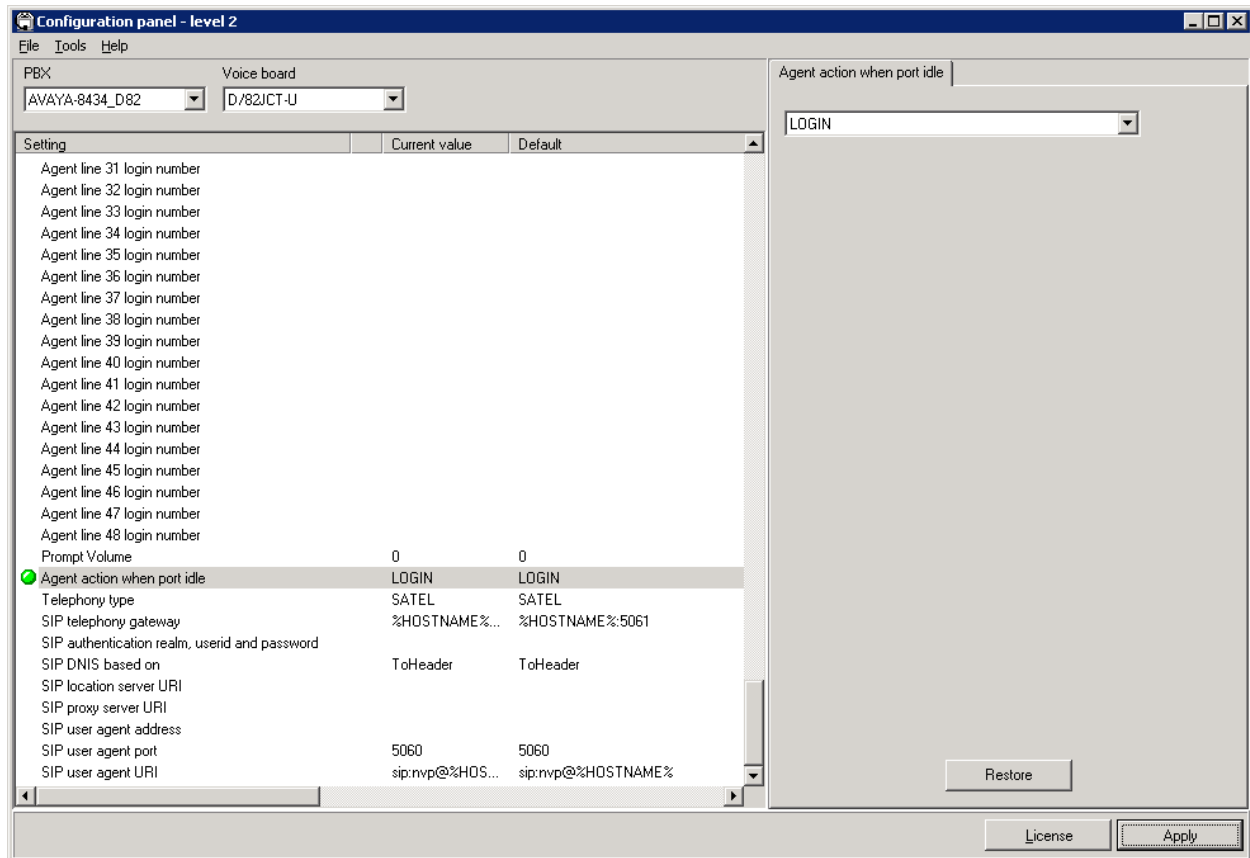
In the **Configuration Panel**, set the **Enable login agent** field to *YES* and set the **Agent line 1 login number** to the Agent Login-ID and password (e.g., agent login ID 26201 with password 26201 is entered as 2620126201). Repeat this for each agent line required on Nuance SA.

The screenshot shows the 'Configuration panel - level 2' window. At the top, there are dropdown menus for 'PBX' (set to 'AVAYA-8434\_D82') and 'Voice board' (set to 'D/82JCT-U'). Below these is a table of settings:

Setting	Current value	Default
9th DNIS Mask		
10th DNIS Mask		
1st CLID Mask		
2nd CLID Mask		
3rd CLID Mask		
4th CLID Mask		
5th CLID Mask		
6th CLID Mask		
7th CLID Mask		
8th CLID Mask		
9th CLID Mask		
10th CLID Mask		
Digital PBX logged out agent message on display		
Enable login agent	YES	NO
Nortel-M1 ACD Agent ID Login Mode	YES	YES
Agent line 1 login number	2620126201	
Agent line 2 login number		
Agent line 3 login number		
Agent line 4 login number		
Agent line 5 login number		
Agent line 6 login number		
Agent line 7 login number		
Agent line 8 login number		
Agent line 9 login number		
Agent line 10 login number		
Agent line 11 login number		
Agent line 12 login number		
Agent line 13 login number		
Agent line 14 login number		

On the right side of the window, there is a large text input field labeled 'Agent line 1 login number' containing the value '2620126201'. Below this field is a 'Restore' button. At the bottom of the window, there are 'License' and 'Apply' buttons.

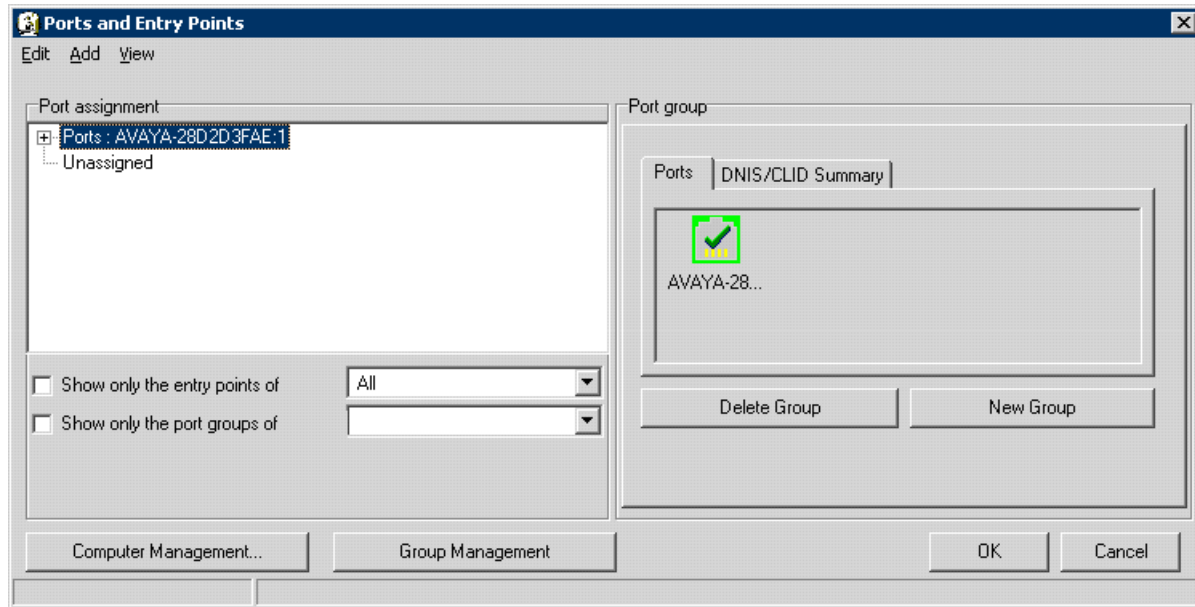
Scroll down and set the **Agent action when port idle** field to *LOGIN*. Close the **Configuration Panel**. Allow the system to restart when prompted.



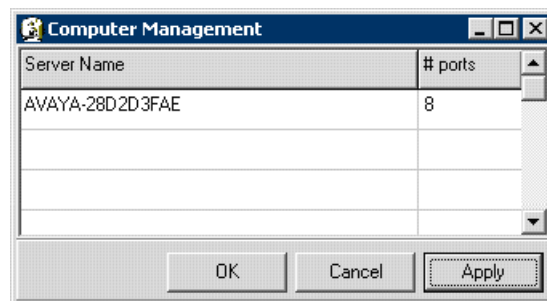
#### 4.4. Configure Number of Ports Supported

In the **Configuration Panel**, set the **Number of Ports** field was set to the desired value in the previous section. In this example, 8 ports are being configured.

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.

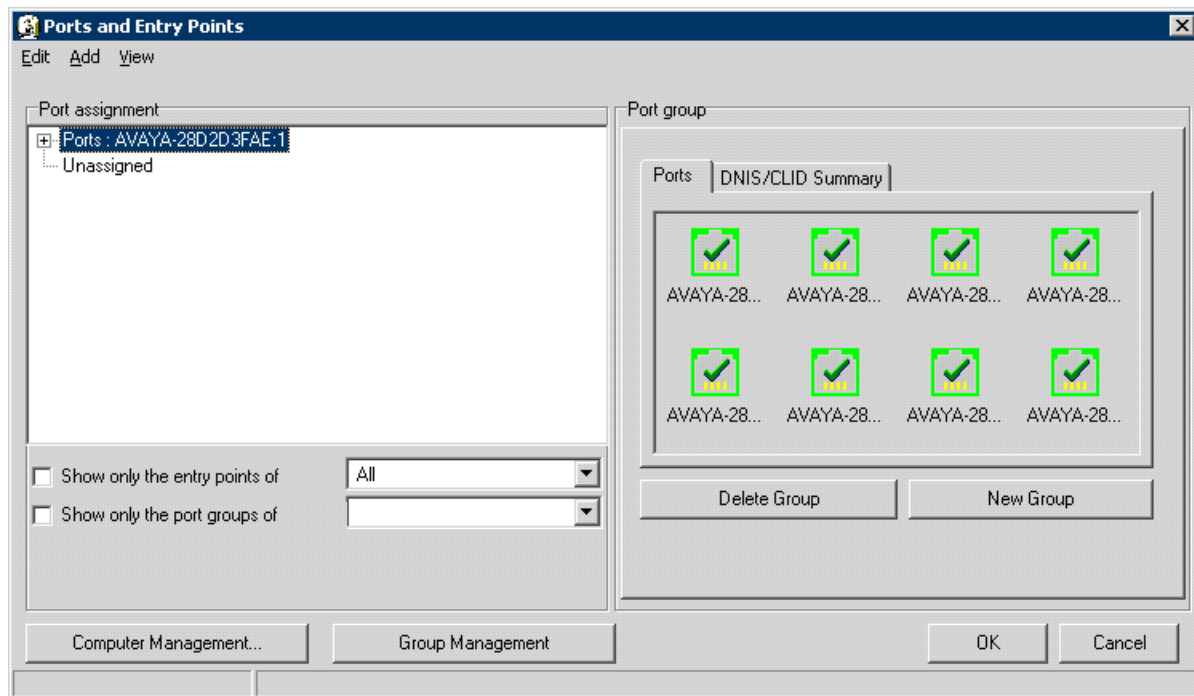


In the **Computer Management** window, set the **# ports** column to the desired value. In this example, 8 ports were configured. Click **OK**.





Under the Port group section of the **Ports and Entry Points** window, a list of ports in the system will be displayed. Make sure they are all green (enabled). If the ports are grey (disabled), click on each icon to enable them as shown below. Click **OK**.



## 5. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. 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 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.

All test cases passed with the following observations noted:

- For proper handling of the DNIS in Nuance SA, the VDN name must start with the extension number.
- For proper handling of the CLID in Nuance SA, the station name of the calling party must start with the extension number.

## 6. Verification Steps

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

1. From the Nuance SA server, open the SA Monitor from **Admin Tools** and login with the appropriate credentials. Verify that the channel(s) are logged into the hunt group. For example, the **Status** column should be set to *idle*, when logged in, as shown below.

**SpeechAttendant®**  
Hosted on **avaya-28d2d3fae**

**Description:** Auto Attendant **Version:** SA 11.0.0 (with E03) (latest hot fix installed 1100HF01, 1100HF02, 1100HF03, 1100HF04, 1100HF05)

**Sections**

- Summary status
- Reports
- Alarms
- OSA Servlet
  - Environment
  - Configuration
  - Installation log
  - Monitoring
- Replication Monitor
  - Replication Status
  - Replication Errors
- Call Logs

**System summary**

Uptime: 0 days 0 hours 4 minutes 49 seconds.

Served sessions: 1 total (1 currently in memory)

Served requests: 23

Telephony: 1 calls so far for avaya-28d2d3fae, no call in progress (concurrent peak 1, Mon Jan 24 07:26:21 PST 2011)

CHN	Status	Calls	DNIS	CLID	EP	Function	Menu
III	idle	1	...	...	...	...	...
III	logged out	...	...	...	...	...	...
III	out	...	...	...	...	...	...
III	out	...	...	...	...	...	...
III	out	...	...	...	...	...	...
III	out	...	...	...	...	...	...
III	out	...	...	...	...	...	...
III	out	...	...	...	...	...	...

- Place a call to Nuance SA. From the Nuance SA server, open the SA Monitor from **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 avaya-28d2d3fae

**Description:** Auto Attendant **Version:** SA 11.0.0 (with E03) (latest hot fix installed 1100HF01, 1100HF02, 1100HF03, 1100HF04, 1100HF05)

**Sections**

- Summary status
- Reports
- Alarms
- OSA Servlet
  - Environment
  - Configuration
  - Installation log
  - Monitoring
- Replication Monitor
  - Replication Status
  - Replication Errors
- Call Logs

**CALL LOGS**

Select period:  
Date from: 11/30/2010  
Date to: 11/30/2010

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

all types last 50 calls Submit

**Logs (from database), 33 sessions**

Call start	DNIS	CLID	Call complexity	Call duration	Error	Termination code	Destination	System comment	Tagging
30/11/2010 11:59:26	22006	77304	0	0		...		in progress	
30/11/2010 11:59:13	22005	77304	0	8		HG	Toplevel Menu	caller hangup	
30/11/2010 11:58:47	22005	77301	25	19		SRI3	Kent, Clark	transfer completed	
30/11/2010 11:58:26	22005	77303	5	15		SRI1	Croft, Lara	transfer completed	
30/11/2010 11:57:42	22005	77302	5	34		SRI1	Cane, Linda	transfer completed	
30/11/2010 11:40:22	22005	77303	0	9		HG	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.

## 7. Conclusion

These Application Notes describe the configuration steps required to integrate Nuance Speech Attendant with Avaya Aura® Communication Manager using digital integration. All feature and serviceability test cases were completed successfully.

## 8. 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*, June 2010, Release 6.0, Issue 6.0, Document Number 03-300509.

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