



Avaya Solution & Interoperability Test Lab

Application Notes for the DATEL *CallSWEET!* with Avaya Communication Manager - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the DATEL *CallSWEET!* 6.0.1 to successfully interoperate with Avaya Communication Manager 3.1.

CallSWEET! is a call accounting software that interoperates with Avaya Communication Manager over a Call Detail Recording link running the Avaya Reliable Session Protocol. Call records can be generated for various types of calls. The DATEL *CallSWEET!* collects and processes the call records. Serviceability and performance tests were conducted to assess the reliability of the solution.

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.

1 Introduction

The overall objective of this interoperability compliance testing is to verify that the DATEL *CallSWEET!* can interoperate with Avaya Communication Manager 3.1. The DATEL *CallSWEET!* receives CDR data from Avaya Communication Managers to provide customers all types of management information reports. The interface to Avaya Communication Manager is through the Reliable Session Protocol (RSP) over the TCP/IP protocol.

The DATEL *CallSWEET!* is a Web-based call accounting solution that manages capital investments in telecommunications for any business size. By monitoring and reporting on call records, *CallSWEET!* facilitates budgeting, allocation of phone expenses, client and resident billing.

Since the DATEL *CallSWEET!* can receive CDR records from multiple Avaya Communication Managers, the CDR collection was verified for two Avaya Communication Managers during the compliance test.

Figure 1 illustrates the network configuration used to verify the compliance test. The configuration details provided in these Application Notes, focus on the interfaces between Avaya Communication Manager and the DATEL *CallSWEET!*. **Figure 1** shows two separate sites each running Avaya Communication Manager on separate media servers. Site A is comprised of Avaya S8700 Media Servers and a G650 Media Gateway, and has connections to the following: Avaya 4600 Series IP Telephones, Avaya Digital Telephones, and a PRI trunk to the PSTN. Site B is comprised of an Avaya S8300 Media Server with a G350 Media Gateway, and has connections to Avaya 4600 Series IP Telephones and an Avaya Digital Telephone. Site A and B are networked via an IP trunk.

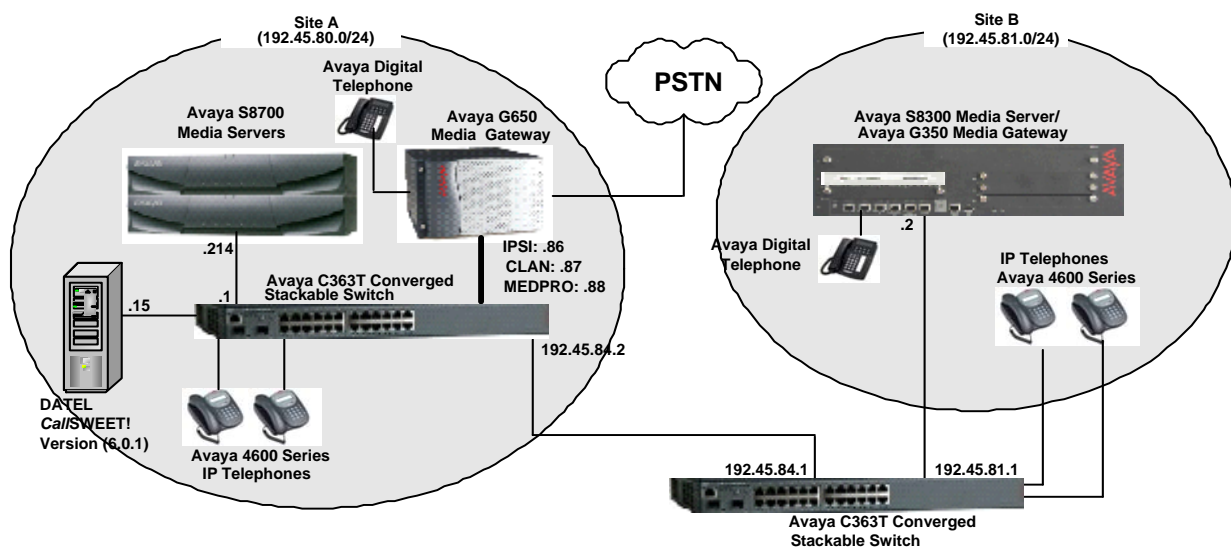


Figure 1. Test configuration of *CallSWEET!* with Avaya Communication Manager

2 Equipment and Software Validated

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

Equipment		Software
Avaya S8700 Media Server		Avaya Communication Manager 3.1 (R013x.01.0.628.6)
Avaya G650 Media Gateway		
	TN2312BP IPSI TN799DP CLAN TN2302AP MEDPRO	HW11 FW030 HW20 FW017 HW01 FW108
Avaya S8300 Media Server		Avaya Communication Manager 3.1 (R013x.01.0.628.6)
Avaya G350 Media Gateway		25.23.0
Avaya 4600 Series IP Telephone		
	4620	2.3
	4625	2.5
Avaya Digital Telephones		-
Avaya C363T Converged Stackable Switch (Layer 3)		4.5.14
DATEL <i>CallSWEET!</i> call accounting software OS – Windows Server 2003		6.0.1

3 Configure Avaya Communication Manager

This section provides the procedures for configuring Call Detail Recording (CDR) in Avaya Communication Manager. All configuration changes in Avaya Communication Manager are performed through the System Access Terminal (SAT). These steps describe the procedure used for the Avaya S8700 Media Server. All steps are the same for the other media servers unless otherwise noted. An Avaya Communication Manager is configured to generate CDR records and sends CDR records to the IP address of *CallSWEET!*, using the RSP over TCP/IP. For the Avaya S8700 Media Server, the CDR link originates at the IP address of the C-LAN board, and terminates at *CallSWEET!*. For the Avaya S8300 Media Server, the CDR link originates at the IP address of the local media server (with node-name – “procr”) and terminates at the *CallSWEET!*.

The highlights in the following screens indicate the parameter values used during the compliance test.

Use the **change node-names ip** command to create a new node name, for example, **CDR-DATEL**. This node name is associated with the IP Address of the DATEL *CallSWEET!*. The CLAN entry on this form was previously administered.

```
change node-names ip Page 1 of 1
```

		IP NODE NAMES	
Name	IP Address	Name	IP Address
CDR-DATEL	192.45 .80 .181		.
CLAN	192.45 .80 .87		.
MEDPRO	192.45 .80 .88		.
S8300	192.45 .81 .11		.
default	0 .0 .0 .0		.
procr	192.45 .80 .214		.

Use the **change ip-services** command to define the CDR link to use the RSP over TCP/IP. To define a primary CDR link, the following information should be provided:

- Service Type: **CDR1** [If needed, a secondary link can be defined by setting Service Type to CDR2.]
- Local Node: **CLAN** [For the Avaya S8700 Media Server, the Local Node is set to the node name of the C-LAN board. If the Avaya S8300 Media Server was utilized, set the Local Node to “procr”.]
- Local Port: **0** [The Local Port is fixed to 0 because Avaya Communication Manager initiates the CDR link.]
- Remote Node: **CDR-DATEL** [The Remote Node is set to the node name previously defined.]
- Remote Port: **9000** [The Remote Port may be set to a value between 5000 and 64500 inclusive, and must match the port configured in the DATEL *CallSWEET!*.]

```
change ip-services Page 1 of 4
```

		IP SERVICES			
Service Type	Enabled	Local Node	Local Port	Remote Node	Remote Port
CDR1		CLAN	0	CDR-DATEL	9000

On Page 3 of the IP SERVICES form, enable the Reliable Session Protocol (RSP) for the CDR link by setting the Reliable Protocol field to **y**. The value in the Packet Resp Timer field is set to **60** seconds during the compliance test. This is the value recommended by DATEL.

```
change ip-services Page 3 of 4
```

		SESSION LAYER TIMERS			
Service Type	Reliable Protocol	Packet Resp Timer	Session Connect Message Cntr	SPDU Cntr	Connectivity Timer
CDR1	y	60	3	3	60

Enter the **change system-parameters cdr** command from the SAT to set the parameters for the type of calls to track and the format of the CDR data. The example below shows the settings used during the compliance test. Provide the following information:

- CDR Date Format: **month/day**
- Primary Output Format: **customized**
- Primary Output Endpoint: **CDR1**

The remaining parameters define the type of calls that will be recorded and what data will be included in the record. See reference [2] for a full explanation of each field. The test configuration used some of the more common fields described below.

- Intra-switch CDR: **y** [Allows call records for internal calls involving specific stations. Those stations must be specified in the INTRA-SWITCH CDR form.]
- Record Outgoing Calls Only?: **n** [Allows incoming trunk calls to appear in the CDR records along with the outgoing trunk calls.]
- Outg Trk Call Splitting?: **y** [Allows a separate call record for any portion of an outgoing call that is transferred or conferenced.]
- Inc Trk Call Splitting?: **y** [Allows a separate call record for any portion of an incoming call that is transferred or conferenced.]

When the **customized** format is selected for the Primary Output Format field, the CDR SYSTEM PARAMETERS form adds a page.

```

change system-parameters cdr                                     Page 1 of 1
                                CDR SYSTEM PARAMETERS

Node Number (Local PBX ID): 1                                CDR Date Format: month/day
Primary Output Format: customized                            Primary Output Endpoint: CDR1
Secondary Output Format:
  Use ISDN Layouts? n
  Use Enhanced Formats? n      Condition Code 'T' For Redirected Calls? n
Modified Circuit ID Display? n      Remove # From Called Number? n
Record Outgoing Calls Only? n      Intra-switch CDR? y
Suppress CDR for Ineffective Call Attempts? y      Outg Trk Call Splitting? y
Disconnect Information in Place of FRL? n      Outg Attd Call Record? y
                                                Interworking Feat-flag? n
Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
                                                Calls to Hunt Group - Record: member-ext
Record Called Vector Directory Number Instead of Group or Member? n

Inc Trk Call Splitting? y      Inc Attd Call Record? y
Record Non-Call-Assoc TSC? n      Call Record Handling Option: warning
Record Call-Assoc TSC? n      Digits to Record for Outgoing Calls: dialed
Privacy - Digits to Hide: 0      CDR Account Code Length: 6

```

On Page 2 of the CDR SYSTEM PARAMETERS form, add specific Data Item and Length of the data item. The following screen shows a sample customized format.

change system-parameters cdr			Page 2 of 2		
CDR SYSTEM PARAMETERS					
Data Item - Length		Data Item - Length		Data Item - Length	
1: time	- 4	17: node-num	- 2	33:	-
2: duration	- 4	18: ins	- 3	34:	-
3: cond-code	- 1	19: ixc-code	- 3	35:	-
4: code-dial	- 4	20: bcc	- 1	36:	-
5: code-used	- 4	21: ma-uui	- 1	37:	-
6: dialed-num	- 15	22: res_flag	- 1	38:	-
7: calling-num	- 10	23: tsc_ct	- 4	39:	-
8: acct-code	- 15	24: tsc_flag	- 1	40:	-
9: auth-code	- 7	25: space	- 1	41:	-
10: space	- 2	26: date	- 6	42:	-
11: frl	- 1	27: space	- 1	43:	-
12: in-crt-id	- 3	28: vdn	- 5	44:	-
13: out-crt-id	- 3	29: return	- 1	45:	-
14: feat-flag	- 1	30: line-feed	- 1	46:	-
15: attd-console	- 2	31:	-	47:	-
16: in-trk-code	- 4	32:	-	48:	-

Record length = 111

If the Intra-switch CDR field is set to **y** on Page 1 of the CDR SYSTEM PARAMETERS form, then use the **change intra-switch-cdr** command to define the extensions that will be subject to call detail records. In the Assigned Members field, enter the specific extensions whose usage will be tracked. To simplify the process of adding multiple extensions in the Assigned Members field, the **Intra-switch CDR by COS** feature may be utilized in the SPECIAL APPLICATIONS form under the system-parameters section. To utilize this feature, contact an authorized Avaya account representative to obtain the license.

change intra-switch-cdr			Page 1 of 2		
INTRA-SWITCH CDR					
Assigned Members:	4	of 5000	administered		
1: 22001	19:	37:	55:	73:	91:
2: 22002	20:	38:	56:	74:	92:
3: 22005	21:	39:	57:	75:	93:
4: 22007	22:	40:	58:	76:	94:
5:	23:	41:	59:	77:	95:
6:	24:	42:	60:	78:	96:
7:	25:	43:	61:	79:	97:

For each trunk group for which CDR records are desired, verify that CDR reporting is enabled. Use the **change trunk-group *n*** command, where *n* is the trunk group number, to verify that the CDR Reports field is set to **y**. This applies to all types of trunk groups.

```
change trunk-group 80                                     Page 1 of 20
                                     TRUNK GROUP
Group Number: 80                Group Type: isdn                CDR Reports: y
  Group Name: OUTSIDE CALL          COR: 1                TN: 1                TAC: 103
  Direction: two-way                Outgoing Display? y          Carrier Medium: PRI/BRI
  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
                               Digital Loss Group: 13
Incoming Calling Number - Delete:  Insert:                Format:
                               Bit Rate: 1200          Synchronization: async    Duplex: full
Disconnect Supervision - In? y  Out? y
Answer Supervision Timeout: 0
```

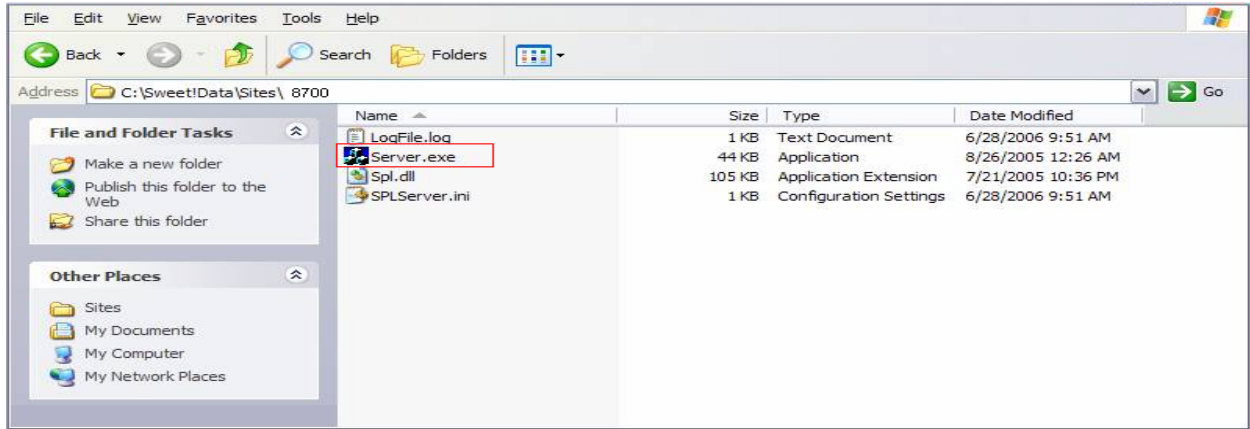
4 Configure the DATEL *CallSWEET!*

CallSWEET! connects to Avaya Communication Manager via the RSP over the TCP/IP port. CDR data is sent from Avaya Communication Manager into *CallSWEET!*, where the raw data is transformed into call records, which are then immediately available for reporting.

This section only covers the basic configuration to interoperate with Avaya Communication Managers. For additional information on configuring the DATEL *CallSWEET!*, refer to [3].

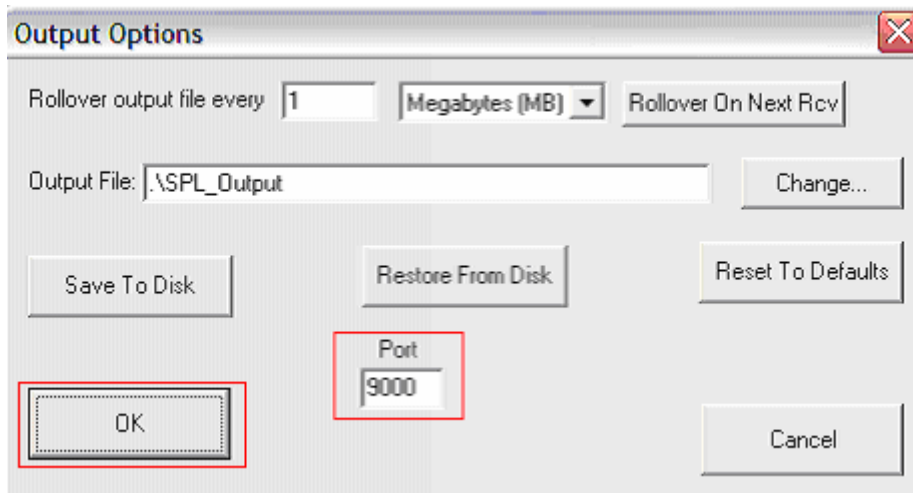
4.1 RSP Port Configuration

This section describes steps to configure a listening port for RSP. Navigate to the **Start** → **Programs** → **Sweet!Data** → **Sites** → **8700** directory and run **Server.exe**. The directory is created during the installation process.



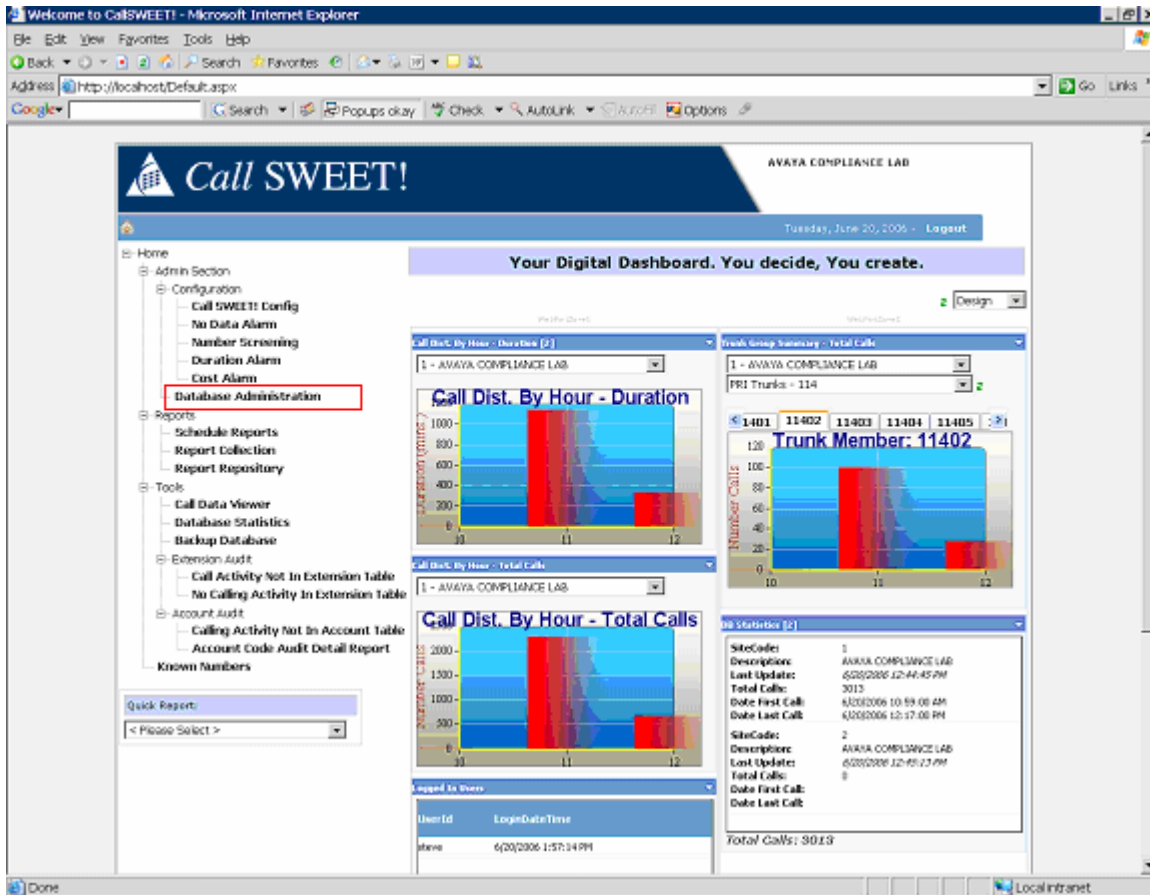
The following screen is used to configure the listening port. The listening port is configured to **9000**. This port number must match with the remote port number configured on Page 1 of the IP SERVICE form in Section 3. Default values may be used in the remaining fields.

Click the **OK** button to complete the RSP port configuration.



4.2 Generating Reports

Before generating any report, all trunk groups that are associated with sites must be configured. To accomplish this task, enter <http://localhost/Default.aspx> in the URL from the PC installed with CallSWEET!. The main menu (dashboard) screen appears as shown below. Select the **Home → Admin Section → Configuration → Database Administration** link from the left pane to access the Database Administration page.



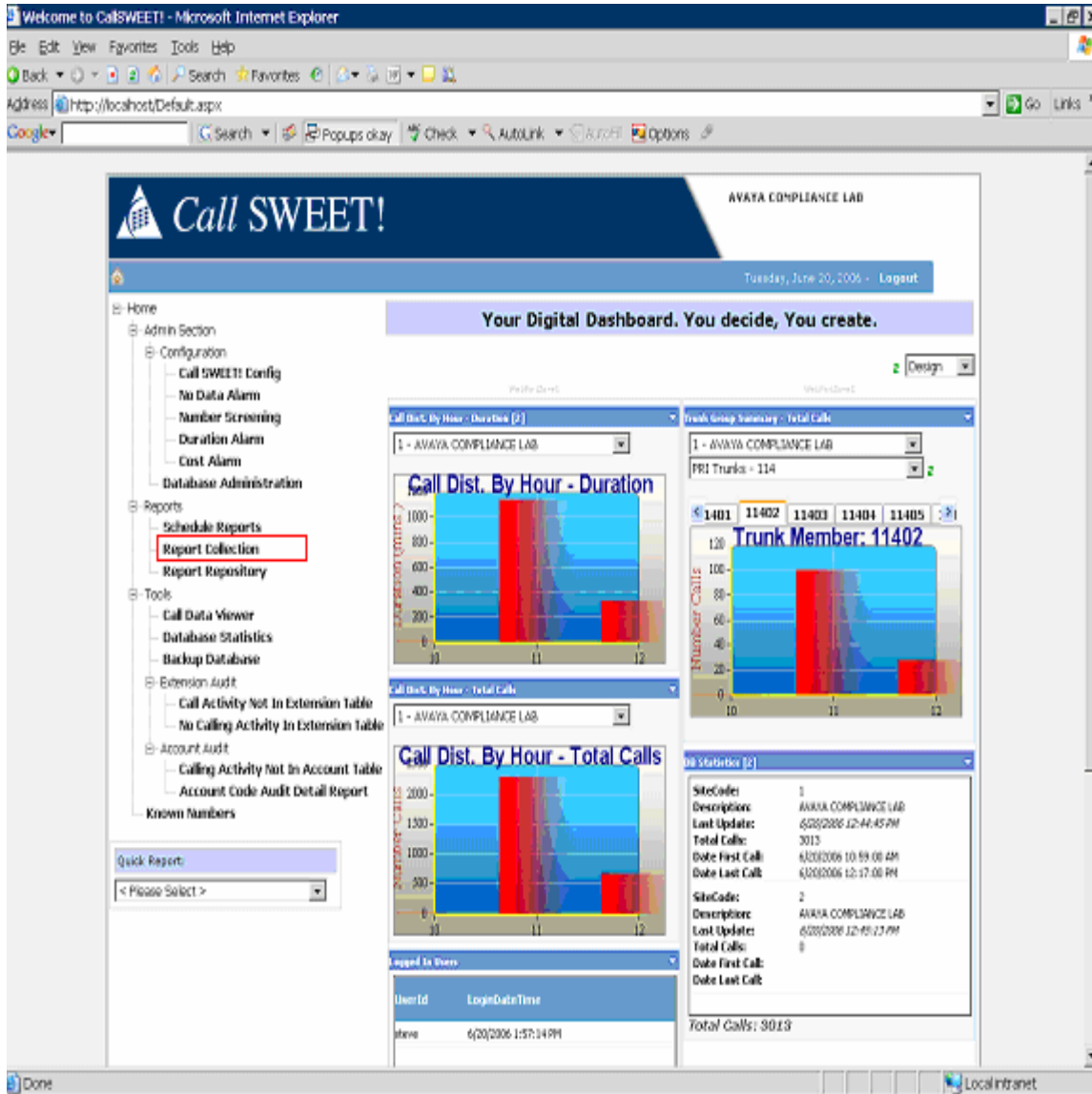
From the Database Administration page, click the **Trunk Groups** tab to add trunk groups to a database. To add trunk groups, click **Add new record** and provide the following information:

- Trunk Group Number
- Trunk Group Type
- Description

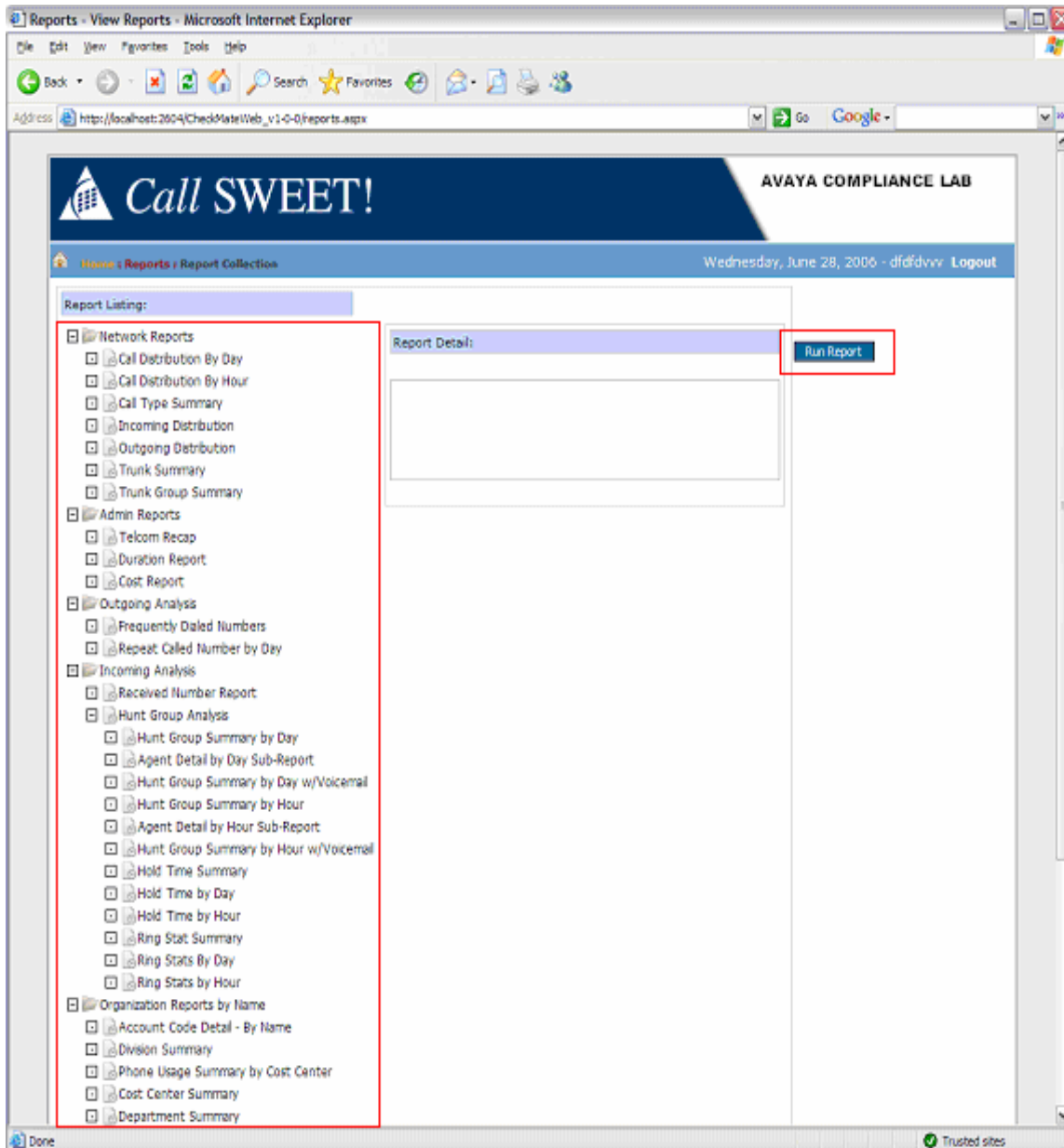
Use this procedure to add all trunk groups that will be subject to call detail records. After the trunk groups are added, click **Save** to complete the process of adding trunk groups to the database.

The screenshot shows the 'Call SWEET!' Database Administration interface. The 'Trunk Groups' tab is selected. A warning message states: 'WARNING: Modifying your system Trunk Groups will affect the way calls are processed!'. A dropdown menu is set to 'AVAYA COMPLIANCE LAB'. Below this, there is a table with three columns: 'Trunk Group Number', 'Trunk Group Type', and 'Description'. The values entered are '111', 'CO', and 'S8700' respectively. Below the table is a form for adding a new record. The form includes fields for 'Current Mode' (set to '[Item Edit]'), 'Site Code' (1), 'Trunk Group Number', 'Trunk Group Type', 'Description', 'Rate Number Reference', 'Vendor', 'Area Code', 'City', 'Vertical Grid', 'Cost Per Minute' (0), 'Exchange' (0), 'Line' (0), 'State' (set to '<< Select >>'), 'Horizontal Grid' (0), and 'LATA' (0). There are 'Save' and 'Cancel' buttons at the bottom of the form. The footer of the page reads '© 2006 DATEL Software Solutions'.

After all trunk groups are added to the database, enter <http://localhost/Default.aspx> in the URL from the PC installed with *CallSWEET!*. From the main menu (dashboard) screen, select the **Home** → **Reports** → **Report Collection** link in the left pane to access to the Report Collection page.



All types of reports can be generated from the Report Collection window shown below. Select the type of report under **Report Listing**, and click the **Run Report** button to view the chosen report.



The following screen shows a sample report utilizing the **Network Report → Trunk Summary** report under Report Listing.

Trunk Summary

6/20/2006
1:33:32PM
Page 4 of 5

113
Totals: 0 0.0 0.00 0 0.0 \$ 0.00 0 0.0 \$ 0.00

Trunk Group:114

Trunk Member	Incoming			Outgoing			Totals		
	Total Calls	Total Duration	Total Cost	Total Calls	Total Duration	Total Cost	Total Calls	Total Duration	Total Cost
11401	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11402	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11403	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11404	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11405	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11406	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11407	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11408	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11409	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11410	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11411	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11412	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11413	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11414	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11415	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11416	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11417	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11418	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11419	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11420	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11421	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11422	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
11423	131	65.5	0.00	0	0.0	\$ 0.00	131	65.5	\$ 0.00
114 Totals:	3,013	1,506.5	0.00	0	0.0	\$ 0.00	3,013	1,506.5	\$ 0.00

Trunk Group:115

5 Interoperability Compliance Testing

Interoperability compliance testing included feature, serviceability, and performance. The feature test evaluated the ability of *CallSWEET!* to collect and process CDR records for various types of calls. The serviceability test introduced failure scenarios to see if *CallSWEET!* can resume CDR collection after failure recovery. The performance test utilized bulk call volumes to generate a substantial amount of CDR records.

5.1 General Test Approach

The general test approach was to manually place intra-switch calls, inter-switch calls, inbound and outbound PSTN trunk calls to and from the telephones controlled by the Avaya Media Servers, and verify that *CallSWEET!* collects the CDR records and reports the correct attributes of the call. For serviceability testing, logical links were disabled/re-enabled in different sections of the network, and media servers were reset. For performance testing, a call generator was used to place calls over an extended period of time.

5.2 Test Results

All feature, serviceability and performance tests passed. *CallSWEET!* successfully captured and processed call records from Avaya Communication Manager. *CallSWEET!* also successfully processed the CDR data, and produced call accounting reports. The types of calls generated during the compliance test include: intra-switch calls, inbound /outbound PSTN trunk calls, inbound/outbound inter-switch IP trunk calls, transferred calls, and conferenced calls. Performance tests verified that *CallSWEET!* could collect call records during a sustained, high volume of calls.

6 Verification Steps

The following steps may be used to verify the configuration:

- On the SAT of each Avaya Communication Manager, enter the **status cdr-link** command and verify that the CDR link state is up.
- Place a call and verify that *CallSWEET!* receives the CDR record for the call. Compare the values of data fields in the CDR record with the expected values and verify that they match.
- Place internal, inbound trunk, and outbound trunk calls to and from various telephones, generate an appropriate report in *CallSWEET!*, and verify the report's accuracy.

7 Support

Technical support for *CallSWEET!* can be obtained by contacting DATEL's Hotline Support at 724-744-1380, or send an e-mail to support@datel-group.com.

8 Conclusion

These Application Notes describe the procedures for configuring the DATEL *CallSWEET!* to collect call detail records from Avaya Communication Manager. *CallSWEET!* successfully passed all compliance testing.

9 References

This section references the Avaya and DATEL documentation that are relevant to these Application Notes. The Avaya product documentation can be found at <http://support.avaya.com>, and the *CallSWEET!* documentation can be obtained by contacting *CallSWEET!* technical support.

[1] *Feature Description and Implementation For Avaya Communication Manager*, Release 3.1, Issue 4, February 2006, Document Number 555-245-205.

[2] *Administrator Guide for Avaya Communication Manager*, Release 3.1, Issue 2, February 2006, Document Number 03-300509.

[3] *CallSWEET! Users Guide*, Version 6.0.1.

©2006 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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 Developer*Connection* Program at devconnect@avaya.com.