AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for Spescom DataVoice Orion Recorder 9.6 and Recording Controller 3.4 Passive Tapping Trunk Side Recording with Avaya Communication Manager 3.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Spescom DataVoice Orion Recorder 9.6 and Recording Controller 3.4 to successfully interoperate with Avaya Communication Manager 3.0

The DataVoice call recording solution is able to capture audio from Avaya Communication Manager using a variety of integration mechanisms. Only trunk side call recording was tested and verified. DataVoice Recording Controller uses Avaya Adjunct Switch Application Interface (ASAI) to extract call event information and passive tapping of the E1 trunk to retrieve the audio. The test configuration consisted of an Avaya S8500 Media Server with an Avaya G650 Media Gateway running Avaya Communication Manager 3.0, and an Avaya Application Enablement Services (AES) Server.

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

HJP; Reviewed:
SPOC 11/21/2005
Solution & Interoperability Test Lab Application Notes
©2005 Avaya Inc. All Rights Reserved.
1 of 22
DataVoiceACMtrk.doc

1. Introduction

These Application Notes describe the compliance-tested comprised of Avaya Communication Manager, Avaya Application Enablement Services (AES) server, DataVoice Orion Recorder and a DataVoice Recording Controller.

The current release of the Orion Recording Solution supports passive trunk tapping and passive analogue station tapping. Only trunk side call recording was tested and verified. The DataVoice Recording Controller provides connectivity between the DataVoice Orion Recorder and Avaya Communication Manager. The Avaya AES server using Avaya Adjunct Switch Application Interface (ASAI) notifies the DataVoice Recording Controller at the start of a call, the external trunk and time-slot information is provided. The DataVoice Recording Controller uses the information to map the trunk and timeslot to a recorder line and starts the recording. Avaya AES server notifies the DataVoice Recording Controller when the call has been terminated and DataVoice Recording Controller then stops the recording.
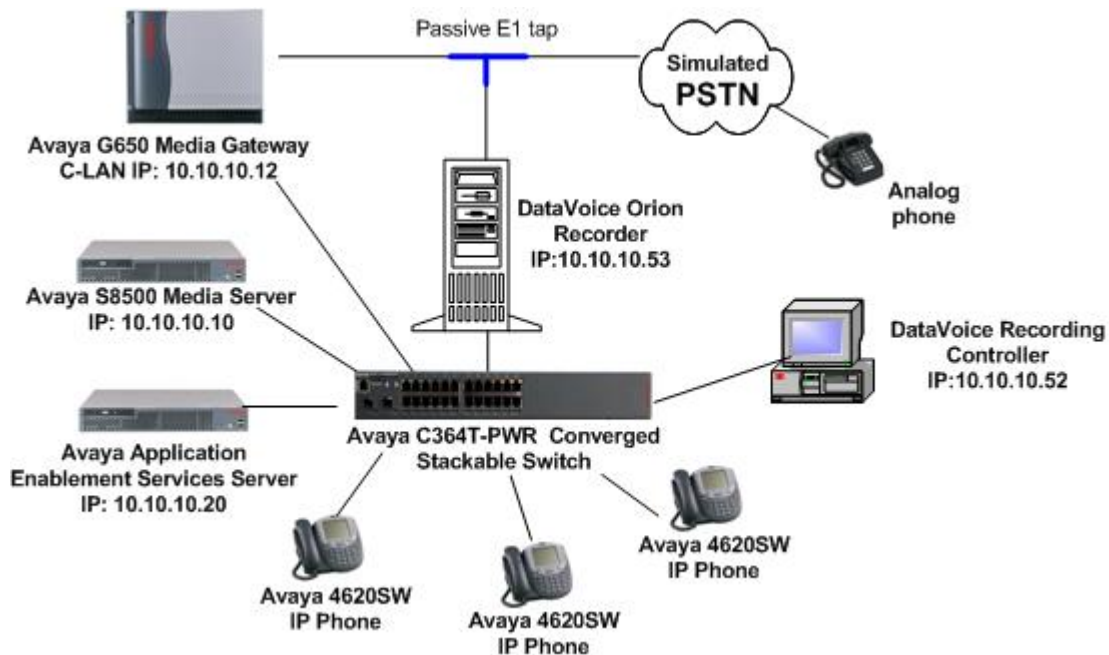

Figure 1: Avaya Communication Manager, Avaya Application Enablement Services, DataVoice Orion Recorder and DataVoice Recording Controller

2. Equipment and Software Validated

The tested configuration is detailed below.

Equipment	Software
Avaya Communication Manager	3.0 (340.3)
Avaya 4620 IP Telephones	1.9.1
Avaya C364T-PWR Converged Stackable Switch	4.3.12
Avaya Application Enablement Services Server	3.0 (r3-0-0-build-46-0)
DataVoice Orion Recorder	9.6
DataVoice Recording Controller	3.4.0.5

3. Configure Avaya Application Enablement Services Server

These Application Notes address provisioning of the DataVoice Recording solution as it relates to the integration with Avaya Application Enablement Services using Avaya Adjunct Switch Application Interface (ASAI).

Log into the Avaya Application Enablement Services (AES) Server OAM pages. The Avaya AES server summary page indicates the number of available licenses; ensure that the relevant licenses are installed.

Ensure that all the services are running under the **Maintenance → Service Controller** option. At a minimum, the **DLG** and **Transport Layer** services should be running.

Add a switch connection name by clicking on **Switch Connections** under **Administration**. A password of at least 12 alphanumeric characters needs to be entered; this is the exact password that will be used when configuring Avaya Communication Manager.

Click on **Edit CLAN IPs** in the **Switch Connections** page. Enter the IP address of a C-LAN and then click on **Add Name or IP**.

Click on **Administration → CTI Link Admin → DLG Links**. Click on **Add Link** and enter the, **Switch Connection, Switch CTI Link Number** (must match CTI link number configured on Avaya Communication Manager in Section 4.1), **Client Hostname or IP** and the **Client Link Number**. Click on **Apply Changes**.

The following will be displayed showing the added DLG Link.

4. Configure Avaya Communication Manager

This section describes the steps for configuring the Avaya CTI link and the passive E1 trunk on Avaya Communication Manager. Different features of Avaya Communication Manager need to be configured for the recording modes to be tested. Please refer to the *Administration Guide for Avaya Communication Manager* for further details. The specific options are detailed below.

4.1. Configure the CTI Link

Regardless of the mode of audio recording, an Avaya Computer Telephony Integration (CTI) link is required to provide call details for each recording. DataVoice supports a variety of CTI link options including native ASAI. Only the native ASAI link is appropriate to these Application Notes.

```
display system-parameters customer-options                    Page   3 of  11
                            OPTIONAL FEATURES

    Abbreviated Dialing Enhanced List? n           Audible Message Waiting? n
          Access Security Gateway (ASG)? n              Authorization Codes? n
          Analog Trunk Incoming Call ID? n  Backup Cluster Automatic Takeover? n
 A/D Grp/Sys List Dialing Start at 01? n                         CAS Branch? n
Answer Supervision by Call Classifier? n                           CAS Main? n
                                   ARS? y              Change COR by FAC? n
                 ARS/AAR Partitioning? y   Computer Telephony Adjunct Links? y
        ARS/AAR Dialing without FAC? y    Cvg Of Calls Redirected Off-net? n
            ASAI Link Core Capabilities? y                      DCS (Basic)? n
            ASAI Link Plus Capabilities? y             DCS Call Coverage? n
        Async. Transfer Mode (ATM) PNC? n             DCS with Rerouting? n
   Async. Transfer Mode (ATM) Trunking? n
               ATM WAN Spare Processor? n     Digital Loss Plan Modification? n
                                  ATMS? n                           DS1 MSP? n
                    Attendant Vectoring? n          DS1 Echo Cancellation? n
```

A CTI Link must be configured to provide the logical connection between Avaya Communication Manager and the DataVoice Recording Controller. Type must be set to "ASAI-IP" to allow for a DLG link to a non-Avaya supplied adjunct. Extension number must be valid in the dialplan of Avaya Communication Manager.

```
display cti-link 2                                          Page   1 of   2
                                 CTI LINK
 CTI Link: 2
Extension: 13100
      Type: ASAI-IP
                                                                    COR: 1
      Name: DLG link 2
```

The Node-Names form must be modified to include the Avaya C-LAN and the Avaya Application Enablement Services (AES) Server, as shown below:

```
display node-names ip                                      Page   1 of   1
                             IP NODE NAMES
     Name              IP Address          Name             IP Address
AEServer            10 .10 .10 .20                         .   .   .
CDR_Server          10 .10 .30 .20                         .   .   .
G350                10 .10 .30 .10                         .   .   .
VAL                 10 .10 .10 .14                         .   .   .
clan                10 .10 .10 .12                         .   .   .
default             0  .0  .0  .0                          .   .   .
medpro              10 .10 .10 .13                         .   .   .
procr               10 .10 .10 .10                         .   .   .
                         .   .   .                         .   .   .
                         .   .   .                         .   .   .
( 8  of 8   administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

The IP Services form needs to be configured to define a link to the Avaya Application Enablement Services server as shown below.

```
display ip-services                                        Page   1 of   4

                             IP SERVICES
 Service       Enabled     Local       Local      Remote       Remote
  Type                     Node        Port       Node         Port
SAT            y         clan          5023     any            0
AESVCS         y         clan          8765
CDR1                     clan          0        CDR_Server     9000
```

On the AE Services Administration page of the **ip-services** form, enter the hostname of the **AES server** and the **Password** (which must match the password configured on the AES in Section 3), set **Enabled** to "**y**".

```
display ip-services                                        Page   4 of   4
                        AE Services Administration


   Server ID    AE Services        Password          Enabled     Status
                  Server
      1:        AEServer        aeserver123456          y         in use
      2:
      3:
```

4.2. Configure the Passive E1 Trunk

Passive monitoring does not require any additional configuration on the E1 trunk, to allow DataVoice Recording Controller to passively monitor the E1 trunk. Details of the DS1, Signaling Group, and Trunk Group configuration are provided for informational purposes.

```
display ds1 01A05                                          Page   1 of   1
                            DS1 CIRCUIT PACK


             Location: 01A05                          Name: PRI 5 to abacus
             Bit Rate: 2.048              Line Coding: hdb3


        Signaling Mode: isdn-pri
               Connect: pbx                      Interface: user
   TN-C7 Long Timers? n               Country Protocol: etsi
Interworking Message: PROGress        Protocol Version: a
Interface Companding: alaw                             CRC? y
            Idle Code: 11111111
                              DCP/Analog Bearer Capability: 3.1kHz


                              T303 Timer(sec): 4


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

A **Signaling Group** and an associated **Trunk Group** needs to be configured for the above DS1 Circuit Pack, as shown below in the following screens.

```
display signaling-group 73                                 Page   1 of   5
                            SIGNALING GROUP


 Group Number: 73               Group Type: isdn-pri
                  Associated Signaling? y      Max number of NCA TSC: 0
                   Primary D-Channel: 01A0516    Max number of CA TSC: 0
                                             Trunk Group for NCA TSC:
 Trunk Group for Channel Selection: 73      X-Mobility/Wireless Type: NONE
         Supplementary Service Protocol: a
```

```
display trunk-group 73                                        Page   1 of  19
                               TRUNK GROUP

Group Number: 73                   Group Type: isdn          CDR Reports: y
 Dial Access? y                  Busy Threshold: 255       Night Service:
Queue Length: 0
Service Type: tie                         Auth Code? n        TestCall ITC: rest
                        Far End Test Line No:
TestCall BCC: 4
TRUNK PARAMETERS
          Codeset to Send Display: 6     Codeset to Send National IEs: 6
         Max Message Size to Send: 260   Charge Advice: none
Supplementary Service Protocol: a    Digit Handling (in/out): enbloc/enbloc


              Trunk Hunt: cyclical                    QSIG Value-Added? n
                                              Digital Loss Group: 13
Incoming Calling Number - Delete:     Insert:                   Format:
              Bit Rate: 1200         Synchronization: async    Duplex: full
 Disconnect Supervision - In? y  Out? n
 Answer Supervision Timeout: 0
```

```
display trunk-group 73                                        Page   2 of  19
TRUNK FEATURES
     ACA Assignment? n                 Measured: none      Wideband Support? n
                              Internal Alert? n         Maintenance Tests? y
                             Data Restriction? n     NCA-TSC Trunk Member:
                             Send Name: y      Send Calling Number: y
            Used for DCS? n
  Suppress # Outpulsing? n    Format: public
Outgoing Channel ID Encoding: preferred   UUI IE Treatment: service-provider


                                         Replace Restricted Numbers? n
                                         Replace Unavailable Numbers? n
                                              Send Connected Number: n
                                            Hold/Unhold Notifications? y
            Send UUI IE? y            Modify Tandem Calling Number? n
              Send UCID? n
 Send Codeset 6/7 LAI IE? y                    Ds1 Echo Cancellation? n


                                    US NI Delayed Calling Name Update? n


              SBS? n  Network (Japan) Needs Connect Before Disconnect? n
```

```
display trunk-group 73                                     Page   3 of  19
                                   TRUNK GROUP
                                       Administered Members (min/max):   1/30
GROUP MEMBER ASSIGNMENTS                       Total Administered Members:  30

         Port    Code Sfx Name        Night            Sig Grp
  1: 01A0501   TN2464 B                               73
  2: 01A0502   TN2464 B                               73
  3: 01A0503   TN2464 B                               73
  4: 01A0504   TN2464 B                               73
  5: 01A0505   TN2464 B                               73
  6: 01A0506   TN2464 B                               73
  7: 01A0507   TN2464 B                               73
  8: 01A0508   TN2464 B                               73
  9: 01A0509   TN2464 B                               73
 10: 01A0510   TN2464 B                               73
 11: 01A0511   TN2464 B                               73
 12: 01A0512   TN2464 B                               73
 13: 01A0513   TN2464 B                               73
 14: 01A0514   TN2464 B                               73
 15: 01A0515   TN2464 B                               73
```

5. Configure the DataVoice Recording Solution

The following section describes the provisioning of the DataVoice Recording Controller and DataVoice Orion Recorder to interoperate with Avaya Communication Manager.

5.1. Configure the DataVoice Orion Recorder

The DataVoice Orion Recorder is normally supplied configured for the required application and only a limited amount of additional configuration is needed, such as specifying an IP Address for the internal network interface card of the DataVoice Orion Recorder Server. The related Recording Controller will pass the rest of the configuration details to the DataVoice Orion Recorder after a connection has been successfully established.

5.2. Configure the DataVoice Recording Controller

The DataVoice Recording Controller is supplied installed with a copy of the Recording Controller software, which executes automatically on startup. There are several aspects of configuration, including configuration of the DataVoice Orion Recorder and definition of devices to be recorded, passive E1.

The first setup screen allows a subset of the global settings for a connected switch to be configured.

Click on **Definity Recording Controller → Switch**. In the section labeled **Switch name** enter the name of the switch for example "Avaya Lab". Under the section labeled **Contents** select the recorded information to be based on **Extension**.
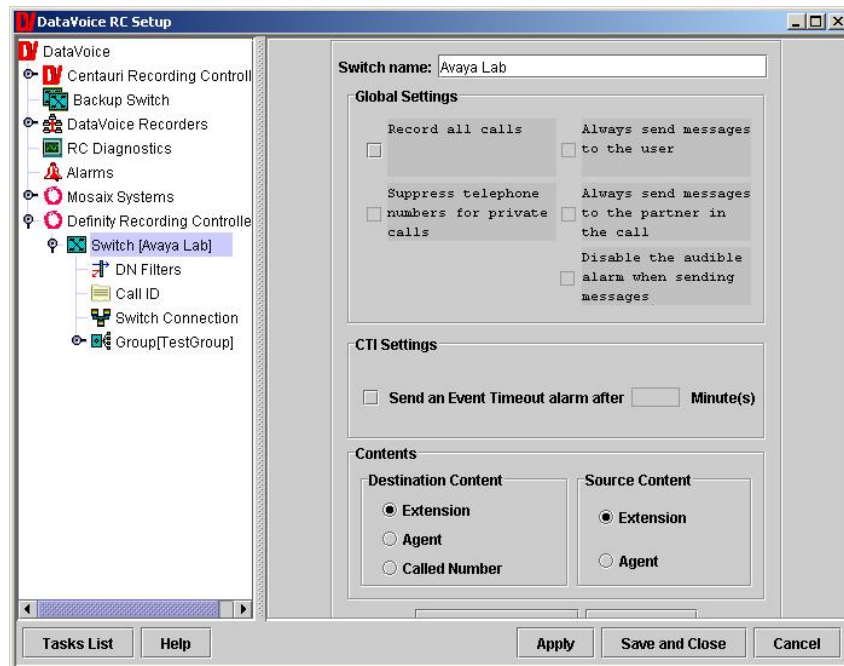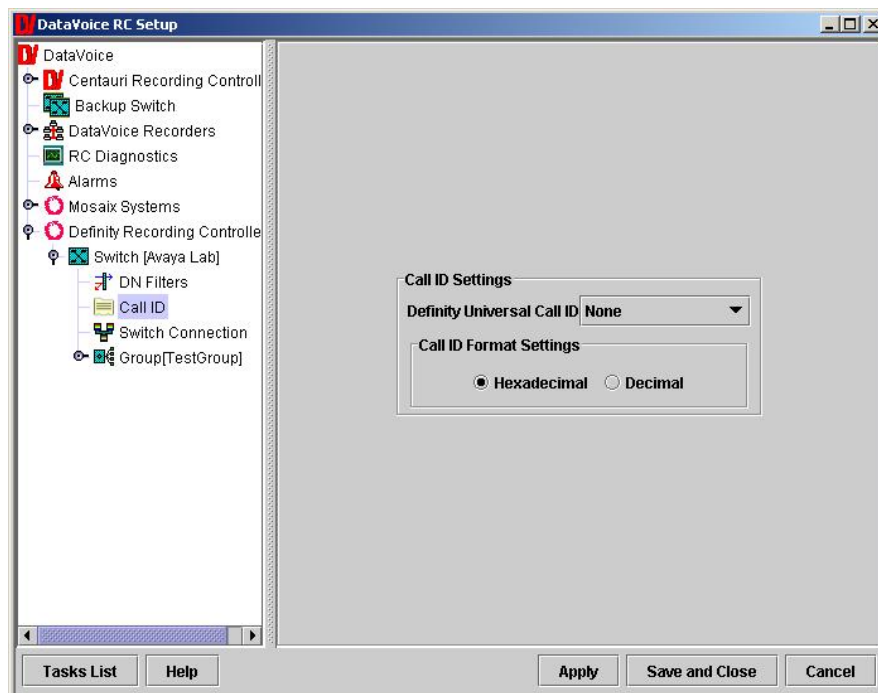
Click on **Definity Recording Controller** → **Switch Connection**. Enter the IP address of the AES server in the **Switch IP Address** field. In the **Switch IP Port** field enter "**5678**". The **Client link number** is set to "2" (the details entered should match the configuration in Section 3 and 4).
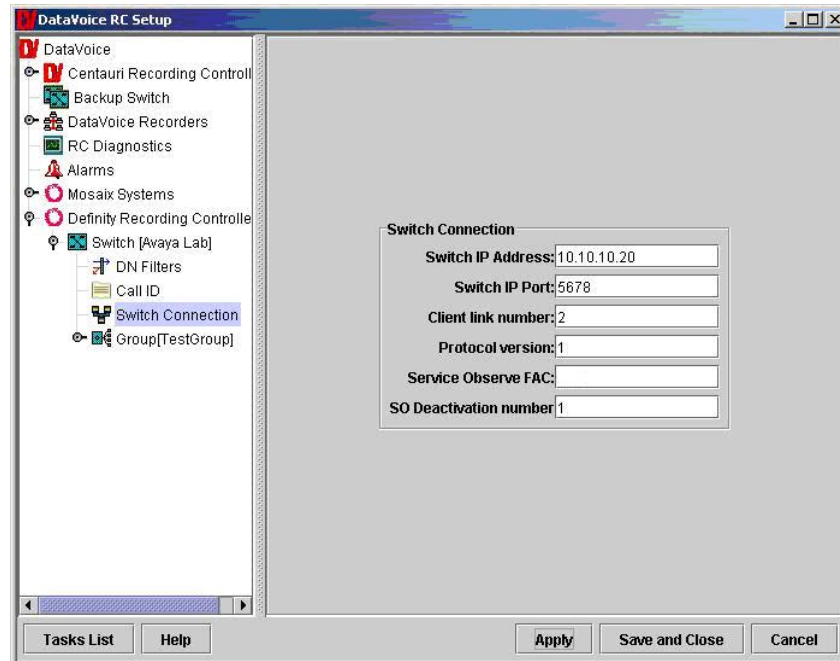
Click on **DataVoice Recorders** ➔ **Recorder**. In the section labeled **Recorder Information** enter the **Recorder name** and **IP address** of the DataVoice Recorder.
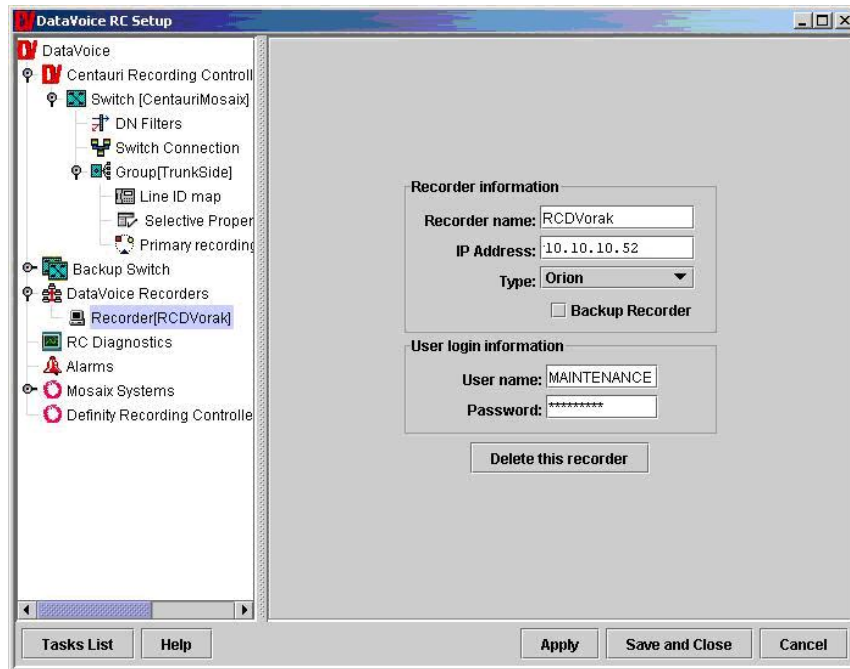
The format of the Universal Call ID (UCID) "Hexadecimal" allows the full UCID to be attached to a voice recording, whereas "Decimal" provides for an abbreviated form of the standard Avaya UCID format to be attached.

5.3. Configure the Passive Trunk Tapping Recording Channels

Click on **Definity Recording Controller → Group**. Enter a **Group name**. A group must be created for any calls to be that are recorded. For passive trunk tapping, the **Type of group** field must be set to "Indirect Recording". The number of lines in the **Lines in group field** is set to 30 (since this group is associated with a single E1 trunk of 30 channels).

Click on **Apply**.

Expand the **Group** node created above and click on **Line ID map**. The Line ID map table relates a channel in the passive E1 trunk with its related trunk details within Avaya Communication Manager. Trunk Group 73 (configured in Section 4) was used as the passively monitored trunk; the Line ID for each group member needs to be suitably administered as shown below.

Click on **Apply**.
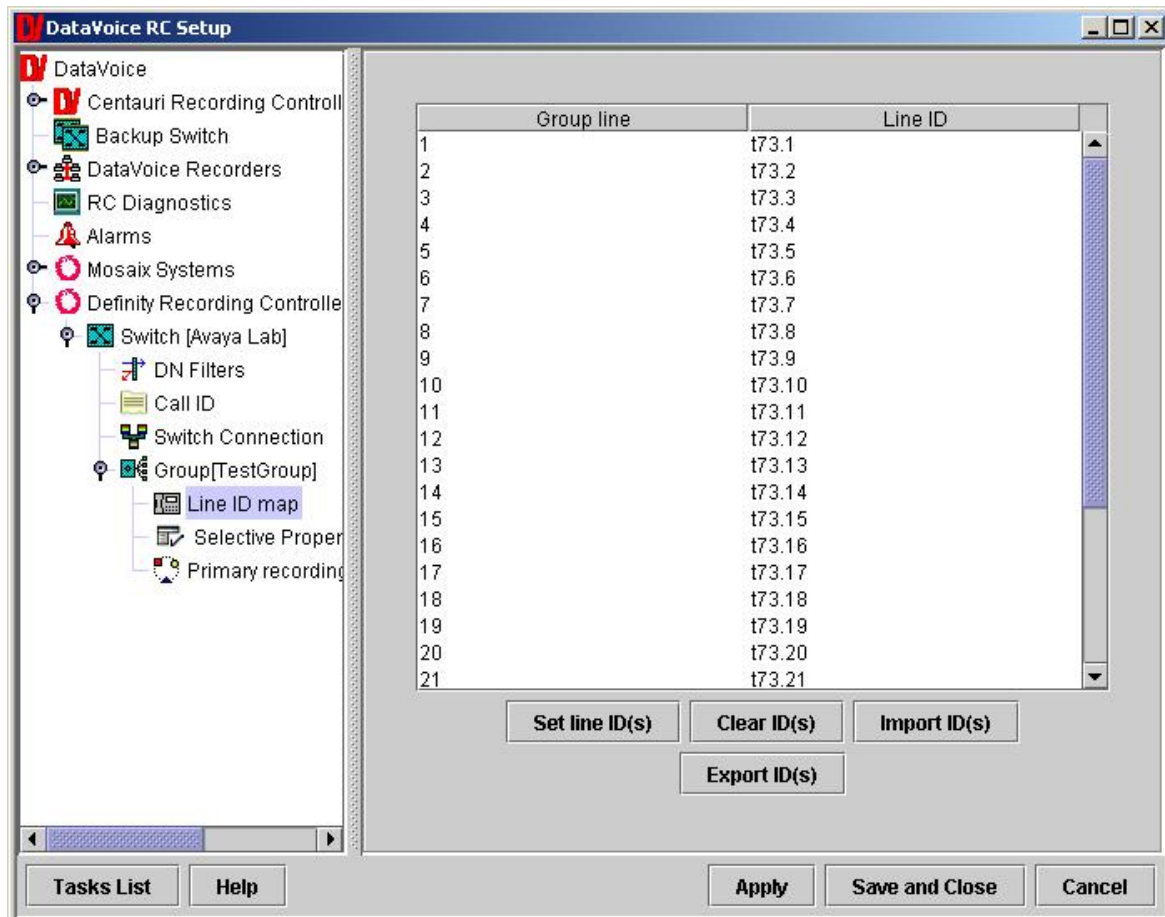
Within the **Group** node created. Click on **Primary recording**. DataVoice is able to support multiple groups but needs to relate each group member to a global recorder line number. The global recorder line number is used with recorder allocation and diagnostics. In the **Set name** field enter a name for the primary recording and configure the **Group line to recorder line mapping** section as illustrated below.

Click on **Apply** and then **Save and Close**.

Solution & Interoperability Test Lab Application Notes
©2005 Avaya Inc. All Rights Reserved.
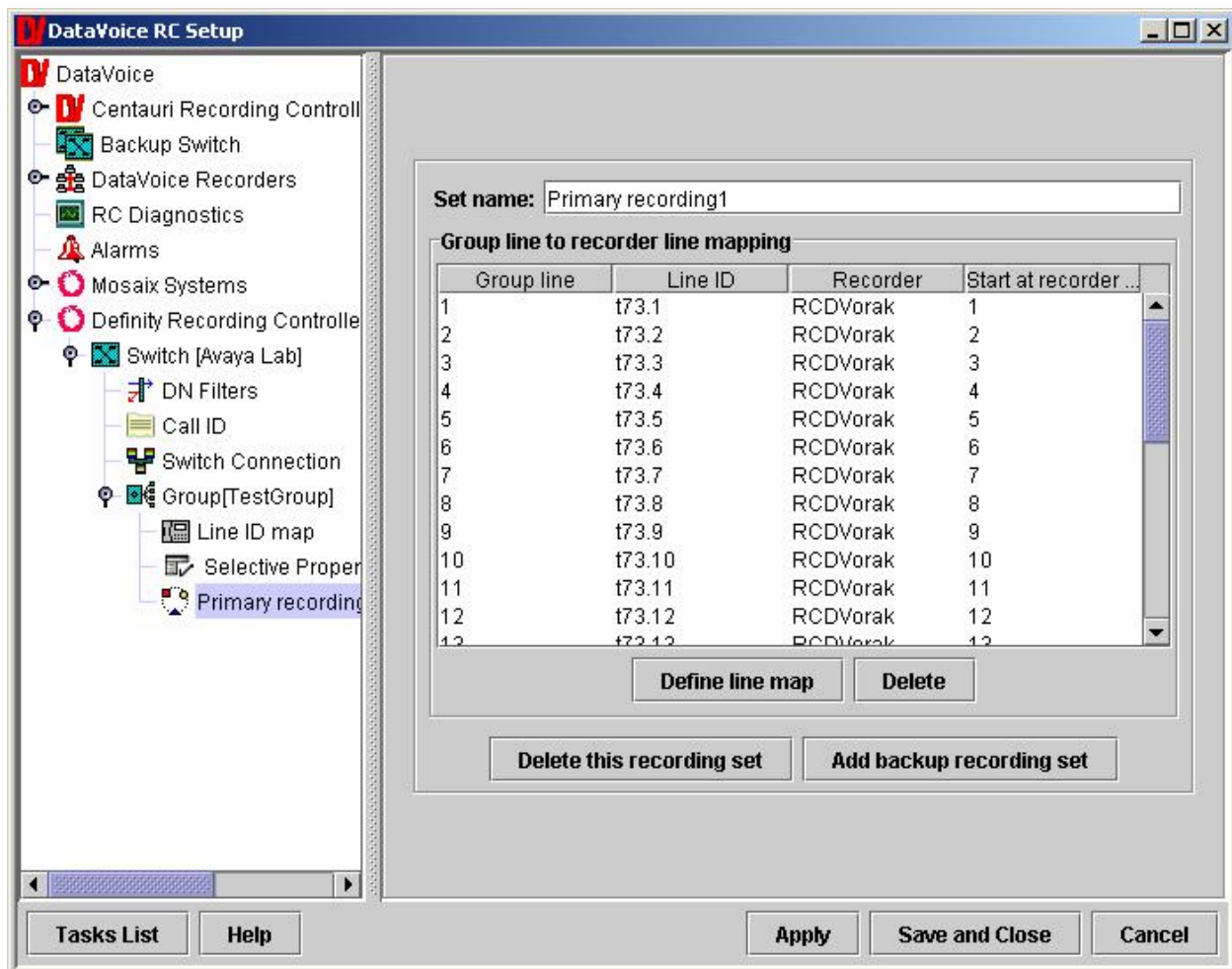
6. Interoperability Compliance Testing

A generic Voice recording test plan was used and customized to include the features of the DataVoice recording solution.

The interoperability compliance test included feature functionality, failover and performance testing. The testing examined the DataVoice Recording Controller interoperability with Avaya Communication Manager 3.0. The majority of the testing focused on the ability of the DataVoice Recording application to record trunk calls and replay the voice recordings correctly. The source and destination of each call recording was verified. The Solution tested was only trunk side recording, meaning no internal calls were recorded.

6.1. General Test Approach

The general approach was to place inbound and outbound calls over the E1 trunk monitored and recorded by the DataVoice Recording application, and verify the recordings. For feature functionality testing, basic telephony operations such as answer, hold/retrieve, transfer, and conference were exercised on inbound and outbound trunks calls. For performance testing, a call generator placed inbound calls over the E1 trunk over an extended period of time.

6.2. Test Results

All feature and performance tests passed. The DataVoice recording solution successfully recorded, displayed and replayed the recordings.

A Conference call recording between internal and external parties creates a record of zero duration as only one channel can obtain audio for the conference. In a situation whereby all of the external parties disconnect, while the internal parties remain on the call, the call is recorded with silence until the call is terminated.

7. Verification Steps

7.1. Avaya

The following steps can ensure that the communication between Avaya Communication Manager and the Avaya Application Enablement Services server is working.

Click on **Status and Control → Switch Conn Summary** in the AES OAM pages. This summary gives the status of the connection between Avaya Communication Manager and the Avaya Application Enablement Services server. Verify that the **Conn State** indicates **Talking**.

Click on **Status and Control → Services Summary** in the AES OAM pages. This summary gives the status of each service.

Equivalent steps can be taken to check the status of the link on Avaya Communication Manager as follows.

Verify that the Avaya Application Enablement Services server is communicating with the C-LAN on Avaya Communication Manager by using the **status aesvcs interface** command.

```
status aesvcs interface

                        AE SERVICES INTERFACE STATUS

Local Node          Enabled?   Number of        Status
                               Connections

clan                yes        1                listening
```

Verify that the **Service State** of the CVLAN link is **established.**

```
status aesvcs cti-link

                        AE SERVICES CTI LINK STATUS

CTI     Version  Mnt    AE Services      Service       Msgs    Msgs
Link             Busy   Server           State         Sent    Rcvd

1       4        no     AEServer         established    15      15
2       4        no     AEServer         established    15      15
3       4        no     AEServer         established    15      15
```

7.2. DataVoice

The DataVoice Recording Controller has a variety of diagnostic settings that can be configured; the following screen illustrates all of these values.
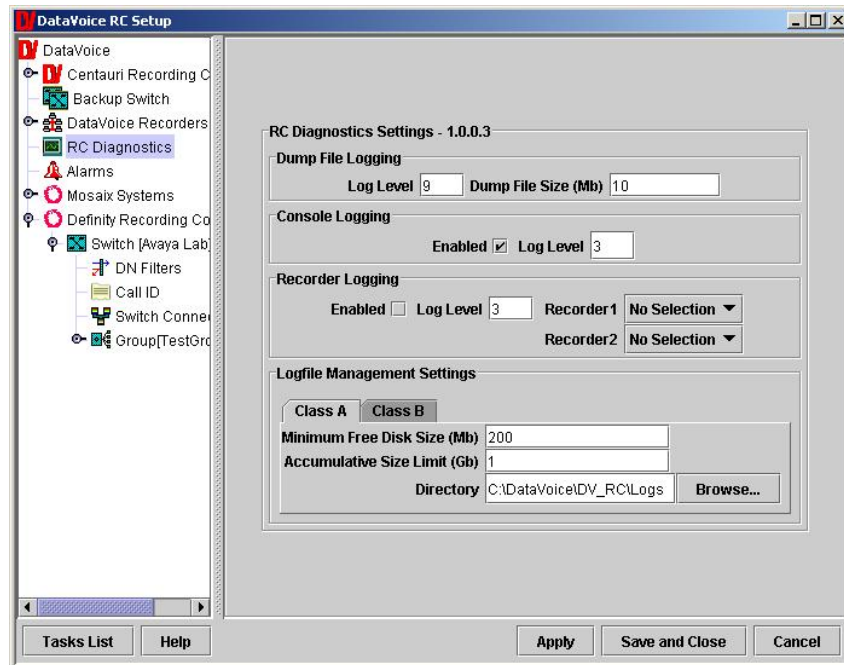
The recordings in the DataVoice Orion Recorder database can be viewed and played back using the DataVoice Orion Workstation. Below is a typical playback session of a voice recording.
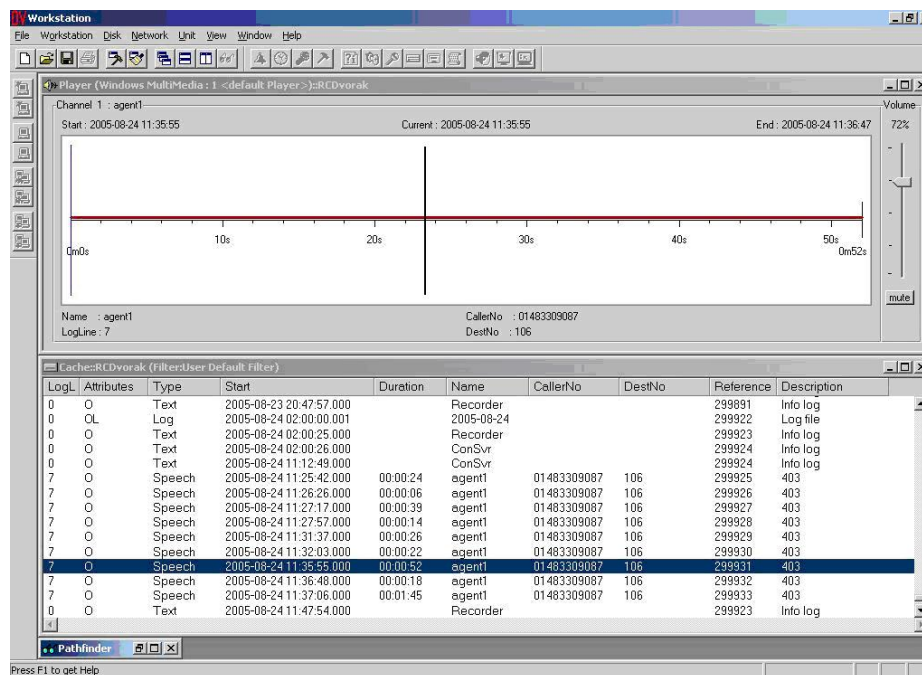
8. Support

If technical support is required for the Spescom DataVoice recording solution, contact DataVoice Technical Support.

Email: support@datavoice.spescom.com

Phone: +27 11 266-1801

9. Conclusion

These Application Notes describe the configuration steps required for the DataVoice Orion Recording Solution to successfully interoperate with Avaya Communication Manager 3.0 and Avaya Application Enablement Services server. The configuration described in these Application Notes has been successfully compliance tested.

10. Additional References

This section references the Avaya and Spescom DataVoice product documentation that are relevant to these Application Notes.

Avaya product documentation can be found at http://support.avaya.com.

Administrator Guide for Avaya Communication Manager, 03-300509, Issue 1, June 2005

10.1. Documentation

Documentation is available on request from Spescom DataVoice
http://www.datavoice.spescom.com/