

**Avaya Solution and Interoperability Test Lab**

# Application Notes for interoperability between the Avotus Professional Version 3.19 and the Avaya Communication Server 1000 Release 7.0 – Issue 1.0

## Abstract

These Application Notes describe a solution comprised of the Avaya Communication Server 1000 7.0 and the Avotus Professional version 3.19. During the compliance testing, the Avotus Professional application was able to utilize the Avaya Data Buffering and Access (DBA) tool kit version 1.05 to collect the call records from the 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.


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# 1. Introduction

Avotus Professional is a call accounting and usage management solution for small to medium sized businesses. The solution comprises of the Avotus Professional application server, which is running OS Windows server 2003 with service pack 2. Co-resident with the Avotus Professional application is the Avaya DBA tool kit version 1.05, which is connected to the Communication Server 1000 (hereafter referred to as CS 1000). This DBA tool kit extracts the raw data from the DBA buffer of the CS 1000 and populates 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 tool kit on to the Avotus Professional server which communicates directly to the CS 1000 via network connectivity. Execute the DBA tool kit application to collect the raw CDR (Call Detail Record) from the DBA buffer of the CS 1000. Run the Avotus professional application to pull the raw call records from the database file and then generate the accounting reports using Avotus Telecom Billing System tool.

## 2.1. Interoperability Compliance Testing

The objective of this interoperability compliance testing is to verify that Avotus Professional can extract the raw call records from the collected database file of the Communication Server 1000 via the Avaya DBA tool kit. The Avotus Professional then formulates these call records in to customer readable call accounting reports. The call records were collected with the following call scenarios: Internal station to station calls, Inbound and Outbound calls with PSTN, Conference and Transfer.

## 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 Avotus Professional can be obtained by contacting Avotus technical support via email at support@avotus.com or by calling 1-800-840-2580.

# 3. Reference Configuration

**Figure 1** illustrates the network diagram configuration used during the compliance testing between the Avotus Professional application 3.19 and Avaya Communication Server 1000 Release 7.0.


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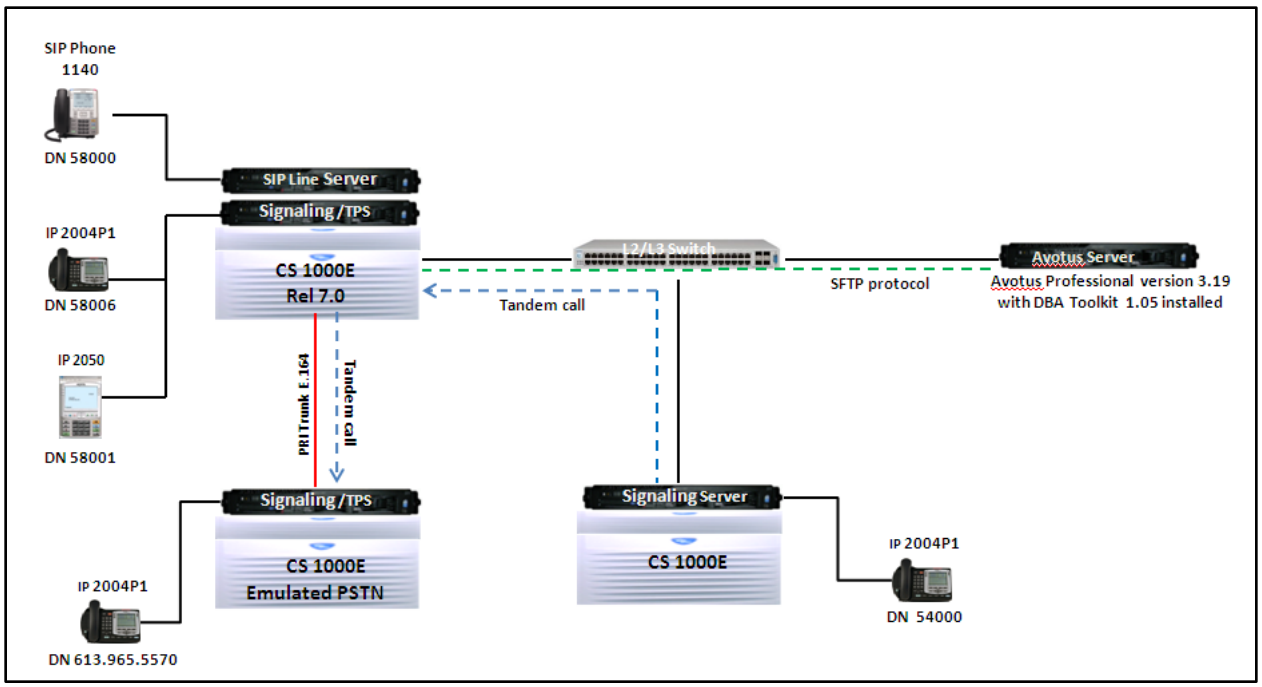



**Figure 1: Network Diagram Configuration**

# 4. Equipment and Software Validated

The following equipment and software were used during the lab testing:

| Equipment | Software Version |
|---|---|
| Avaya CS1000E | Call Server (CPPM): 7.00Q<br>Signalling Server (CPPM): 7.00.21 |
| Avaya IP Soft Phone 2050<br>Avaya IP Phone 1140<br>Avaya IP Phone 2004P2<br>Avaya IP Phone 2002P2 | 3.04.0003<br>0625C6O<br>0692D93<br>0604DC5 |
| Avaya DBA Toolkit | 1.05 |
| Avotus Professional | 3.19 |

# 5. Configure Avaya CS 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 please refer to **Section 10[1].**

This section provides only the steps on how to configure the CDR (Call Detail Record) feature on the CS 1000.


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To enable and set the password for the DBA FTP user on CS 1000 Co-res system, log in to the command line interface (CLI) of Linux base of the Call Server as an administrator and issue two commands below:

- **harden dba on** → to enable the DBA SFTP account
- **harden dba passwd** → to set the password for NT_S_TM_DBA account

The **Figure 2** below shows the example of how these commands were executed in the CS 1000 Co-res system.

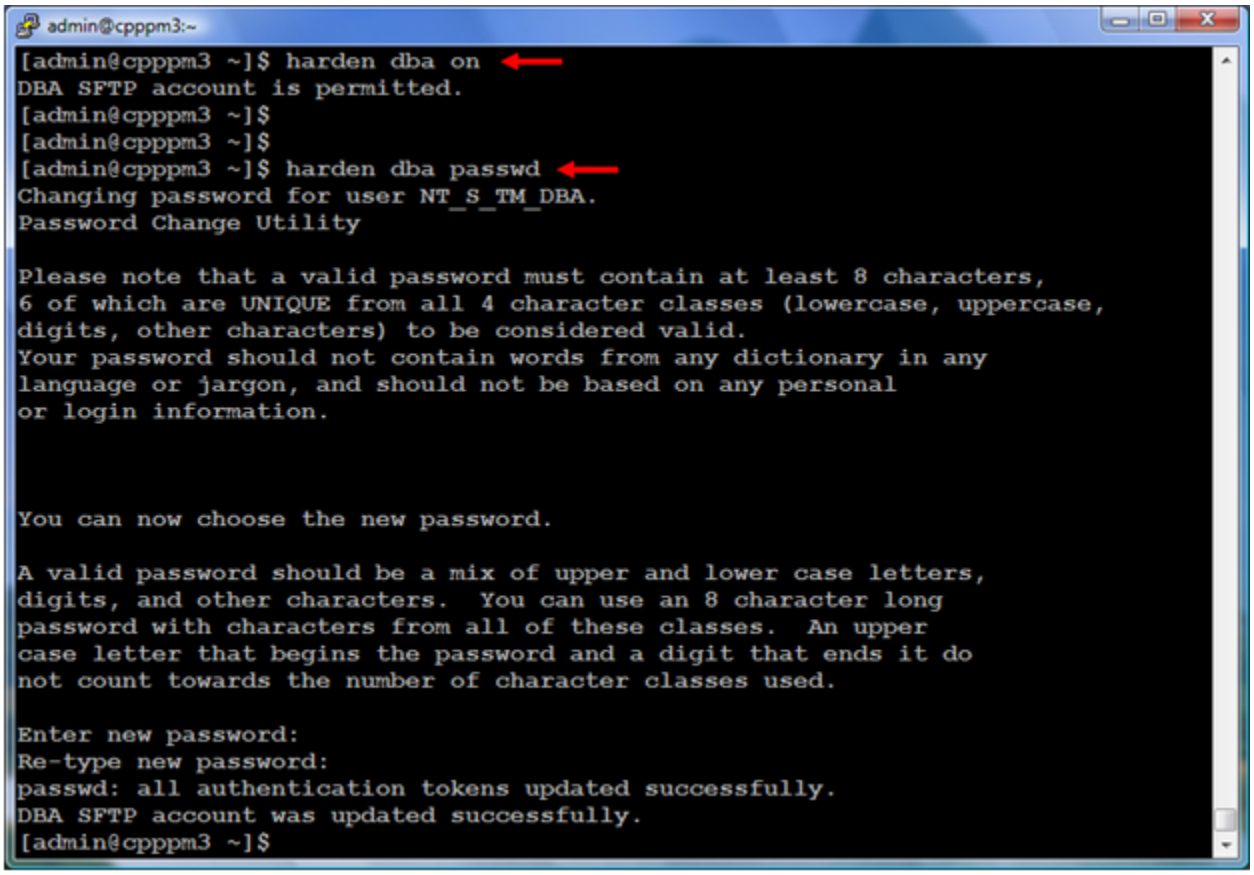



**Figure 2: Enable and set password for DBA FTP account**

In order for the Call Server Co-res system to allow the DBA Toolkit application to connect to its CDR buffer on the CS 1000, the IP address of the server where the DBA Toolkit was installed on needs to be added in the **Route** table of the **Base Manager** on the Call server. To do that, launch the **Unified Communication Management** (UCM) web page where the Call Server Co-res system was registered to, and from the UCM webpage launch the **Base Manager** web page of the Call Server as shown in **Figures 3 and 4**.


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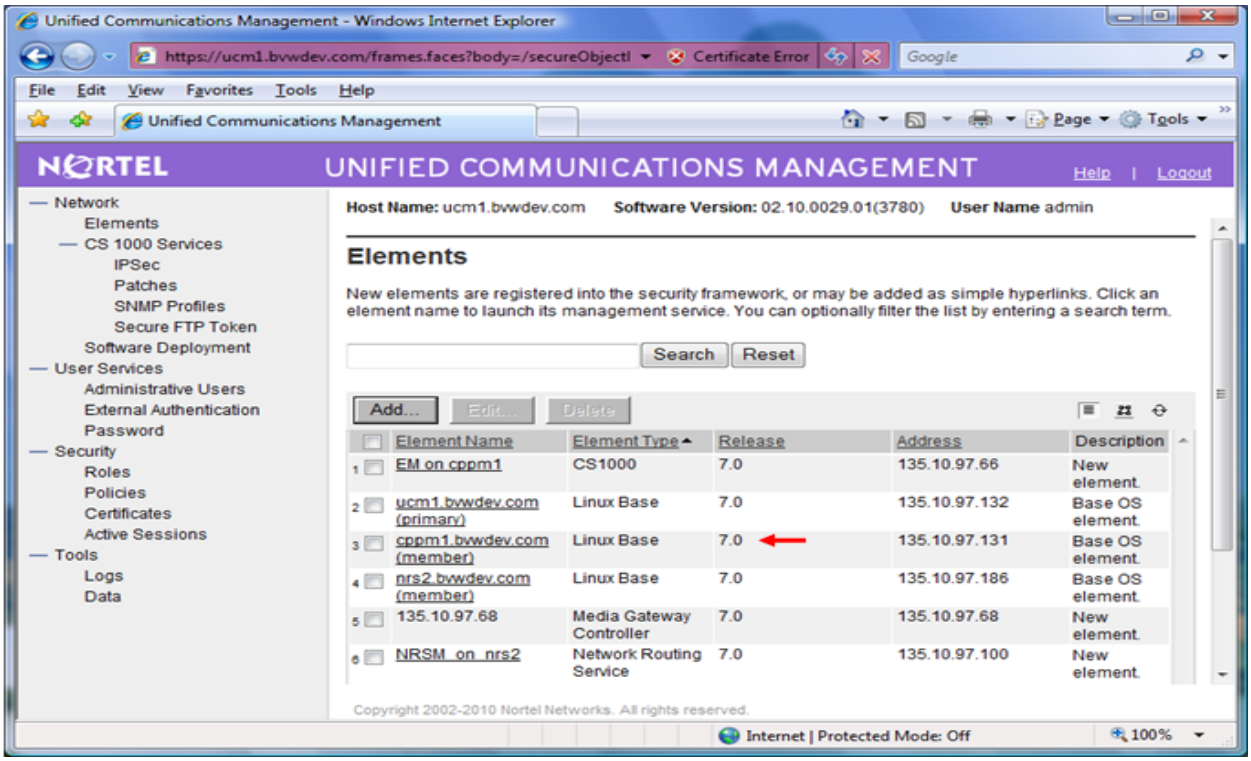



**Figure 3: UCM homepage of CS 1000 system**

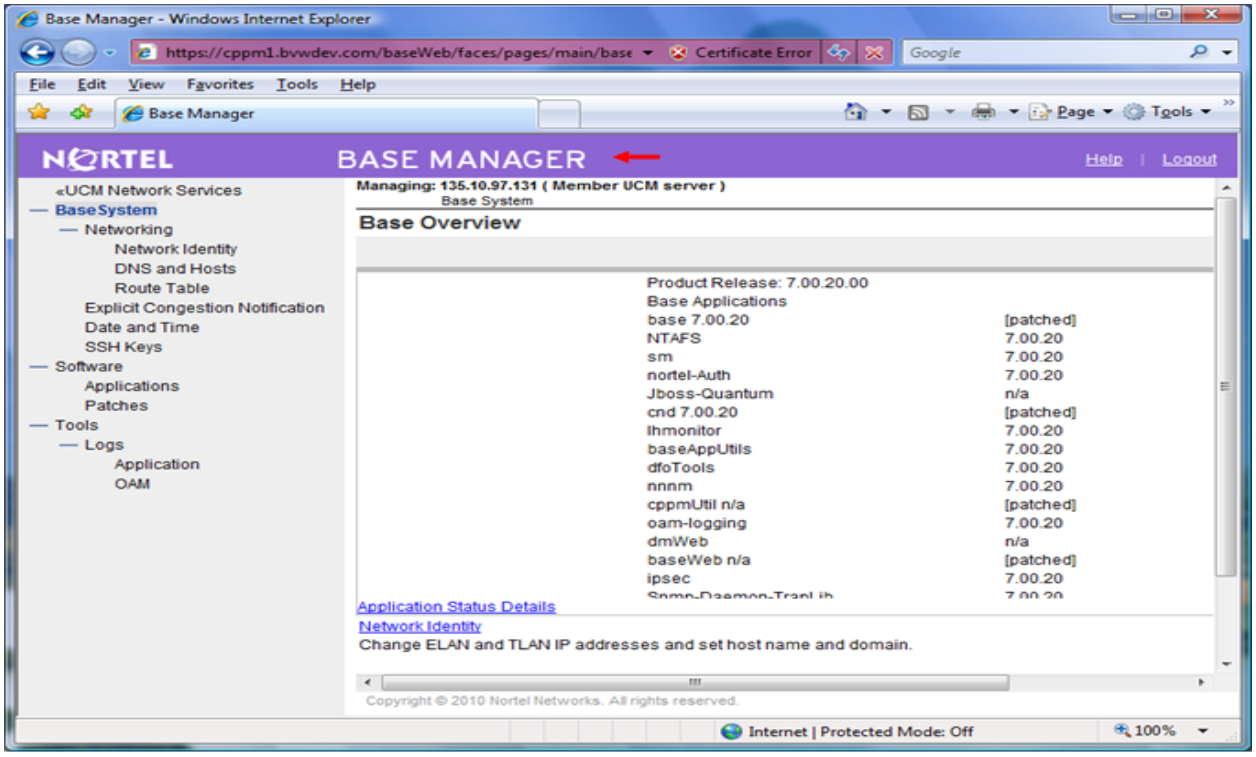



**Figure 4: Base Manager Webpage of CS 1000 Cores system**


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To add a route for the Call Server Co-res system, on the left menu column of the **Base Manager** webpage, navigate to the **Base System > Networking >Route Table**; the **Routes** table appears on the right side of the **Base Manager** webpage (not shown), click on the **Add** button and enter the IP address of the server where the DBA Toolkit resides as shown in **Figure 5**. Then click on the **Save** button to save this change.

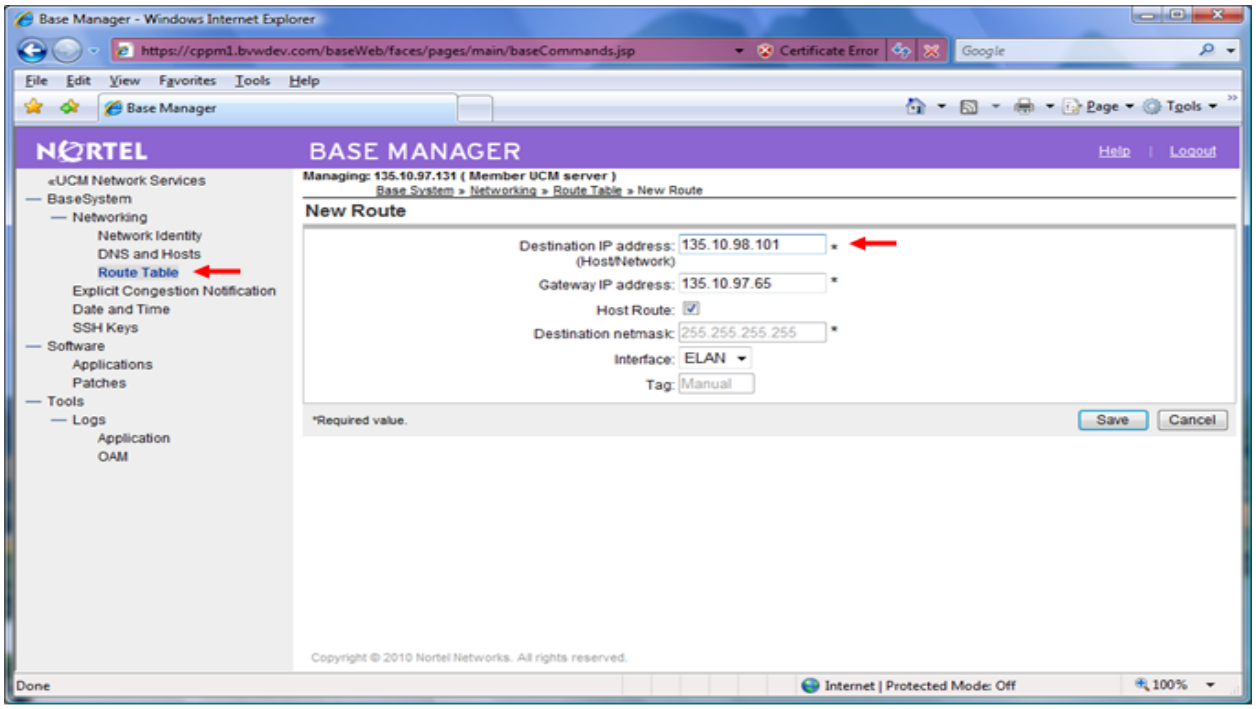



**Figure 5: Sample of adding route for Call Server Cores system**

To enable the CDR feature of the CS 1000 system, log in to the command line interface (CLI) of the Call Server as an administrator and issue the overlay command (**LD**) 15 as shown in **Figure 6,** which shows a sample of the output CDR data set on the CS 1000.

**LD 15**
**REQ CHG**
**TYPE CDR_DATA**
**CDR YES**
**BDI YES**


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**Figure 6: Sample of output of CDR data on CS1000**

To configure the new CDR that uses the DBA Toolkit, log in to the CLI of the Call Server and issue the overlay command (LD) 17 as shown in **Figure 7** which shows a sample output of the CS 1000 system parameters.

**LD 17**
**REQ CHG**
**TYPE PARM**
**FCDR NEW**

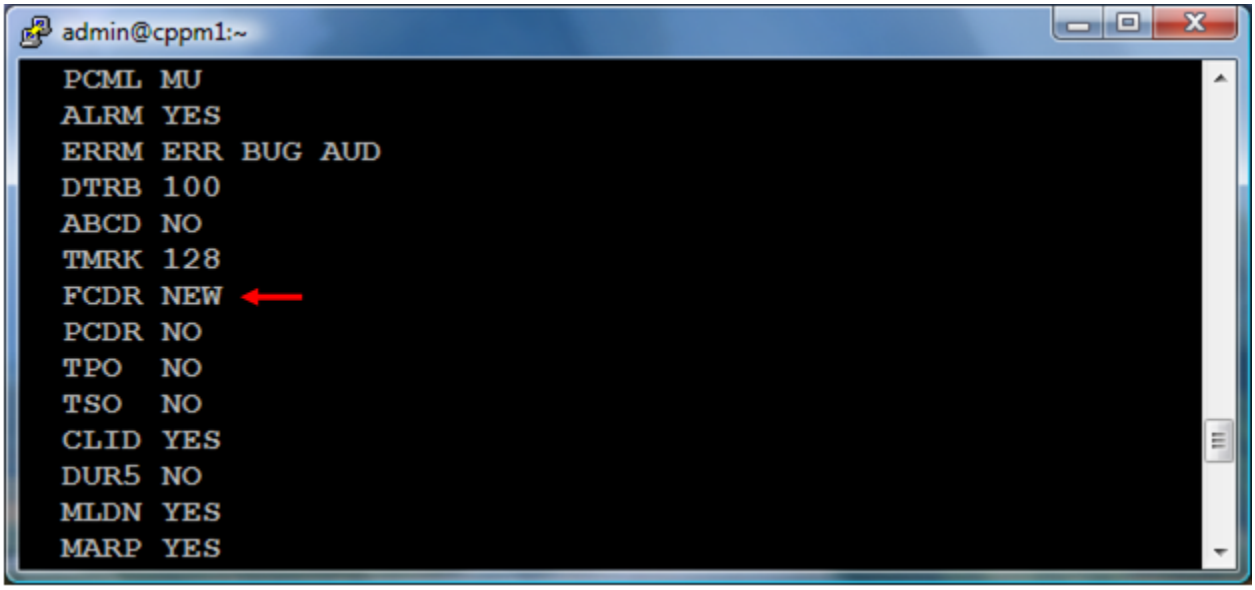



**Figure 7: Sample of output of CS100 system parameters**


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To enable buffering for the CDR data on the CS 1000, log in to the CLI of the Call Server and issue the overlay command (LD) 117 as shown in **Figure 8**.

**LD 117**
**= => ENL BUF CDR**

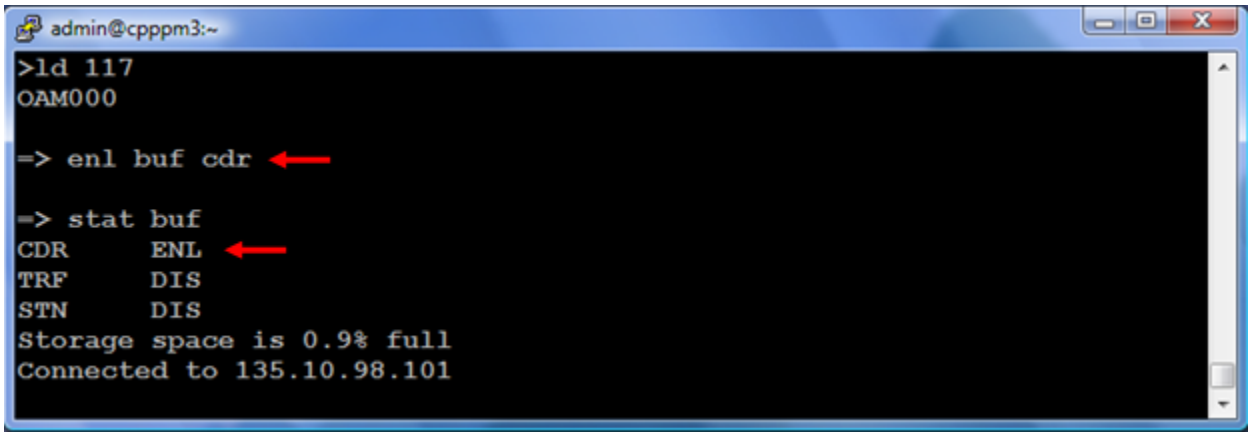



**Figure 8: Sample of enabling buffer for CDR on CS 1000**

To configure CDR in the Route Data Block (RDB), log in to the CLI of the Call Server and issue the overlay command (LD) 16 and enter values of the fields as shown in **Figure 9**.




**Figure 9: Sample of configuring CDR in the RDB**

To enable IP Phone for the CDR feature, log in to the CLI of the CS 1000, issue the overlay command (LD) 11 and enable the class of services for the CDR feature as shown below:


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**LD 11**
**REQ CHG**
**TYPE <IP Phone Type>**
**ECHG YES**
**ITEM CLS ABDA CMDA ICDA**

ABDA → Abandoned call record and Time to Answer Allowed
CMDA → Call Detail Monitoring Allowed (Station activity Call Detail Recording)
ICDA → Internal Call Detail Recording Allowed

# 6. Configure Avaya DBA Toolkit

This document assumes that the DBA Toolkit application was properly installed, this section provides the steps on how to configure the DBA Toolkit application to connect to the CS 1000 system.

On the server where the DBA Toolkit application was installed, navigate to the folder **C:\Programs File\Avaya Inc\DBA** and double click on the **dba.exe** to launch the DBA application. The *Data Buffering & Access* window appears as shown **Figure 10**.

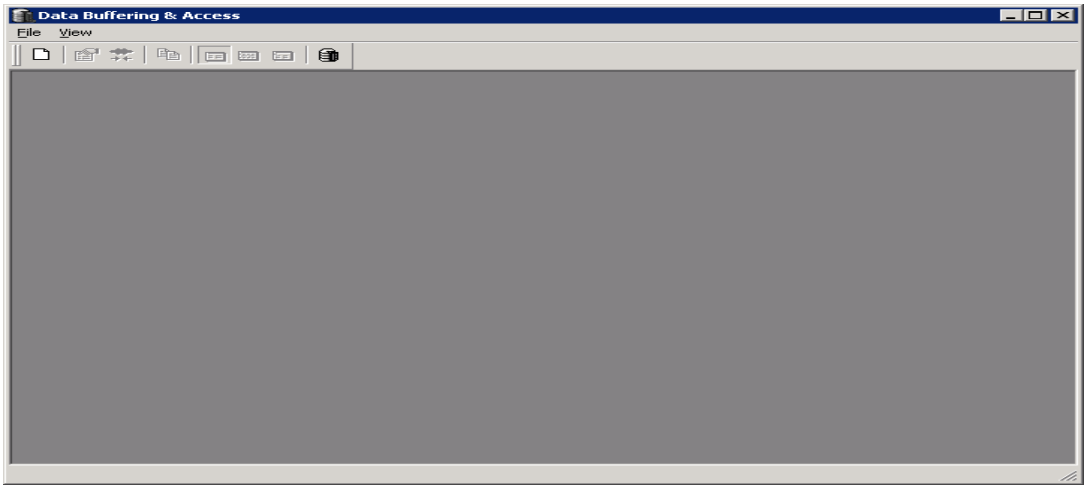



**Figure 10: Main window of DBA application**

To create a new session on the DBA Toolkit application, from the *Data Buffering and Access* window, navigate to the menu **File > New Session,** the *New Session* window appears as shown in **Figure 11**. Enter the IP address of the Call Server of the CS 1000 that the DBA application is going to connect to, the CS 1000's **admin** username and password, and the FTP **NT_S_TM_DBA** username and its password that was created in **Section 5**.

Click on the **Connect Now** button to connect to the CS 1000 system.


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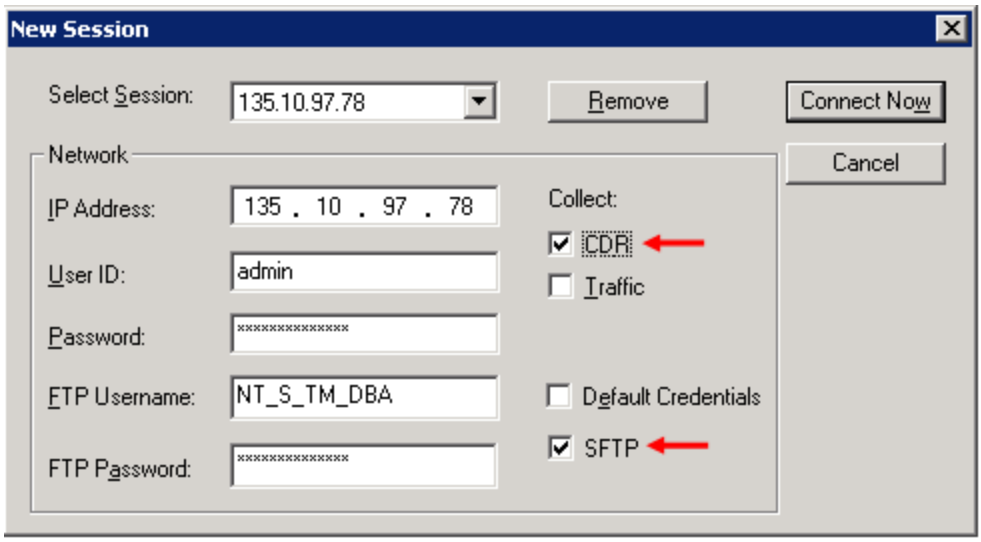



**Figure 11: Configure DBA connecting to CS 1000**

**Figure 12** below shows the DBA application successfully connected to the CS 1000 system.

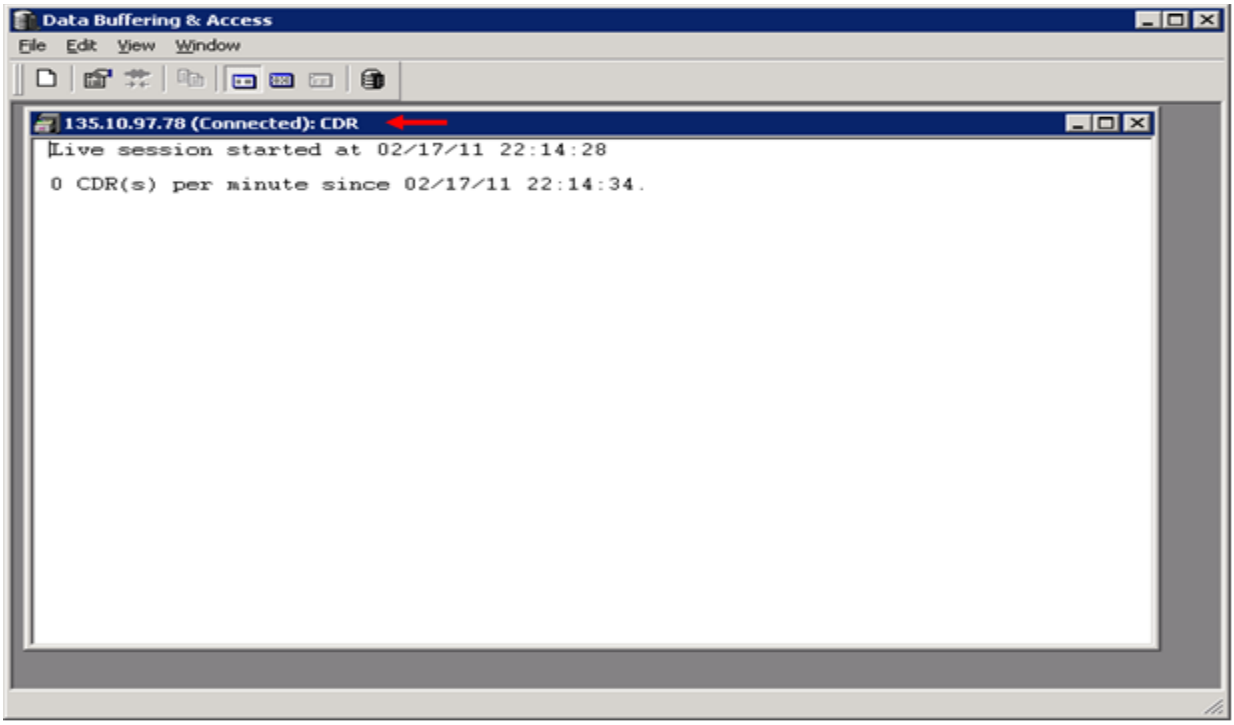



**Figure 12: The connection status of DBA with CS 1000**

To verify that the call records can be pulled from the CS 1000 DBA buffer and stored on the local database of the DBA tool kit server, place some telephone calls on the CS 1000, wait at least one minute after polling completes and observe these calls successfully outputs as shown in **Figure 13**.


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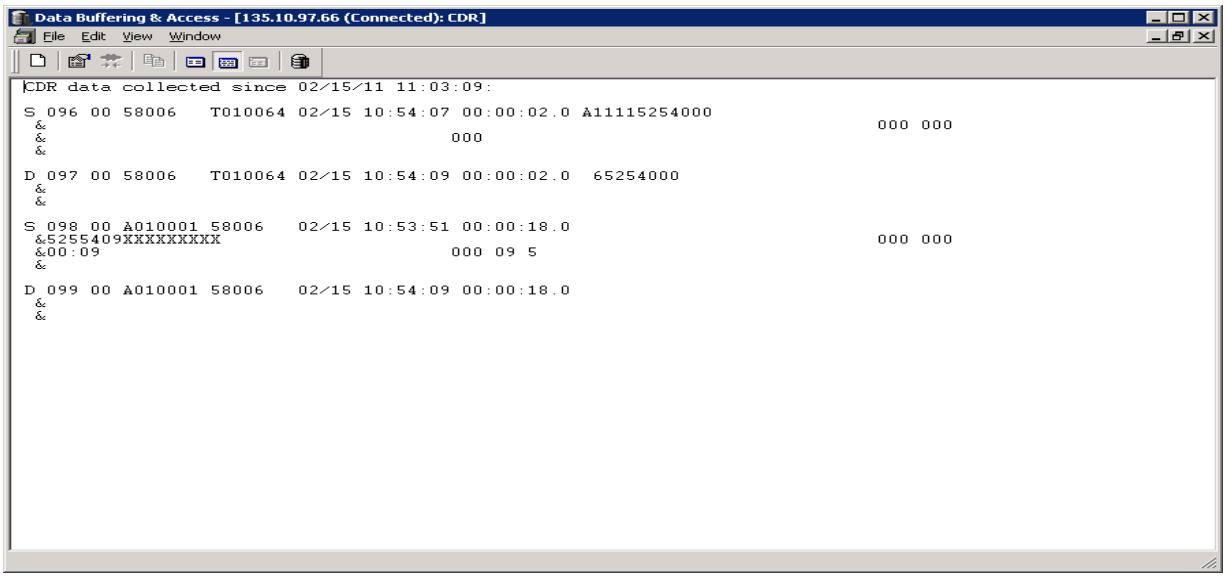



**Figure 13: Sample of call records outputted to DBA Toolkit**

# 7. Configure the Avotus Professional

This document assumes that the Avotus Professional application was properly installed and configured by the Avotus engineer. This section only provides the steps how to set up the Avotus Professional to collect the data records from the DBA detail1.img file and process them to generate the call accounting reports.
This example only shows a brief configuration of how to collect the data and generate the call accounting reports for the purpose of verifying that the CDR data was extracted and processed correctly.

Login to Avotus Professional Server as an administrator by double-clicking the **Avotus** icon to launch the Professional application (not shown). The **Avotus administrator** page will appear as shown. Then double click on the **Telecom Billing System** highlighted as shown in **Figure 14.**

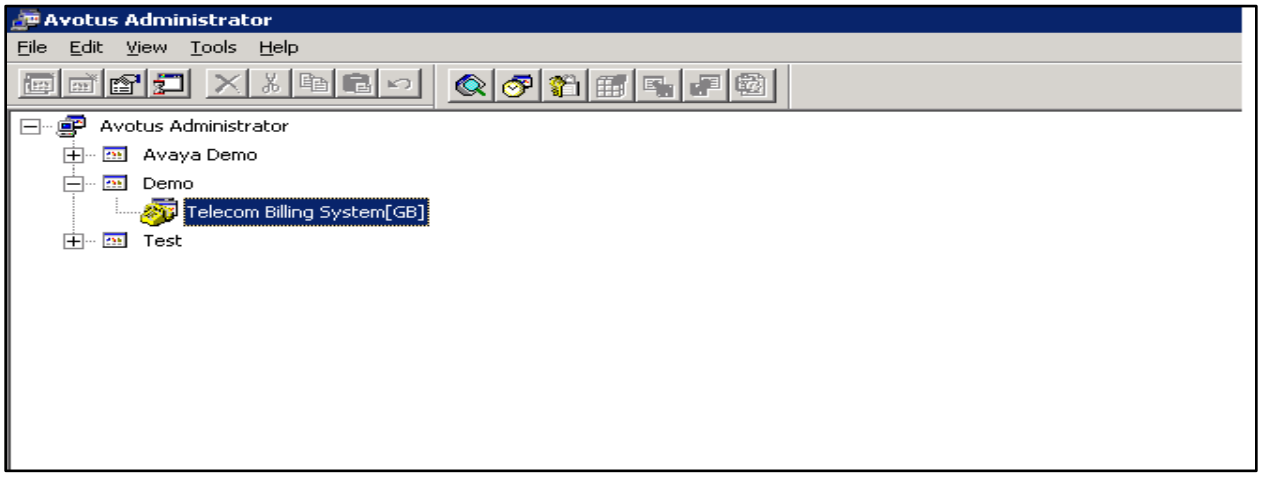



**Figure 14: Telecom Billing System Page**


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## 7.1. Collection of the Call Detail Records

This section describes how to configure the Avotus application to extract the raw CDR records from the DBA database file detail1.img and to formulate it into a readable format.

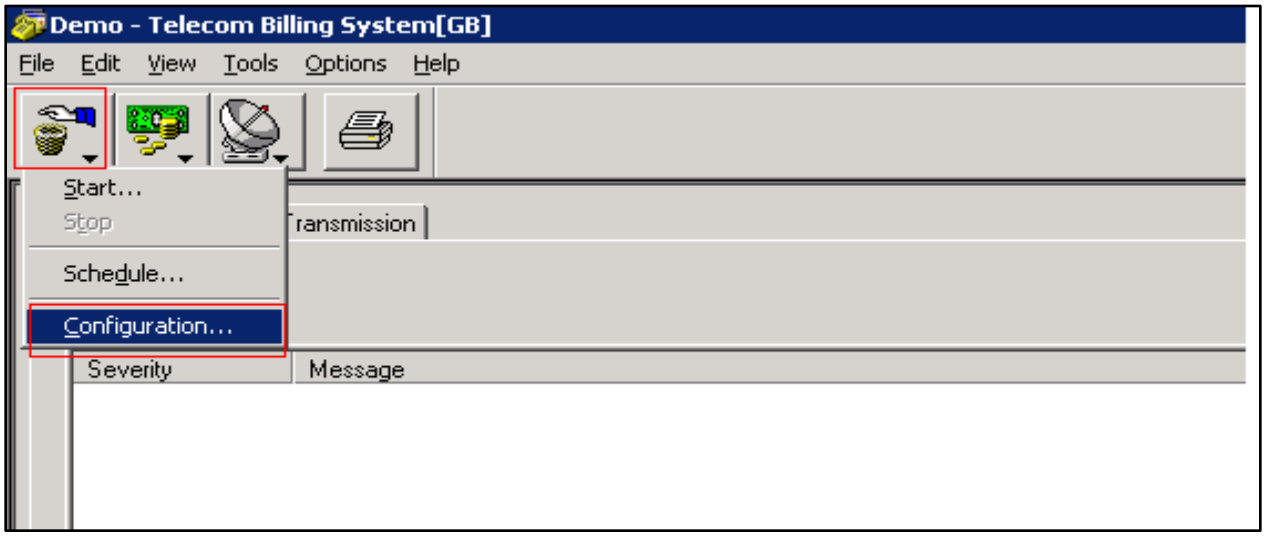



**Figure 15: Configuration of the Data Collection**

Click on the **Collection** icon shown in **Figure 15** and then select the **Configuration** menu option. The **System Configuration** page will appear as shown in **Figure 16.** Do the following**:**

- Select the **Collection** tab
- **Connection Settings** – choose the **File** type from the pull down menu at the **Type** attribute.
- **File Name** – Select the file name and its path as shown in **Figure 16**
- **Scripts –** Select the **Collection Script** as **sl1new.col**
- Click on the **Apply** and then the **OK** button


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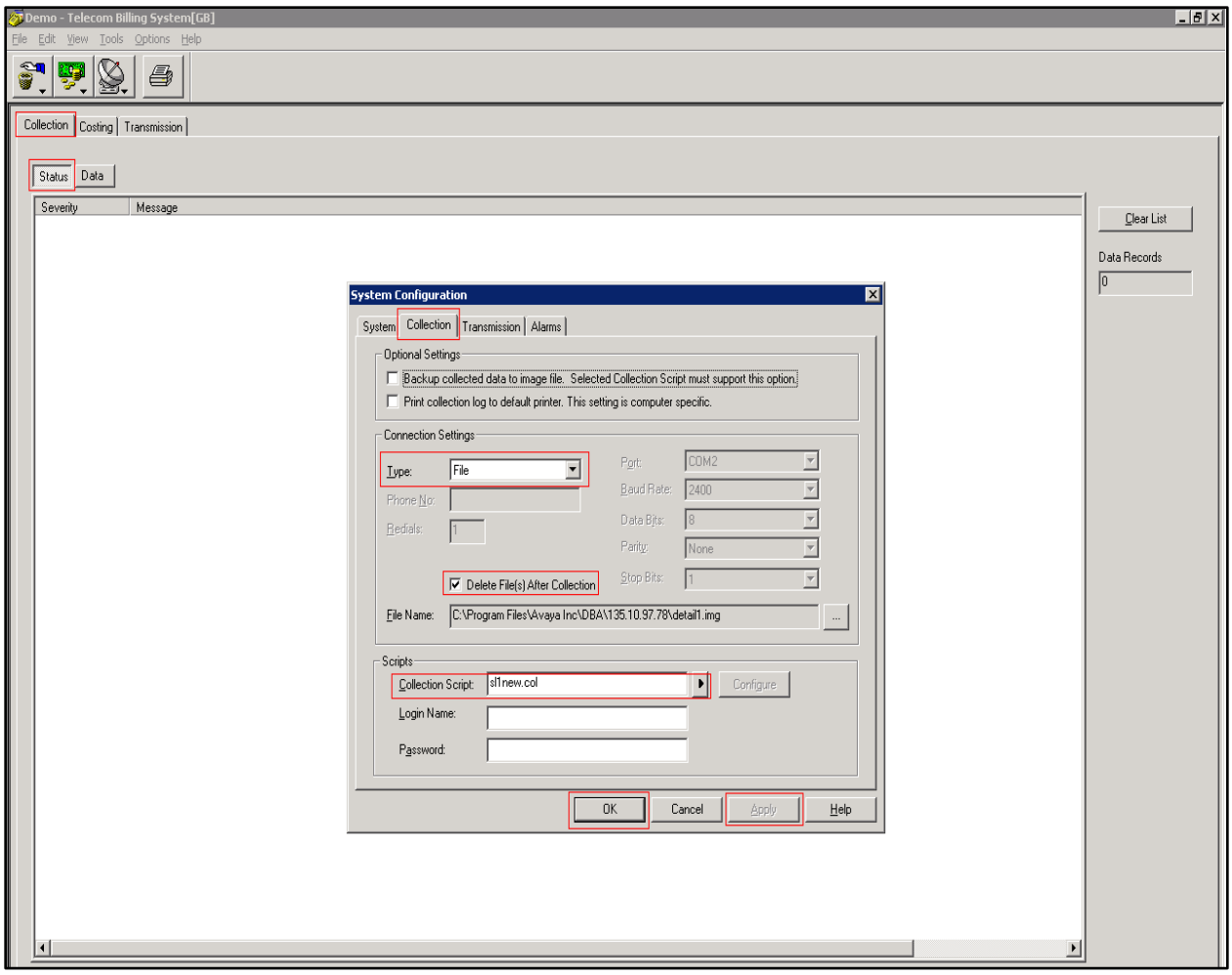



**Figure 16: Configuration Collection Dialog Box**

Start the collection process, click on the **Collection > Start** as shown in **Figure 15.** The **Start Collection** dialog box will appear. Choose the option as highlighted in the red box (which is default) and click on the **Start** button as show in **Figure 17.**

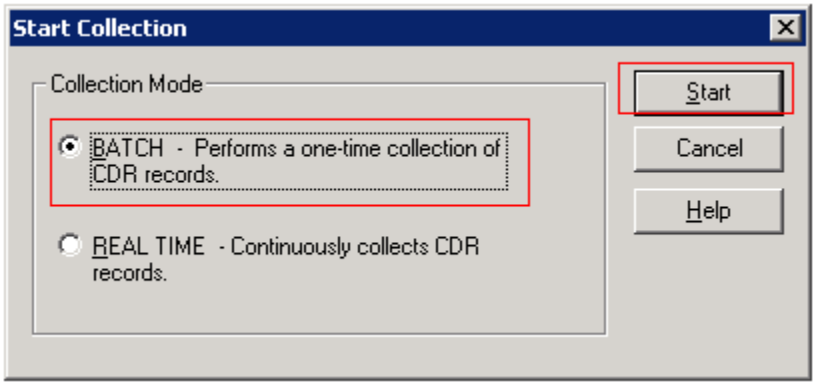



**Figure 17: Start Collection Dialog Box**


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The Collection process will run and complete. The raw CDR data are now being presented in a readable format as shown in **Figures 18 and 19.**

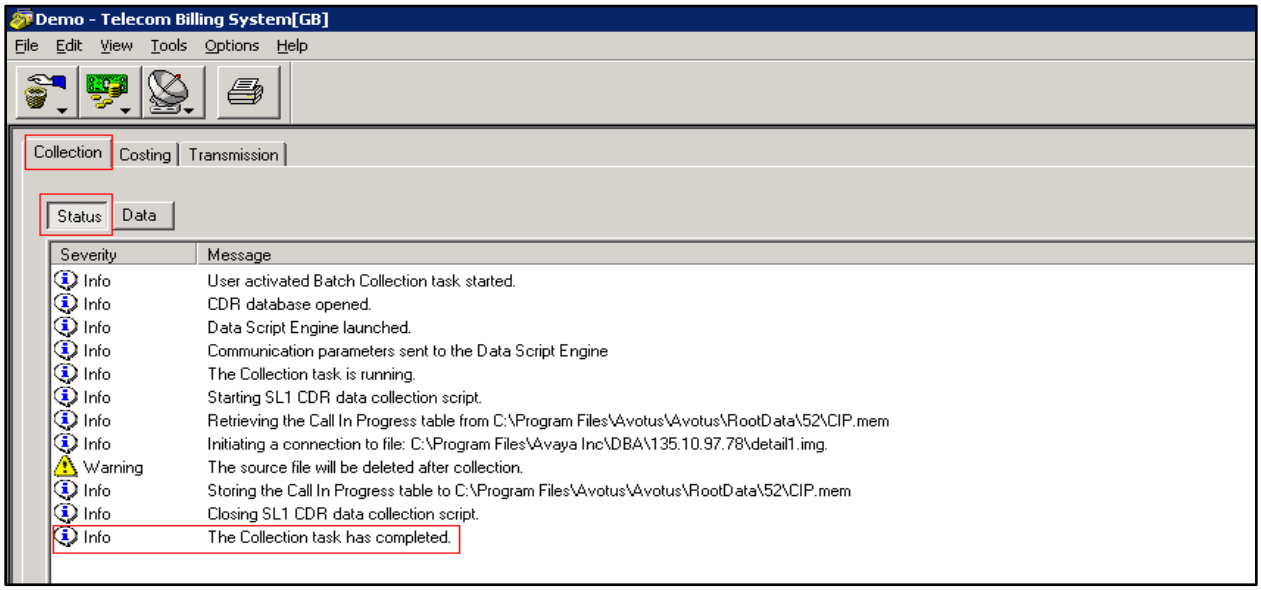



**Figure 18: Collection Process Status**

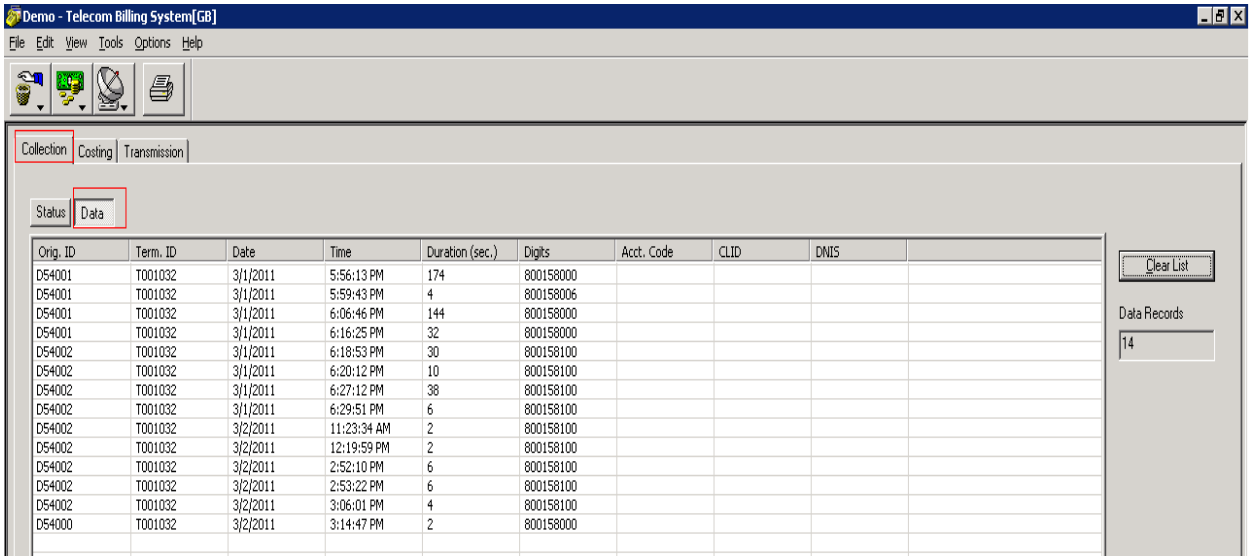



**Figure 19: Collection Data Call Records**

## 7.2. Create Costing Record

This section describes how to do the costing on the call records which have been collected as shown in **Section 7.1**. It is assumed that the costing configuration has been set up by the Avotus engineer. As shown in **Figure 20,** Click on the **Costing** tab, then click on the **Costing tool (icon in red box) > Start**.


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The **Start Costing** dialog box will appear. Choose the option as highlighted in red box and click on the **Start** button as show in **Figure 20.**

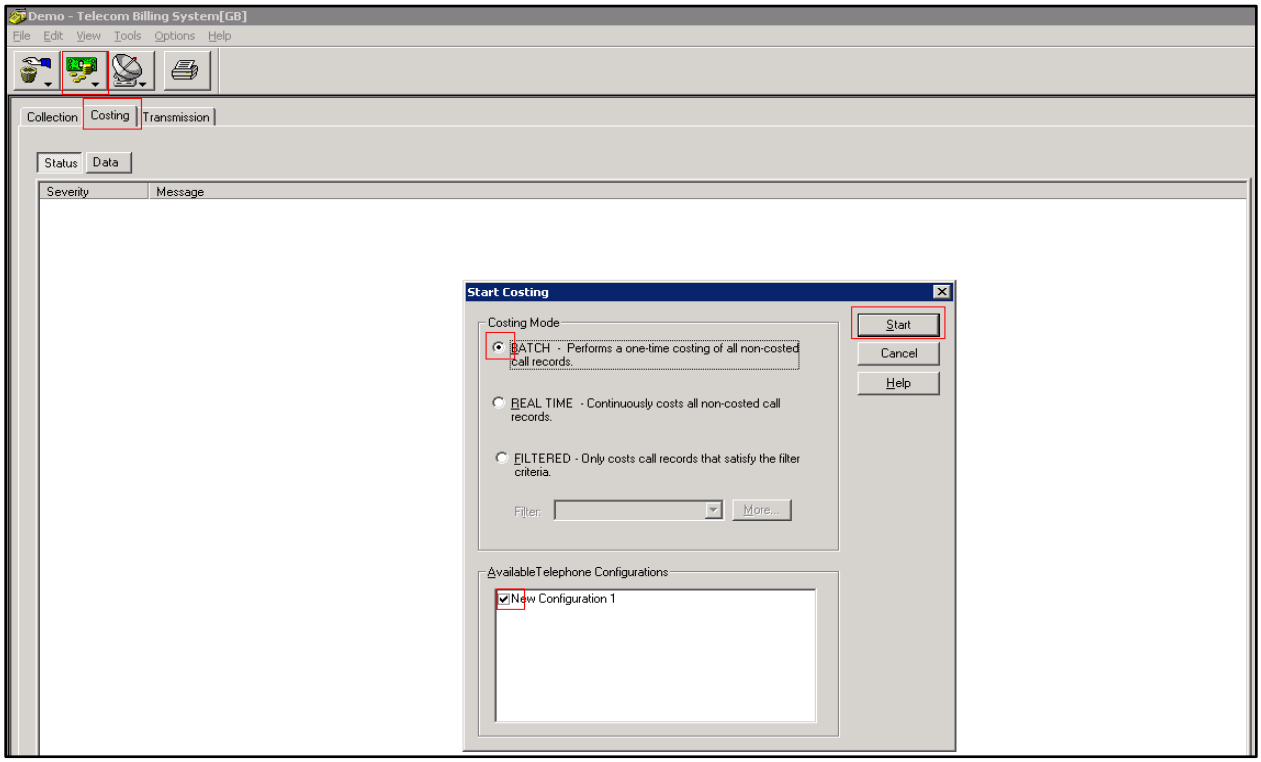



**Figure 20: Start Costing Dialog Box**

The Costing process will run and complete as shown in **Figures 21** and **22**. The calls have now been associated with a charge according to the policy for different call types as internal, long distance, international and so on**.**

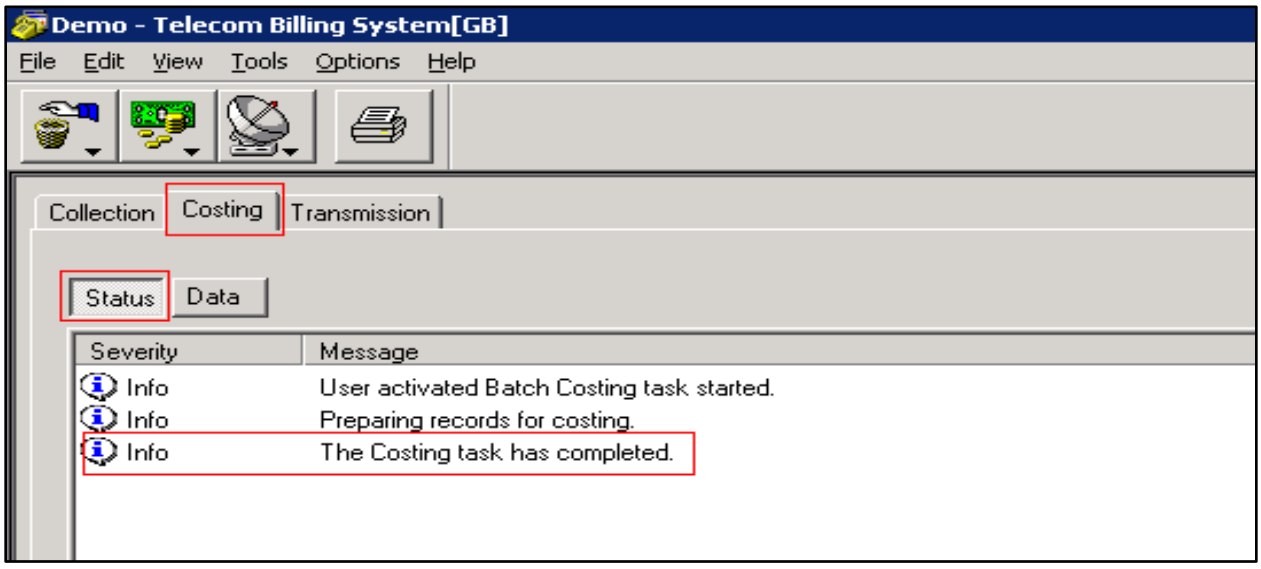
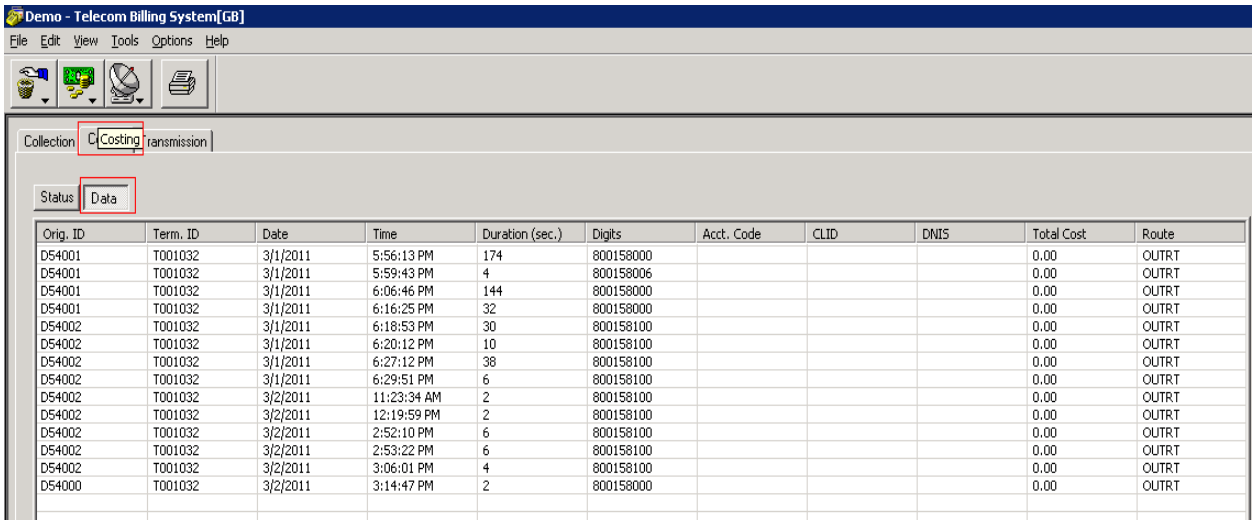



**Figure 21: Costing Process Status**


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| Orig. ID | Term. ID | Date | Time | Duration (sec.) | Digits | Acct. Code | CLID | DNIS | Total Cost | Route |
|---|---|---|---|---|---|---|---|---|---|---|
| D54001 | T001032 | 3/1/2011 | 5:56:13 PM | 174 | 800158000 | | | | 0.00 | OUTRT |
| D54001 | T001032 | 3/1/2011 | 5:59:43 PM | 4 | 800158006 | | | | 0.00 | OUTRT |
| D54001 | T001032 | 3/1/2011 | 6:06:46 PM | 144 | 800158000 | | | | 0.00 | OUTRT |
| D54001 | T001032 | 3/1/2011 | 6:16:25 PM | 32 | 800158000 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/1/2011 | 6:18:53 PM | 30 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/1/2011 | 6:20:12 PM | 10 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/1/2011 | 6:27:12 PM | 38 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/1/2011 | 6:29:51 PM | 6 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/2/2011 | 11:23:34 AM | 2 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/2/2011 | 12:19:59 PM | 2 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/2/2011 | 2:52:10 PM | 6 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/2/2011 | 2:53:22 PM | 6 | 800158100 | | | | 0.00 | OUTRT |
| D54002 | T001032 | 3/2/2011 | 3:06:01 PM | 4 | 800158100 | | | | 0.00 | OUTRT |
| D54000 | T001032 | 3/2/2011 | 3:14:47 PM | 2 | 800158000 | | | | 0.00 | OUTRT |

**Figure 22: Costing Data**

## 7.3. Generating the Telecom Billing System Reports

This section illustrates how to generate the billing reports for the call records being processed by the Avotus application. This example will only show the report of a simple station to station internal call.

Click on the **Reports** icon on the icon panel as shown in **Figure 23**.

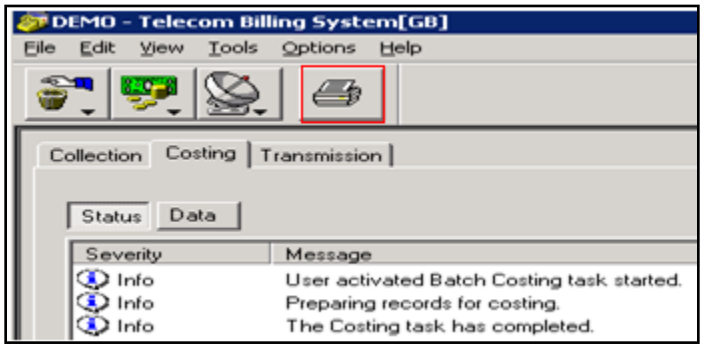



**Figure 23: Generate Report Icon**


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The **Reporting** dialog box will appear. Navigate to the **Telecom Billing System Reports > Cost Analysis > Extension Detail Report**. Then click on the **Go** button to generate the report as shown in **Figure 24**.

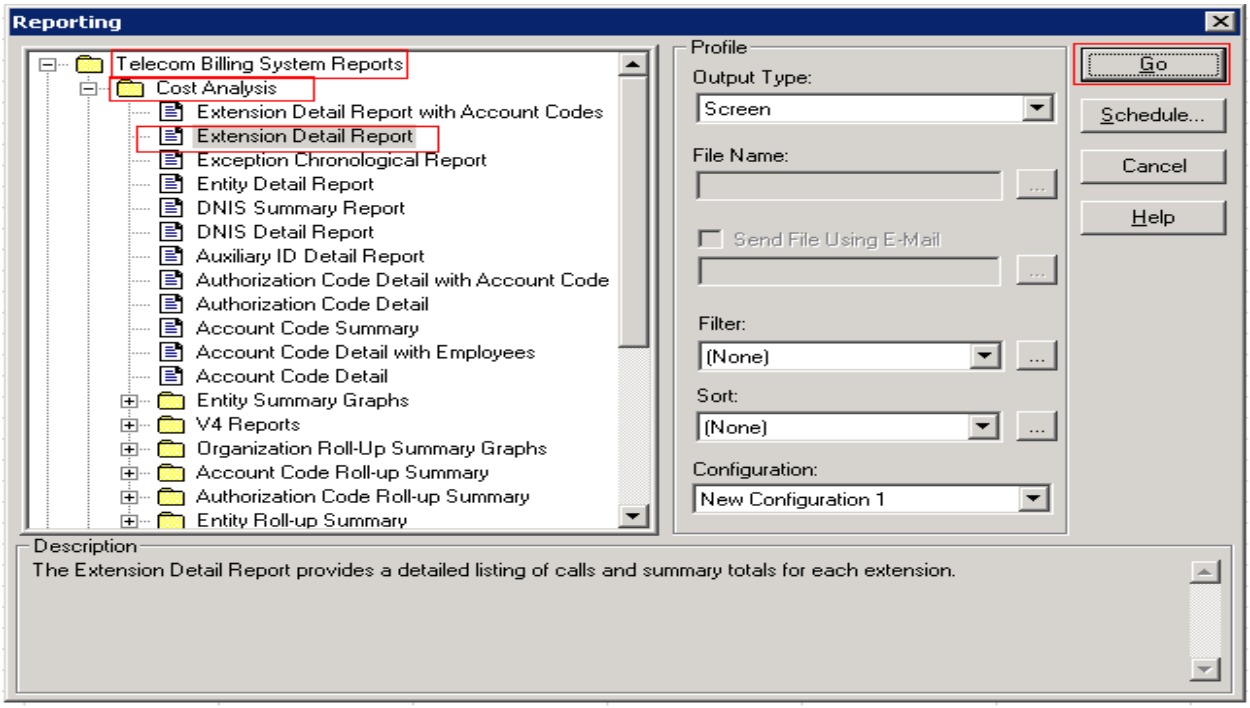



**Figure 24: Reporting Dialog Box**

The sample extension detail report is shown in **Figure 25.**


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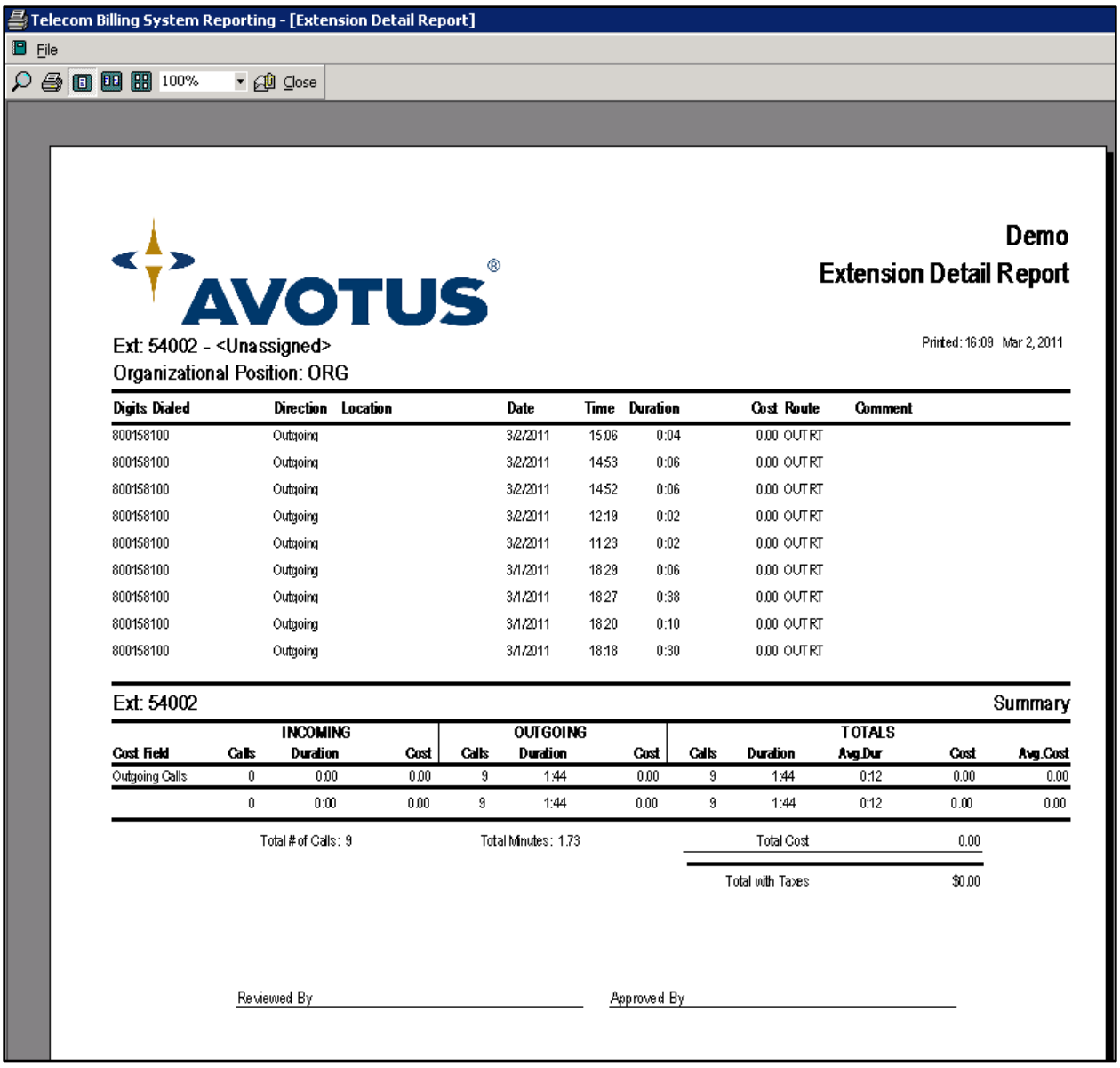



**Figure 25: Extension Detail Report**


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# 8. Verification Steps

The following are typical steps to verify the interoperability between the Avotus Professional application and Avaya CS 1000.

- Connect the DBA Toolkit application to the CS 1000 system.
- Configure the Avotus Professional application to retrieve call records from the DBA Toolkit application.
- Place various call types such as: internal, outgoing, incoming, PSTN and tandem calls 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 Avotus Professional server, start the collection process and generate the detail call record database.
- Generate the call accounting report
- Verify that the report shows correctly information of call records such as Date/Time, Duration, Extension used, Report Dialled Number, Call Type, Auth Call Code, Account Code…etc.

# 9. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 2**. Avotus Professional version 3.19 is considered compliant with the Avaya Communication Server 1000 Release 7.0.

# 10. Additional Reference

Product documentation for Avaya CS 1000 products may be found at:
https://support.avaya.com/css/Products/

Product documentation for Avotus Professional products can be found at:
http://www.avotus.com/mid_market.asp

[1] Avaya CS1000 Documents:
Avaya Communication Server 1000E Installation and Commissioning
Avaya CS 1000 Co-resident Call Server and Signalling Server Fundamentals
Avaya CS 1000 Element Manager System Reference – Administration
Avaya Call Detail Recording Fundamentals Communication Server 1000


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