Avaya Solution & Interoperability Test Lab

Application Notes for Digital Speech Systems Windows Voice Call Logger with Avaya Communication Manager using T1/ISDN-PRI Trunk – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Digital Speech Systems Windows Voice Call Logger (WinVCL) to interoperate with Avaya Communication Manager.

The WIN VCL is a versatile voice call recording system that offers various recordings with playback and archiving features and options.

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 WIN VCL is a versatile voice call recording system that offers various recordings with playback and archiving features and options. It may be set to record all calls at all times, be programmed to do selective/random recordings based on a set criteria (time, date, dialed number, etc.), or Real-time call monitoring by a supervisor.

The WIN VCL can be connected to a monitored radio and phone systems via incoming T1/ISDN-PRI trunks, analog lines, and analog or digital PBX extensions, VoIP span ports.

Each T1/ISDN-PRI trunk needs to have a tap point installed between the Central Office (CO) and a PBX using an RJ45 T-splitter adaptor or by installing a dual RJ45 jack. A T1 cross-over network cable then be connected to the tap point on one end, and the other end would be connected to the SmartTAP DP board in the WinVCL server. During the compliance test, Avaya S8300 Server with Avaya G700 Media Gateway simulated the CO, and Avaya S8700 Server with Avaya G650 Media Gateway simulated PBX. The WIN VCL monitors and records PBX side.

Figure 1 provides the test configuration used for the compliance testing.

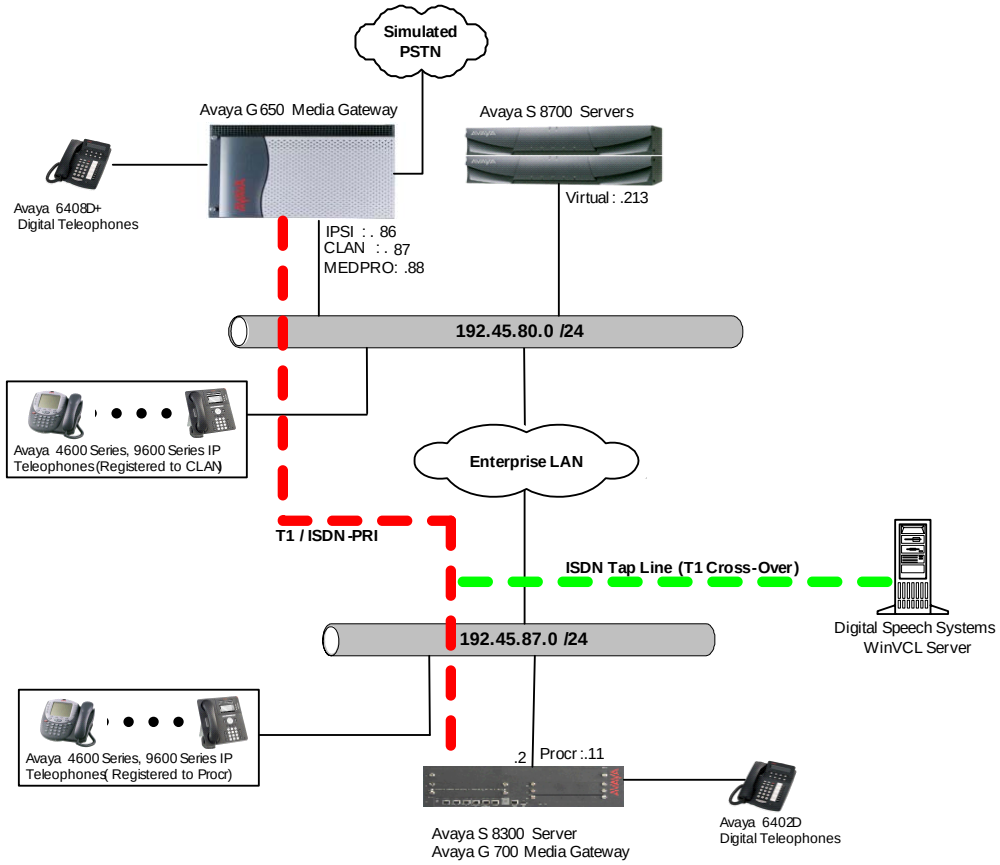


Figure 1: Digital Speech Systems WinVCL with Avaya Communication Manager

2. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya S8700 Servers		Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya G650 Media Gateway		
	TN2312BP IP Server Interface TN799DP CLAN Interface TN2302AP IP Media Processor	HW11 FW030 HW01 FW017 HW20 FW108
Avaya S8300 Media Server with Avaya G700 Media Gateway		Avaya Communication Manager 4.0.1 (R014x.00.1.731.2)
Avaya 4600 Series IP Telephones		
	4620 (H.323) 4625 (H.323)	2.704 2.8
Avaya 9600 Series IP Telephones		
	9630 (H.323) 9650 (H.323)	1.5 1.5
Avaya 6400D Series Digital Telephones		-
Avaya C363T-PWR Converged Stackable Switch		4.5.14
Extreme Networks Summit 48		4.1.21
Digital Speech Systems WinVCL		3.2.3

3. Configure Avaya Communication Manager

This section provides the procedures for configuring hunt/skill groups, vectors, Vector Directory Numbers (VDN), agents, agent login/logoff codes, and DS1 circuit pack on Avaya Communication Manager. All the configuration changes in Avaya Communication Manager are performed through the System Access Terminal (SAT) interface. The highlights in the following screens indicate the values used during the compliance test. For the compliance testing, the following contact center devices were used.

Device Type	Device Number/Extension
VDN	50000
Vector	11
Skill group	11
Logical agent IDs	50021, 50022, 50023, 50024
Agent stations	22001, 22002, 22003, 22007

3.1. Hunt/Skill Groups, Agent Logins, and Call Vectoring

Enter the **display system-parameters customer-options** command. On Page 6, verify that the ACD and Vectoring (Basic) fields are set to **y**. If not, contact an authorized Avaya account representative to obtain these licenses.

```
display system-parameters customer-options                    Page   6 of  11
                        CALL CENTER OPTIONAL FEATURES

                         Call Center Release: 3.0

                                  ACD? y                      Reason Codes? n
                        BCMS (Basic)? y             Service Level Maximizer? n
        BCMS/VuStats Service Level? n            Service Observing (Basic)? y
  BSR Local Treatment for IP & ISDN? n     Service Observing (Remote/By FAC)? y
                  Business Advocate? n              Service Observing (VDNs)? n
                    Call Work Codes? n                          Timed ACW? N

      DTMF Feedback Signals For VRU? n                   Vectoring (Basic)? y
                   Dynamic Advocate? n                Vectoring (Prompting)? n
       Expert Agent Selection (EAS)? n              Vectoring (G3V4 Enhanced)? n
                            EAS-PHD? n               Vectoring (3.0 Enhanced)? n
                  Forced ACD Calls? n     Vectoring (ANI/II-Digits Routing)? n
              Least Occupied Agent? n     Vectoring (G3V4 Advanced Routing)? n
          Lookahead Interflow (LAI)? n                    Vectoring (CINFO)? n
Multiple Call Handling (On Request)? n      Vectoring (Best Service Routing)? n
    Multiple Call Handling (Forced)? n                 Vectoring (Holidays)? n
  PASTE (Display PBX Data on Phone)? n                 Vectoring (Variables)? n
        (NOTE: You must logoff & login to effect the permission changes.)
```

Enter the **add hunt-group n** command; where **n** is an unused hunt group number. On Page 1 of the hunt-group form, assign a descriptive Group Name and Group Extension valid in the provisioned dial plan. Set the ACD, Queue, and Vector fields to **y**. When ACD is enabled, hunt group members serve as ACD agents and must log in to receive ACD split/skill calls. When Queue is enabled, calls to the hunt group will be served by a queue. When Vector is enabled, the hunt group will be vector controlled.

```
add hunt-group 11                                             Page   1 of   3

                                  HUNT GROUP

           Group Number: 11                                 ACD? y
             Group Name: Test                             Queue? y
        Group Extension: 50091                           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, set the Skill field to **y**, which means that agent membership in the hunt group is based on skills, rather than pre-programmed assignment to the hunt group.

```
add hunt-group 11                                              Page   2 of   3

                                HUNT GROUP

                   Skill? y
                     AAS? n
                Measured: internal
     Supervisor Extension:


      Controlling Adjunct: none


        VuStats Objective:



                                     Redirect on No Answer (rings): 3
                                                   Redirect to VDN:
                  Forced Entry of Stroke Counts or Call Work Codes? n
```

Enter the **add agent-loginID p** command, where **p** is a valid extension in the provisioned dial plan. On Page 1 of the agent-loginID form, enter a descriptive Name and Password.

```
add agent-loginID 50021                                        Page   1 of   2

                                AGENT LOGINID

               Login ID: 50021                                    AAS? n
                   Name: Agent-50021                            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 Display? n
                                                       Password: 1234
                                            Password (enter again): 1234
                                                     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


    WARNING:  Agent must log in again before changes take effect
```

On Page 2, set the Skill Number (**SN**) to the hunt group number previously created. The Skill Level (**SL**) may be set according to customer requirements.

Repeat this step as necessary to configure additional agent extensions.

```
add agent-loginID 50021                                        Page   2 of   2

                                  AGENT LOGINID
      Direct Agent Skill:
Call Handling Preference: skill-level              Local Call Preference? n

    SN      SL          SN      SL          SN      SL          SN      SL
 1: 11       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:
```

Enter the **add vector q** command, where **q** is an unused vector number. Enter a descriptive Name, and program the vector to deliver calls to the hunt/skill group number. Agents that are logged into the hunt/skill group will be able to answer calls queued to the hunt/skill group.

```
add vector 11                                                  Page   1 of   3

                                  CALL VECTOR

    Number: 11                Name: Queue to skill1
                                        Meet-me Conf? n              Lock? n
     Basic? y   EAS? y   G3V4 Enhanced? n   ANI/II-Digits? n   ASAI Routing? y
 Prompting? n   LAI? n  G3V4 Adv Route? n   CINFO? n   BSR? n   Holidays? n
 Variables? n   3.0 Enhanced? n
01 wait-time     2   secs hearing ringback
02 queue-to      skill 11    pri m
03
04
05
06
07
08
09
10
11

                        Press 'Esc f 6' for Vector Editing
```

Enter the **add vdn r** command, where **r** is an extension valid in the provisioned dial plan. Specify a descriptive Name for the VDN and the **Vector Number** configured in the previous step. In the example below, incoming calls to the extension 50000 will be routed to VDN 50000, which in turn will invoke the actions specified in vector 11.

```
add vdn 50000                                                Page   1 of   2

                             VECTOR DIRECTORY NUMBER

                               Extension: 50000
                                    Name: VDN-50000
                          Vector Number: 11

                     Meet-me Conferencing? n
                       Allow VDN Override? n
                                     COR: 1
                                      TN: 1
                               Measured: internal

                               1st Skill:
                               2nd Skill:
                               3rd Skill:
```

Enter the **change feature-access-codes** command. Define the Auto-In Access Code, Login Access Code, Logout Access Code, and Aux Work Access Code.

```
change feature-access-codes                                  Page   5 of   6
                                FEATURE ACCESS CODE (FAC)

                            Automatic Call Distribution Features

                        After Call Work Access Code: 120
                                Assist Access Code: 121
                              Auto-In Access Code: 122
                             Aux Work Access Code: 123
                                Login Access Code: 124
                               Logout Access Code: 125
                             Manual-in Access Code: 126
     Service Observing Listen Only Access Code: 127
     Service Observing Listen/Talk Access Code: 128
                        Add Agent Skill Access Code: 130
                     Remove Agent Skill Access Code: 131
              Remote Logout of Agent Access Code: 132
```

Enter the **add abbreviated-dialing group g** command, where **g** is the number of an available abbreviated dialing group. In the DIAL CODE list, enter the Feature Access Codes, created previously, for ACD Login and Logout.

```
add abbreviated-dialing group 1                              Page   1 of   1
                        ABBREVIATED DIALING LIST

              Group List: 1        Group Name: Call Center
    Size (multiple of 5): 5       Program Ext:               Privileged? n
DIAL CODE
     11: 124
     12: 125
     13:
     14:
     15:
```

3.2. Administer DS1 Circuit Pack

This section describes the configuration steps of Avaya Communication manager for a T1/ISDN-PRI trunk. During the compliance test, the T1/ISDN-PRI trunk was configured between an Avaya S8700 Server with G650 Media Gateway and an Avaya S8300 Server with G350 Media Gateway.

3.2.1. Configure DS1 Circuit Pack in G650 Media Gateway

Enter the **list configuration all** command, and note the Board Number for the DS1 circuit pack to be configured.

```
list configuration all                                          Page   3

                              SYSTEM CONFIGURATION

Board                                                Assigned Ports
Number    Board Type              Code     Vintage   u=unassigned t=tti p=psa

01A10     DS1 INTERFACE           TN464F   000018    01 02 03 04 05 06 07 08
                                                     09 10 u  u  u  u  u  u
                                                     u  u  u  u  u  u  u  24
                                                     u  u  u  u  u  u  u  u
01A11     ANALOG LINE             TN793B   000005    u  u  u  u  u  u  u  u
                                                     u  u  u  u  u  u  u  u
                                                     17 18 19 20 u  u  u  u
```

Enter the **add ds1 x** command, where **x** is the board number of the DS1 circuit pack noted above. Enter a descriptive Name and set the other highlighted fields below to the values indicated.

- Name: A descriptive name.
- Line Coding: **b8zs**
- Frame Mode: **esf**
- Signaling Mode: **isdn-pri**
- Connect: **pbx**
- Interface: **user**

```
add ds1 1a10                                                  Page   1 of   2
                              DS1 CIRCUIT PACK

            Location: 01A10                          Name: DigitalSpeech
            Bit Rate: 1.544                    Line Coding: b8zs
   Line Compensation: 1                        Framing Mode: esf
      Signaling Mode: isdn-pri
             Connect: pbx                         Interface: user
   TN-C7 Long Timers? n                   Country Protocol: 1
Interworking Message: PROGress            Protocol Version: a
Interface Companding: mulaw                          CRC? n
           Idle Code: 11111111
                              DCP/Analog Bearer Capability: 3.1kHz

                                          T303 Timer(sec): 4


      Slip Detection? n                 Near-end CSU Type: other
```

3.2.2. Configure DS1 Circuit Pack in G350 Media Gateway

Enter the **list configuration all** command, and note the Board Number for the DS1 circuit pack to be configured.

```
list configuration all

                              SYSTEM CONFIGURATION

Board                                                    Assigned Ports
Number    Board Type              Code     Vintage    u=unassigned t=tti p=psa

001V1     ICC MM                   S8300B  HW04 FW001
001V2     DS1 MM                   MM710AP HW05 FW018 01 02 03 04 05 06 07 08
                                                      09 10 u  u  u  u  u  16
                                                      u  u  u  u  u  u  u  u
                                                      u  u  u  u  u  u  u  u
001V3     DCP MM                   MM712AP HW07 FW007 01 u  u  u  u  u  u  u
001V4     ANA MM                   MM711AP HW27 FW068 01 u  u  u  u  u  u  u
```

Enter the **add ds1 x** command, where **x** is the board number of the DS1 circuit pack noted above. Enter a descriptive Name and set the other highlighted fields below to the values indicated.

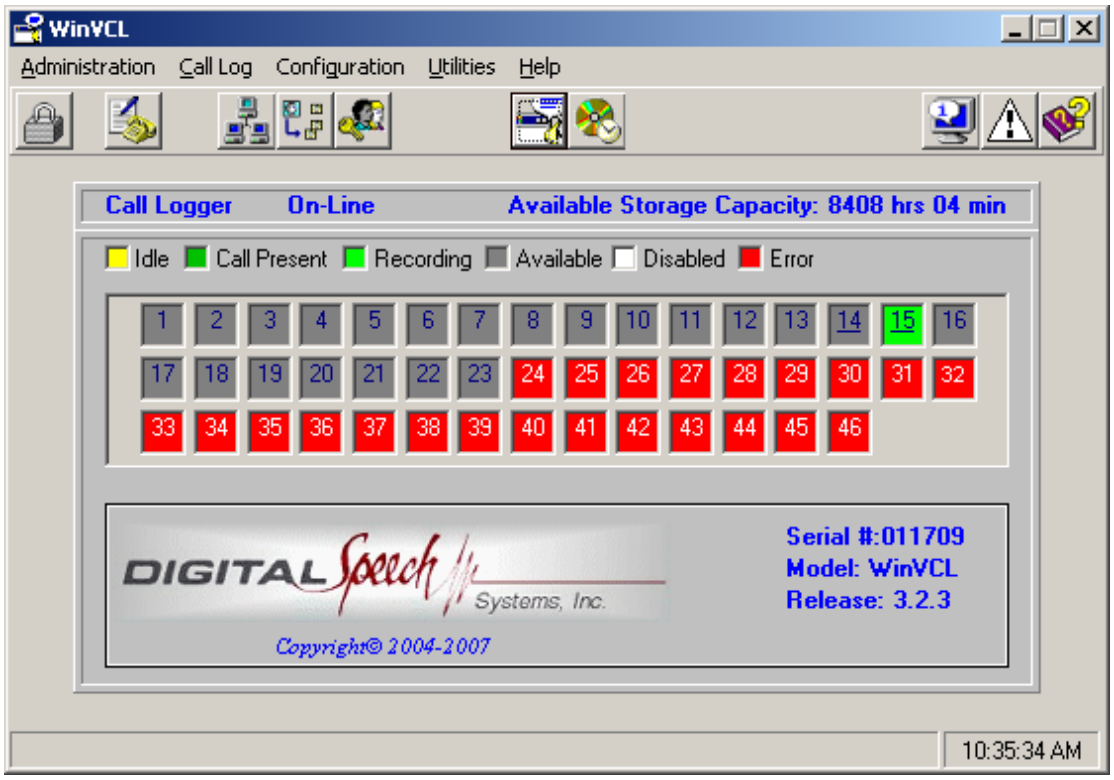
- Name: A descriptive name.
- Line Coding: **b8zs**
- Frame Mode: **esf**
- Signaling Mode: **isdn-pri**
- Connect: **pbx**
- Interface: **Network**

```
add ds1 1v2                                                  Page   1 of   2
                              DS1 CIRCUIT PACK

            Location: 01A10                          Name: DigitalSpeech
            Bit Rate: 1.544                    Line Coding: b8zs
   Line Compensation: 1                       Framing Mode: esf
      Signaling Mode: isdn-pri
             Connect: pbx                        Interface: Network
   TN-C7 Long Timers? n                   Country Protocol: 1
Interworking Message: PROGress            Protocol Version: a
Interface Companding: mulaw                           CRC? n
           Idle Code: 11111111
                             DCP/Analog Bearer Capability: 3.1kHz

                                          T303 Timer(sec): 4


      Slip Detection? n                Near-end CSU Type: other
```

4. Configure Digital Speech Systems WinVCL

Digital Speech System installs, configures, and customizes the WinVCL application for their end customers. When Digital Speech Systems engineer installs the WinVCL software, the engineer typically configures the WinVCl for the auto startup mode. Therefore, when the WinVCL server comes up, the following window will display.

The 23 grey blocks displays T1/ISDN-PRI trunk channels. Notice that the 15th channel is turned green. That means, there is voice traffic on that channel, and the voice is being recorded. When the channel is freed, the block will go back to grey, indicating the channel is ready to be recorded.



5. Interoperability Compliance Testing

The interoperability compliance test included feature, serviceability, and performance testing. The feature testing evaluated the ability of Digital Speech Systems WinVCL to monitor and record calls placed to and from stations and agents. The serviceability testing introduced failure scenarios to see if Digital Speech Systems WinVCL can resume recording after failure recovery. The performance testing stressed Digital Speech Systems WinVCL by continuously placing calls over extended periods of time.

5.1. General Test Approach

All test cases were performed manually. The general approach was to place various types of calls to and from stations, and agents. Those trunk calls then monitored and recorded using

Digital Speech Systems WinVCL, and verify the recordings. For feature testing, the types of calls included inbound and outbound trunk calls, transferred calls, bridged calls, and conferenced calls. Performance tests verified that Digital Speech Systems WinVCL could record calls during a sustained, high volume of calls. For serviceability testing, failures such as cable pulls, busyouts/releases of the DS1 trunk group, and resets were applied.

5.2. Test Results

All test cases were executed and passed.

6. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager and Digital Speech Systems WinVCL.

Verify the status of the administered trunk group by using the **status trunk n** command, where **n** is the trunk group number administered. Verify that the trunks are in the "in-service/idle" state.

7. Support

Technical support on the WinVCL can be obtained through the following:

- **Phone:** (972) 235-2999 (Press 2)
- **Web:** http://www.digitalspeech.com/support

8. Conclusion

These Application Notes describe the configuration steps required for Digital Speech Systems WinVCL 3.2.3 to interoperate with Avaya Communication Manager 4.01. All feature and serviceability test cases were completed.

9. Additional References

This section references the Avaya and Digital Speech Systems product documentation that are relevant to these Application Notes.

- *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 3.1, February 2007, available at http://support.avaya.com.

- *WinVCL Server – Avaya AES Integration Application Guide*, 3.2.3, September 12, 2007

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.