



Avaya Solution & Interoperability Test Lab

Application Notes for configuring Resource Software International Shadow Call Management System (CMS) Version 4.3.0 with Avaya Communication Server 1000 Release 7.6 and Avaya DBA Toolkit Version 2.0.0.8 – Issue 1.0

Abstract

These Application Notes describe a solution comprised of the Avaya Communication Server 1000 7.6 and the Resource Software International Shadow CMS Version 4.3.0. During the compliance testing, the Resource Software International Shadow CMS Application was able to utilize the Avaya Data Buffering and Access (DBA) Toolkit version 2.0.0.8 to collect the call records from the Avaya Communication Server 1000 and then extract these records from the raw database to formulate it into customer call accounting reports.

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

Resource Software International (RSI) Shadow CMS Application is a Call Accounting and Usage Management solution for Enterprise Businesses. The solution comprises of the Shadow CMS Application server, which is running on a Windows XP Professional Operating System. Co-resident with the Shadow CMS Application is the Avaya DBA Toolkit version 2.0.0.8, which is connected to the Avaya Communication Server 1000 (hereafter referred to as CS 1000) over the Ethernet. This DBA Toolkit will extract the raw data from the DBA buffer of the CS 1000 and populate it into a database file image ready for processing.

2. General Test Approach and Test Results

The general test approach was to install the Avaya DBA Toolkit on to the Shadow CMS server which communicates directly to the CS 1000 via network connectivity. Execute the DBA Toolkit application to collect the raw Call Detail Record (CDR) from the DBA buffer of the CS 1000. Run the Shadow CMS Application to pull the raw call records from the database file and then generate the required reports. The data in the report should match the raw call records.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The objective of this interoperability compliance testing was to verify the following:

- Collect various CDR records such as internal, inbound/outbound via SIP trunks, transfer, conference, charge account and authorization code from the CS 1000 raw data via DBA Toolkit application and display in reports.
- Serviceability.

2.2. Test Results

The objectives outlined in the **Section 2.1** were verified and met. All test cases were executed and they all passed.

2.3. Support

Technical support for Shadow CMS can be obtained by RSI via,

Web: <http://www.telecost.com>

Phone: 905-576-4575 (Canada)/ 718-701-0945 (US)

Email: support@telecost.com

3. Reference Configuration

Figure 1 illustrates the network diagram configuration used during the compliance testing between the Shadow CMS 4.3.0 Application and Avaya Communication Server 1000 Release 7.6. Shadow CMS and the DBA Toolkit both resided on the same server. The DBA Toolkit collected the raw CDR from CS1000 over the Ethernet.

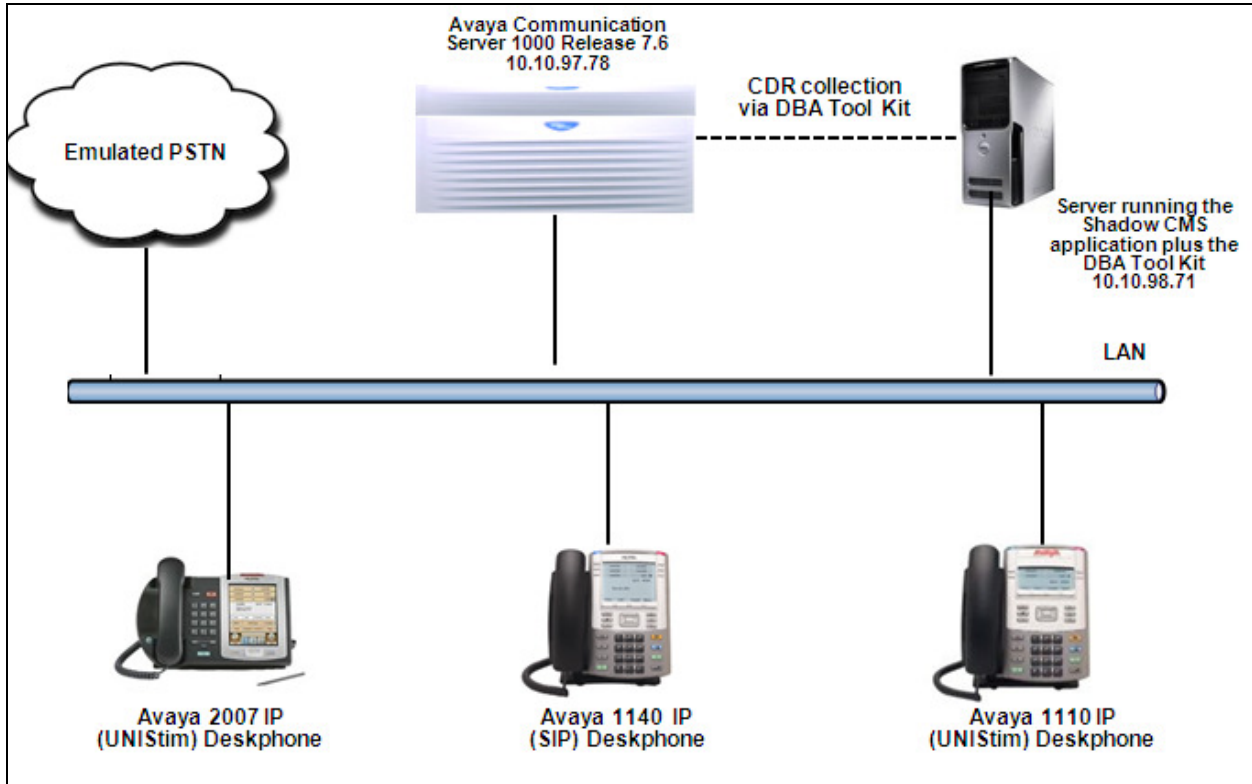


Figure 1: Test Configuration Diagram

4. Equipment and Software Validated

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

Equipment	Software
Avaya Communication Server 1000	7.6
Avaya IP Phones <ul style="list-style-type: none">• 2007(UNIStm)• 1110 (UNIStm)• 1140 (SIP)	0621C8L 0623C8Q 4.03.12.00
Shadow CMS installed on MS Windows XP Pro	4.3.0.014
Avaya DBA Toolkit	2.0.0.8

5. Configure Avaya Communication Server 1000

This document assumes that the Avaya CS 1000 was properly installed and configured as per the product document. For more information about how to install, configure and administer CS 1000 refer to **Section 9**. This section provides only the steps on how to configure the CDR feature on the CS 1000. Assumption is also made that the DBA Toolkit has been correctly installed and configured. For additional information regarding the installation, configuration and user guides for DBA, refer to **Section 9**.

5.1. Check software packages for CDR feature

The configuration of CS1000 was performed using the Command Line Interface (CLI).

Use overlay **LD 22** to print all necessary software packages that are required for the CDR feature on the CS 1000.

```
>ld 22

REQ prt
TYPE pkg
CDR          4 (Call Detail Recording)
CTY          5 (Call Detail Recording on Teletype Terminal)
CHG          23 (Charge Account for CDR)
BAUT         25 (Basic Authorization Code)
ICDR         108 (Internal Call Detail Recording)
CDRE         151 (Call Detail Recording Expansion)
FCDR         234 (New Call Detail Recording)
CDRX         259 (Call Detail Recording Enhancement)
```

5.2. Administer CS 1000 CDR feature

Use overlay **LD 15** to enable CDR feature in customer data block (CDB) of CS 1000 system under the **CDR_DATA** gate opener.

```
>ld 15
REQ: chg
TYPE: CDR

TYPE CDR_DATA
CUST 0
CDR YES
  IMPH NO
  OMPH NO
  AXID YES
  TRCR No
  C DPR YES
  ECDR YES
  BDI YES
  OTCR YES
  PORT
  CNI DGTS
  BCAP NO
CHLN 5
FCAF NO
```

Use overlay **LD 17** to change format for CDR to new under the **PARM** gate opener.

```
>ld 17
REQ chg
TYPE parm
FCDR NEW
```

User overlay **LD 16** to enable CDR feature in route data block (RDB) for trunks.

```
>ld 16
REQ chg
TYPE rdb
CUST 0
ROUT 10
CDR YES (Call Detail Recording)
INC YES (CDR records generated on incoming calls)
LAST YES (CDR record printing content option for redirected calls)
TTA YES (Time To Answer output in CDR)
ABAN YES (Abandoned call records output for this route)
CDRB YES (Abandoned call on busy tone records)
QREC Yes (CDR ACD Q initial connection records to be generated)
OAL YES (CDR on outgoing calls)
AIA YES (CDR on Outgoing Toll calls)
OAN YES (CDR timing starts On Answer supervision of outgoing calls)
OPD YES (Outpulsed Digits in CDR)
```

Use overlay **LD 117** to enable buffering for CDR on the CS 1000 system.

```
>ld 117
=> enl buf cdr
```

Note: Do not use **ENL BUF ALL** to enable all kinds of buffer. This results in the accumulation of additional data that is not collected by DBA CDR/Traffic Collector and unnecessarily consumes storage space. If this command is inadvertently entered, enter **DIS BUF ALL** and manually enable CDR or Traffic collection as required. The **DIS BUF ALL** command flushes any CDR or TRF data that has been buffered on the Call Server since the last DBA Collection Session.

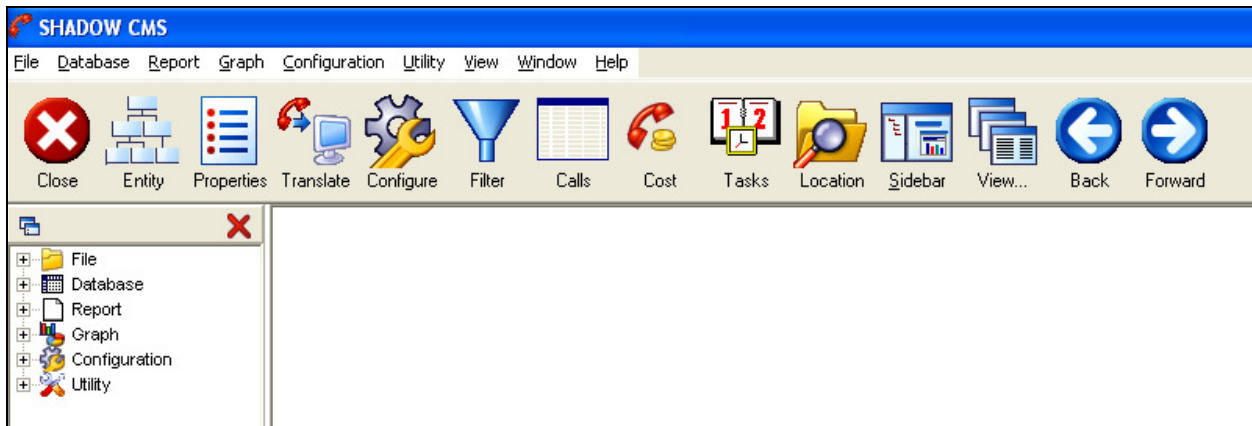
Use overlay **LD 11** to set class of services Incoming Call Detail Recording Allowed (ICDA) and Abandon Call Allowed (ADBA) for the CS 1000 phones whose CDR needs to be collected.

```
>ld 11
REQ: chg
TYPE: 1120
TN 96 1 0 6
ECHG yes
ITEM cls icda abda
```

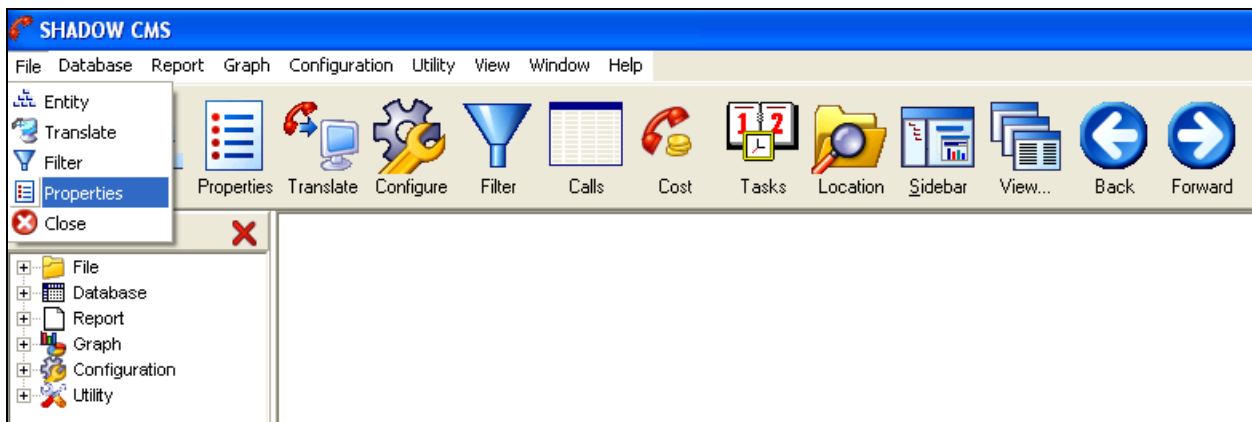
6. Configure Shadow CMS Application

This section describes the operation of Shadow CMS. The Shadow CMS collects the raw CDR data from the detail1.img file created by the DBA Toolkit. This raw CDR data is then transformed into call records, which are then immediately available for reporting. RSI installs, configures, and customizes the Shadow CMS application for their end customers. For further information regarding installation and configuration of Shadow CMS, refer to **Section 9**.

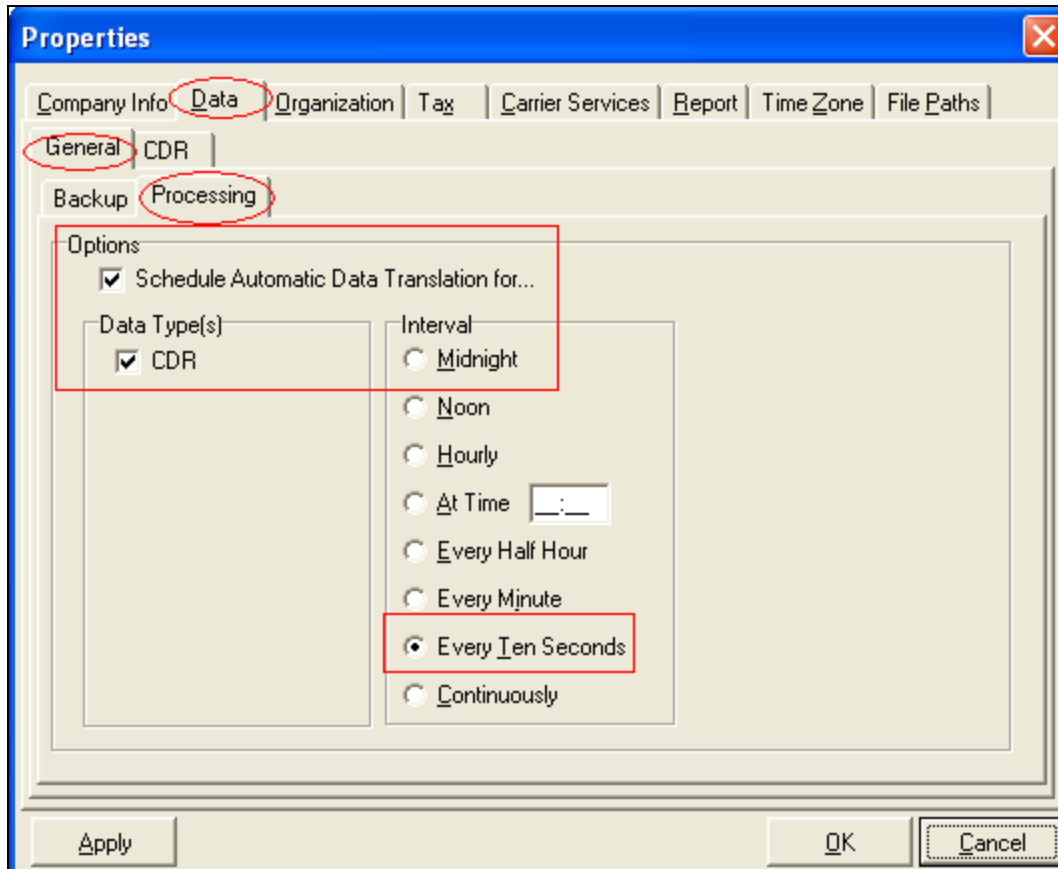
To launch the Shadow CMS application from the server where the application is installed, navigate to the menu **Start → Program → RSI → CMS → CMS** (not shown). The Shadow CMS window is displayed as shown below.



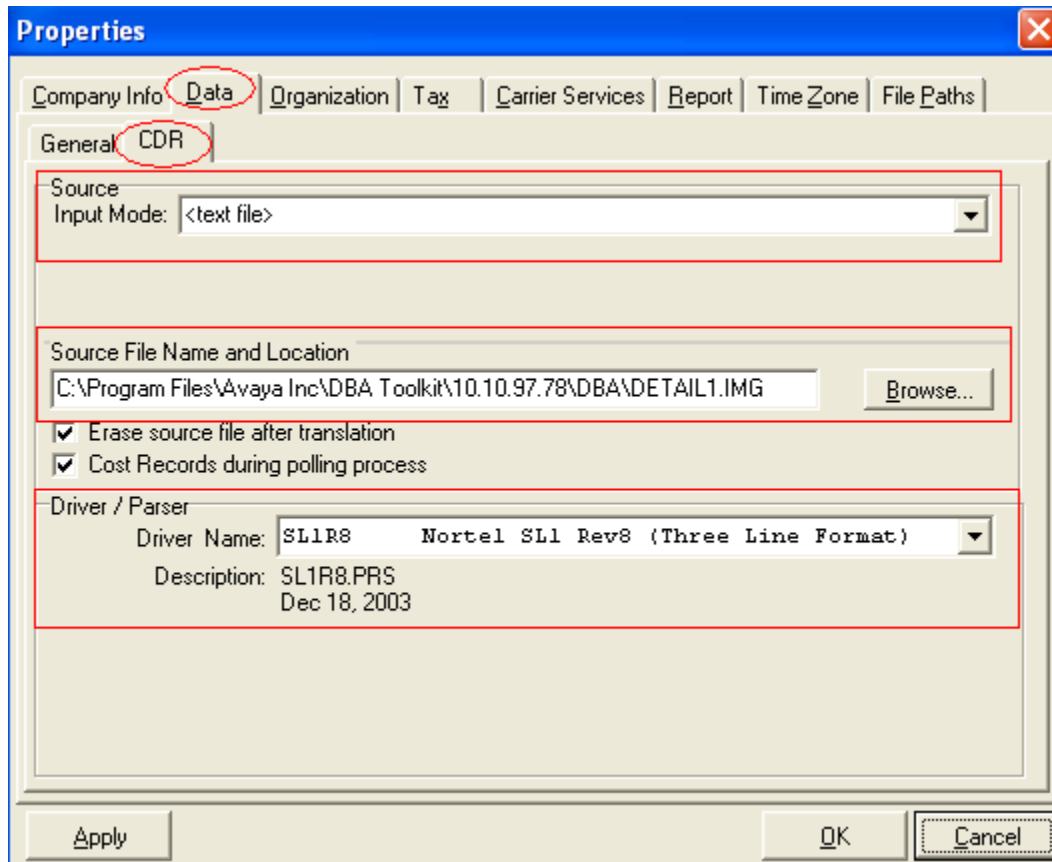
To configure CDR collection and format for the Shadow CMS, navigate to **File → Properties** as shown in the screen below.



The **Properties** window is displayed as shown in the screen below. Set a schedule for the Shadow CMS to collect the raw CDR data by navigating to **Data → General → Processing** Tab. Under **Options** check the box for **Schedule Automatic Data Translation for...** and under **Data Type(s)** check the box for **CDR**. Select an **Interval** for collecting the raw CDR data. During compliance testing **Every Ten Seconds** was selected. Click on the **Apply** button.



In the same **Properties** window, navigate to **Data** → **CDR** Tab. In the **Source** section select **<text file>** from the drop down menu for **Input Mode**. Under **Source File Name and Location** browse to the path where the detail1.img file is stored on the server. In the **Driver/Parser** section, select **SL1R8 Nortel SL1 Rev8 (Three Line Format)** from the drop down menu for **Driver Name**. Retain default values for all other fields and click **Apply** to complete the configuration.



To run reports on the Shadow CMS, from the left navigation pane, expand the **Report** tab and select type of report, in this example is Chronological Detail. The Chronological Detail query window is displayed, click **OK** on this window to launch the report (not shown). The Chronological Detail report is as shown in the screen below.

Date	Time	Dir	From	To	Location	Digits	Duration	Cost	Route	Comment
2013.08.06	13:49	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:08	0.00	INV	
2013.08.06	13:48	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:10	0.00	INV	
2013.08.06	13:26	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:10	0.00	INV	
2013.08.06	13:25	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:04	0.00	INV	
2013.08.06	13:25	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:06	0.00	INV	
2013.08.06	13:23	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:14	0.00	INV	
2013.08.06	13:24	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:06	0.00	INV	
2013.08.06	13:24	o.ut	E 000 1007	T 0001032	Outgoing	800 153-040	00:00:22	0.00	INV	
2013.08.05	09:23	o.ut	E 0054427	T 0001032	Outgoing	800 176-0001	00:07:12	0.00	INV	

7. Verification Steps

The following are typical steps to verify the interoperability between the Shadow CMS Application and Avaya CS 1000.

- Connect the DBA Toolkit application to the CS 1000 system.
- Configure the Shadow CMS Application to retrieve call records from the DBA Toolkit application.
- Place various call types such as: internal, outgoing, incoming, PSTN, charge account, authorization code from/to the CS 1000 system which has the CDR feature enabled and verify that the call records are sent to the DBA Toolkit server.
- Observe on the DBA Toolkit application whether the call was correctly stored on the DBA server database with the file name detail1.img.
- From the Shadow CMS server, start the collection process and generate the detail call record database.
- Generate the call accounting report
- Verify that the report shows correctly the information of call records such as Date/Time, Duration, Extension used, Report Dialed Number, Call Type, Auth Call Code, Charge Account etc.
- For serviceability test, disconnect the DBA Toolkit and generate calls. Connect DBA Toolkit and verify that the buffered records are collected.

8. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 2.1**. Shadow CMS version 4.3.0 is compliant tested with the Avaya Communication Server 1000 Release 7.6 and Avaya DBA Toolkit version 2.0.0.8.

9. Additional References

Product documentation for Avaya CS 1000 products may be found at:

<https://support.avaya.com>

- [1] Avaya Communication Server 1000E Installation and Commissioning.
- [2] Avaya CS 1000 Co-resident Call Server and Signaling Server Fundamentals.
- [3] Avaya CS 1000 Element Manager System Reference – Administration.
- [4] Avaya Call Detail Recording Fundamentals Avaya Communication Server 1000.
- [5] Avaya Software Input Output Reference – Administration Avaya Communication Server 1000.

All documents and software pertaining to DBA Toolkit may be found at:

https://devconnect.avaya.com/public/dyn/d_dyn.jsp?fn=105

Product documentation for RSI Shadow CMS Application can be found at:

<http://www.telecost.com/>

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