



Avaya Solution & Interoperability Test Lab

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
- **Email:** 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.

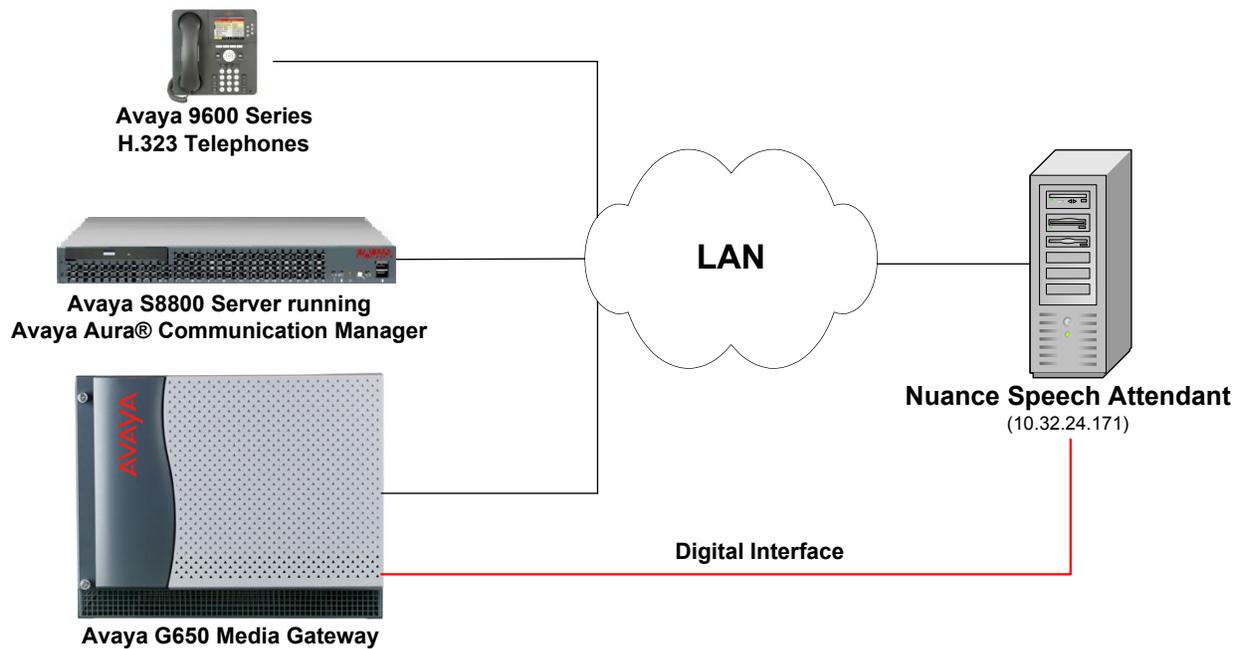


Figure 1: Configuration with Nuance Speech Attendant and Avaya Aura® Communication Manager using a Digital Interface

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 data-bbox="196 569 659 604">▪ TN2224B – 2-Wire Digital Line	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
  Type: 8434D                                       Security Code:           TN: 1
  Port: 01A0601                                    Coverage Path 1:        COR: 1
  Name: Nuance SA Port 1                            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
Survivable COR: internal                          Expansion Module? n
Survivable Trunk Dest? y                          Media Complex Ext:
                                                    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: auto-in           Grp:
2: call-appr                                     7: aux-work          RC:   Grp:
3: call-appr                                     8: autodial        *16
4:                                               9: autodial        *15
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
      Group Extension: 77000                          Vector? y
      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
      Skill? y      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
Name: Nuance SA Port 1                                    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
Password: 26201
Password (enter again): 26201
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          SN  RL  SL          SN  RL  SL          SN  RL  SL
1: 270   1          16:          31:          46:
2:          17:          32:          47:
3:          18:          33:          48:
4:          19:          34:          49:
5:          20:          35:          50:
6:          21:          36:          51:
7:          22:          37:          52:
8:          23:          38:          53:
9:          24:          39:          54:
10:         25:          40:          55:
11:         26:          41:          56:
12:         27:          42:          57:
13:         28:          43:          58:
14:         29:          44:          59:
15:         30:          45:          60:

```

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

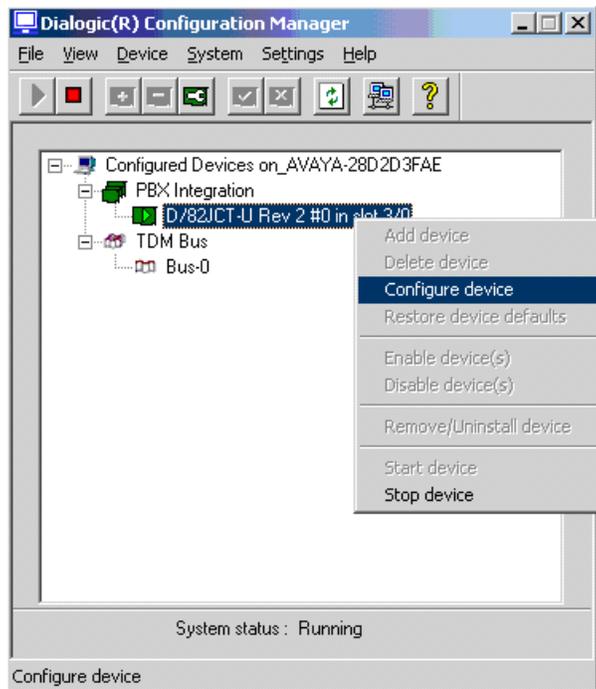
This section covers the procedure for configuring Nuance Speech Attendant (SA). The procedure includes the following areas:

- 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

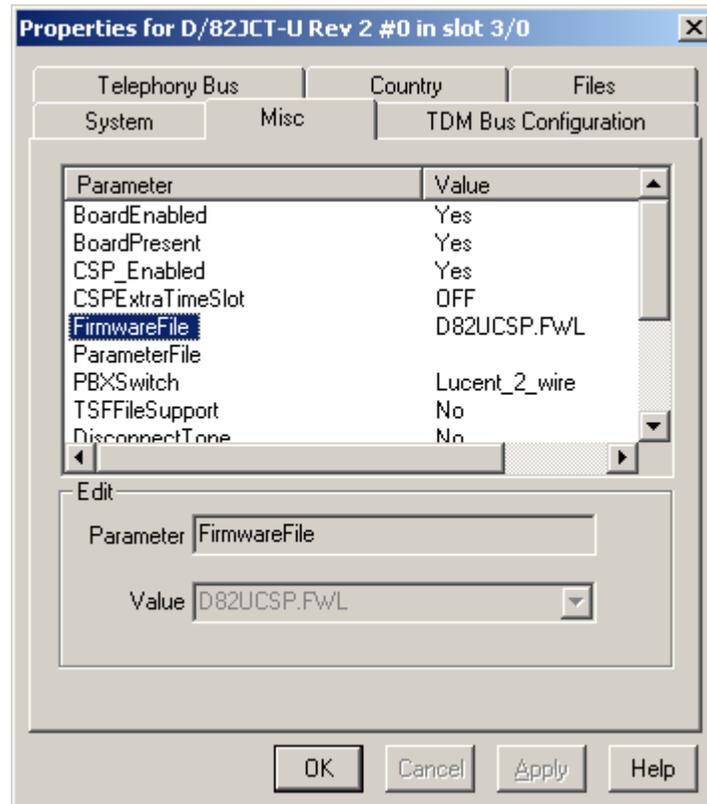
Note: Configuration of transfer entries and menus in Nuance SA is outside the scope of these Application Notes and will not be covered.

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

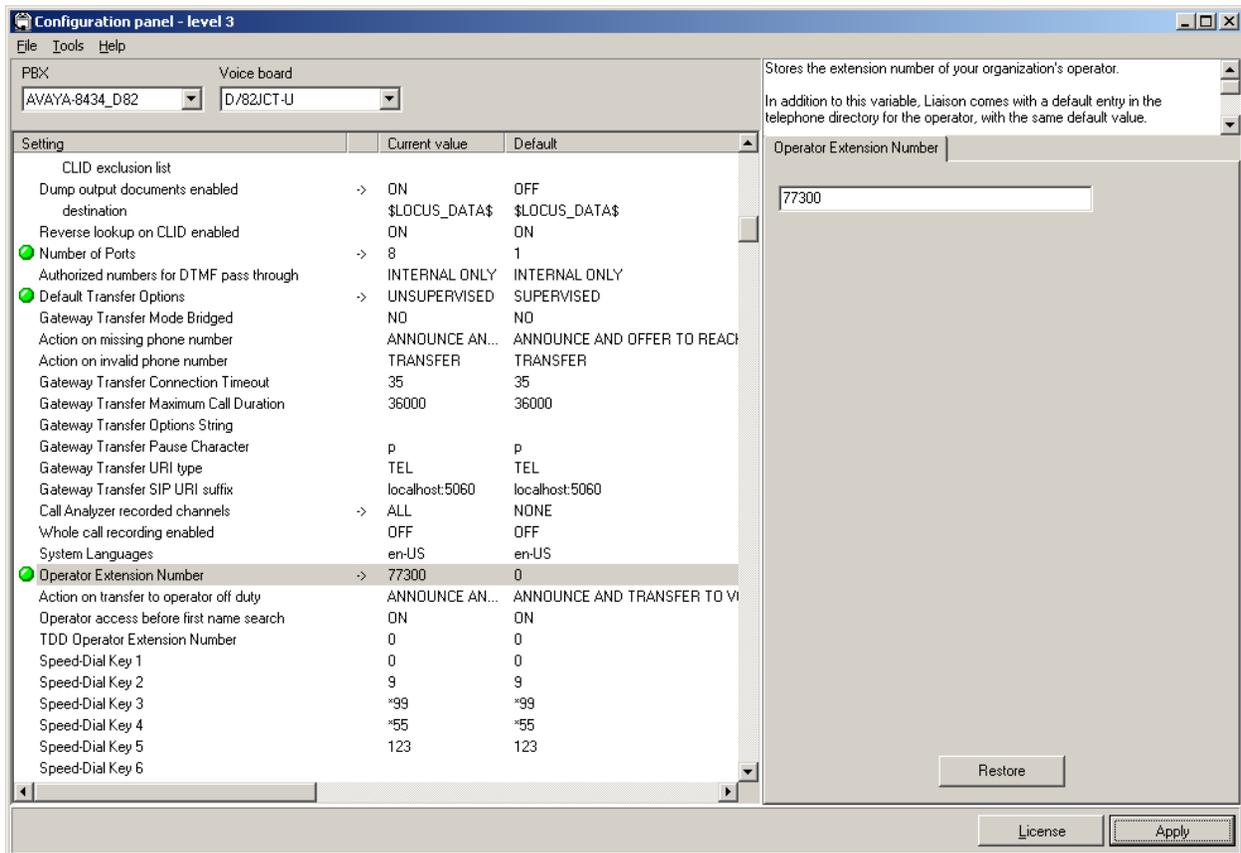
Nuance SA is configured through **Admin Tools** which can be started by navigating to **Start→Programs→Speech Attendant→Admin Tools**. The initial screen is displayed below.



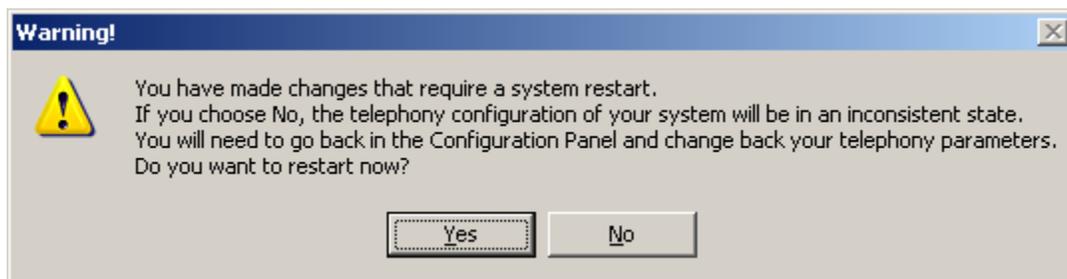
To open the **Configuration Panel**, click on this option in the **Admin Tools** window shown above. The login prompt will be displayed to the user as shown below. Log in with the appropriate credentials using *Level 2* access level.



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**.

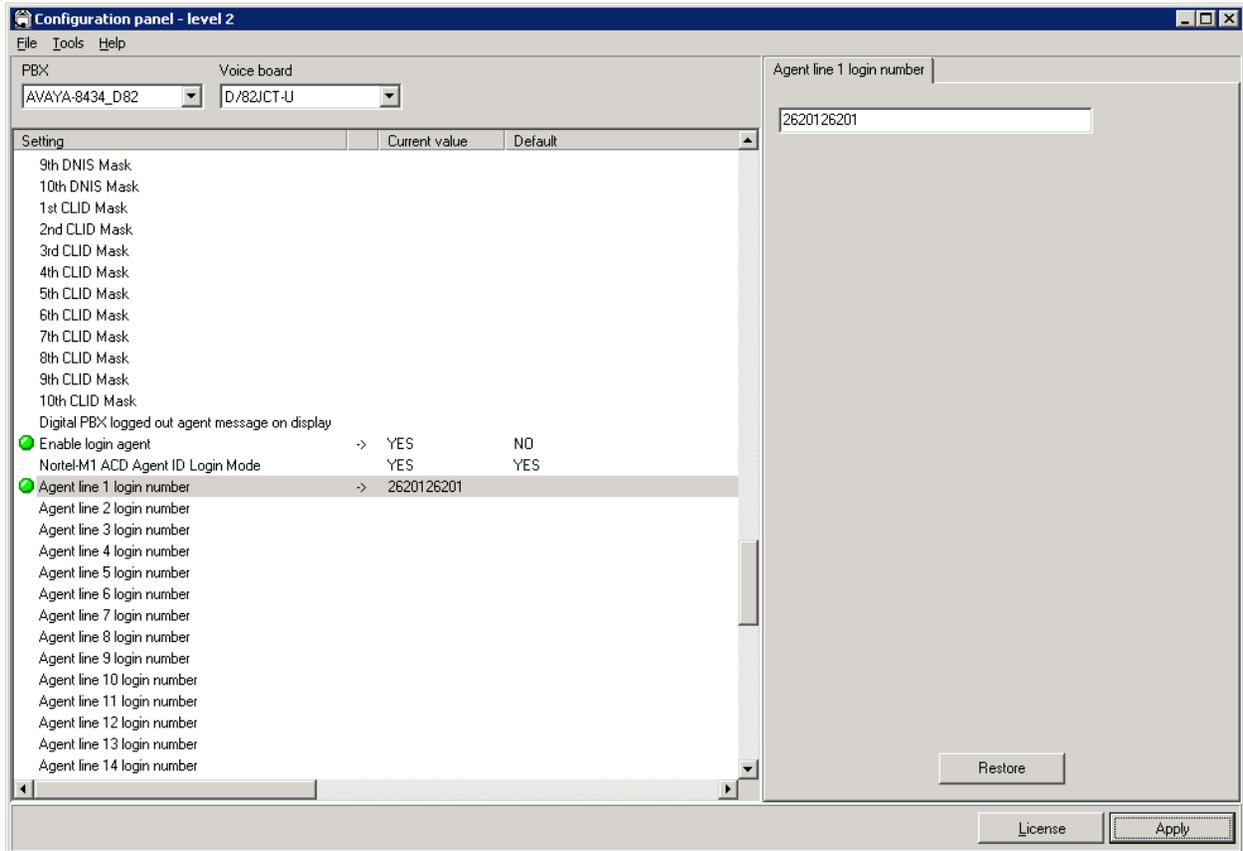


Next, close the **Configuration Panel**. Allow the system to restart when prompted by clicking **Yes** in the dialog box below.

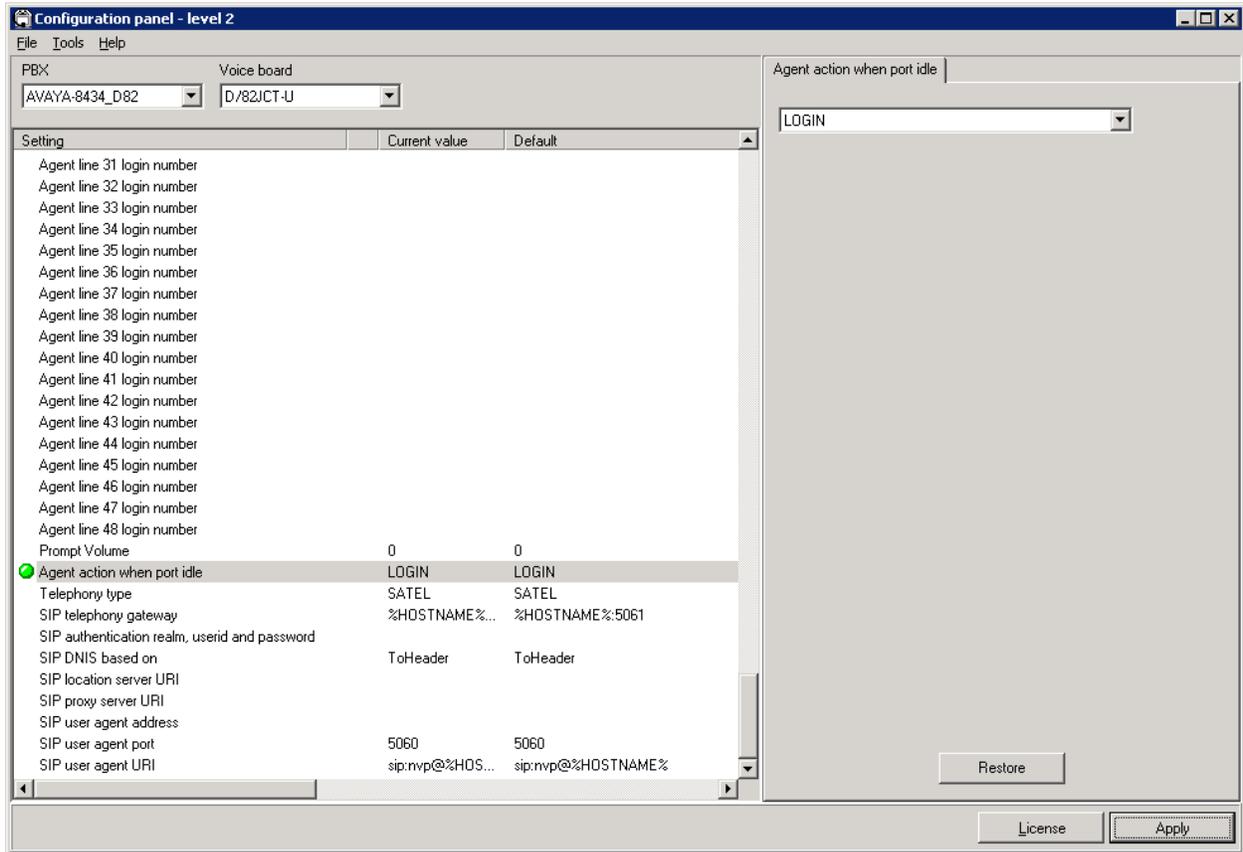


4.3. Configure ACD Login Parameters

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.



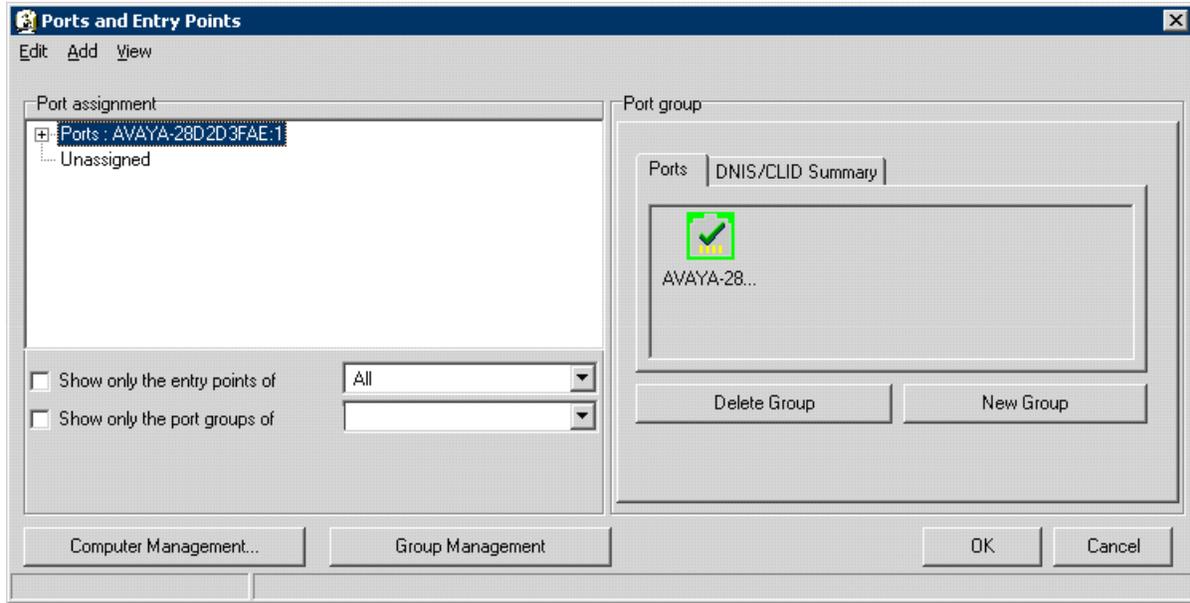
Scroll down and set the **Agent action when port idle** field to *LOGIN*. Close the **Configuration Panel**. Allow the system to restart when prompted.



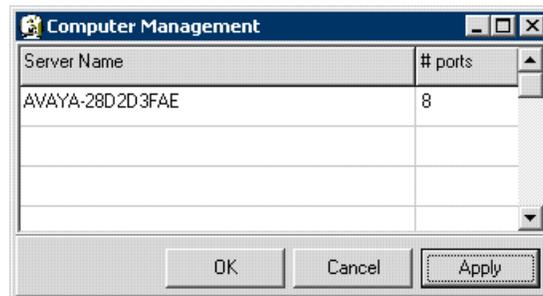
4.4. Configure Number of Ports Supported

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.

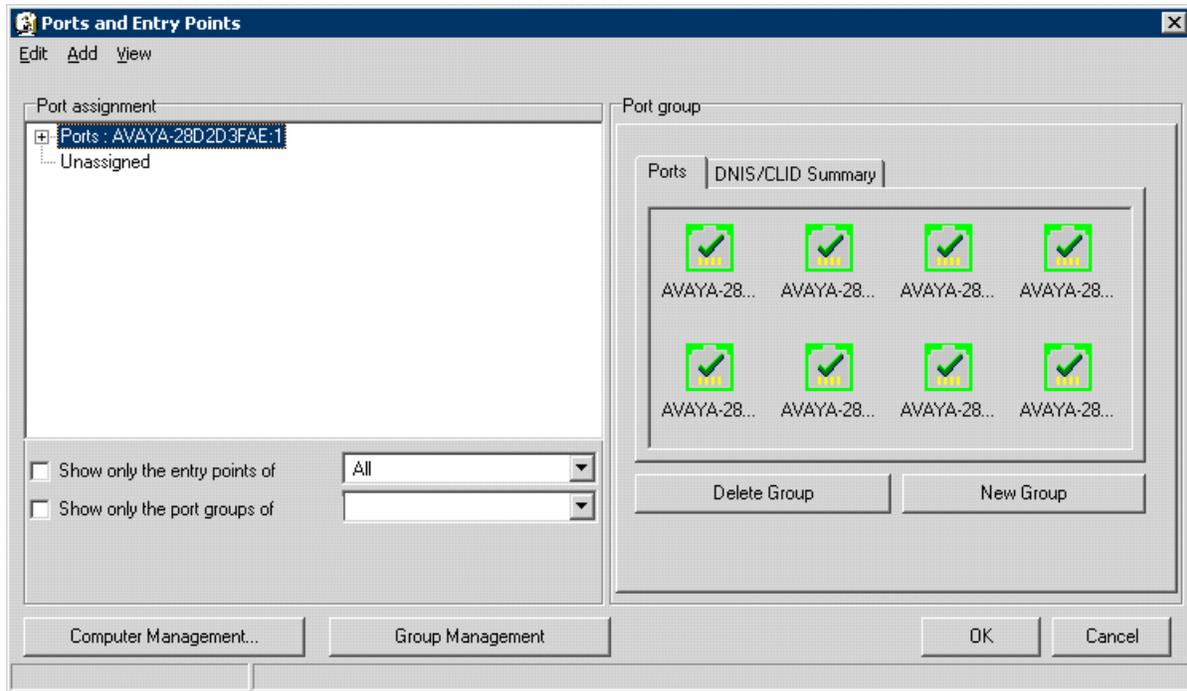
From **Admin Tools**, click on the **Phone Directory and Menu Editor** option and login with the appropriate credentials. In the **Menu Editor** (not shown), navigate to **Edit→Ports and Entry Points** to display the window below. Once the **Ports and Entry Points** window is opened, click on the **Computer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

avaya-28d2d3fae									
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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